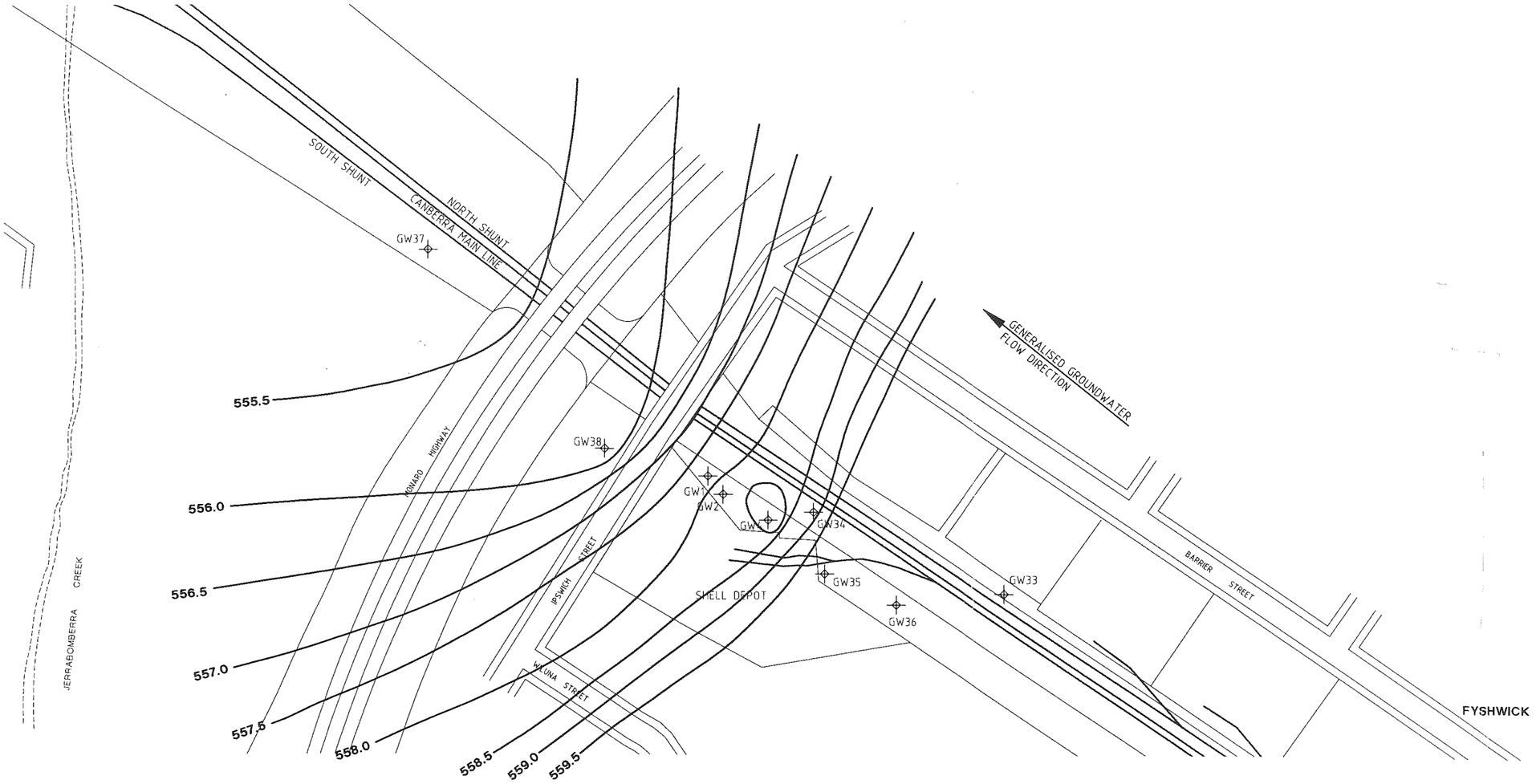

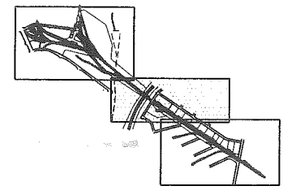

LEGEND

GW2 DENOTES GROUNDWATER WELL LOCATION

CODE	DATE	DESCRIPTION	BY	APPR	CODE	DATE	DESCRIPTION	BY	APPR
		REVISIONS AND APPROVALS					REVISIONS AND APPROVALS		

CLIENT
INDEC CONSULTING

PPK Environment & Infrastructure
PPK Environment & Infrastructure Pty. Ltd.
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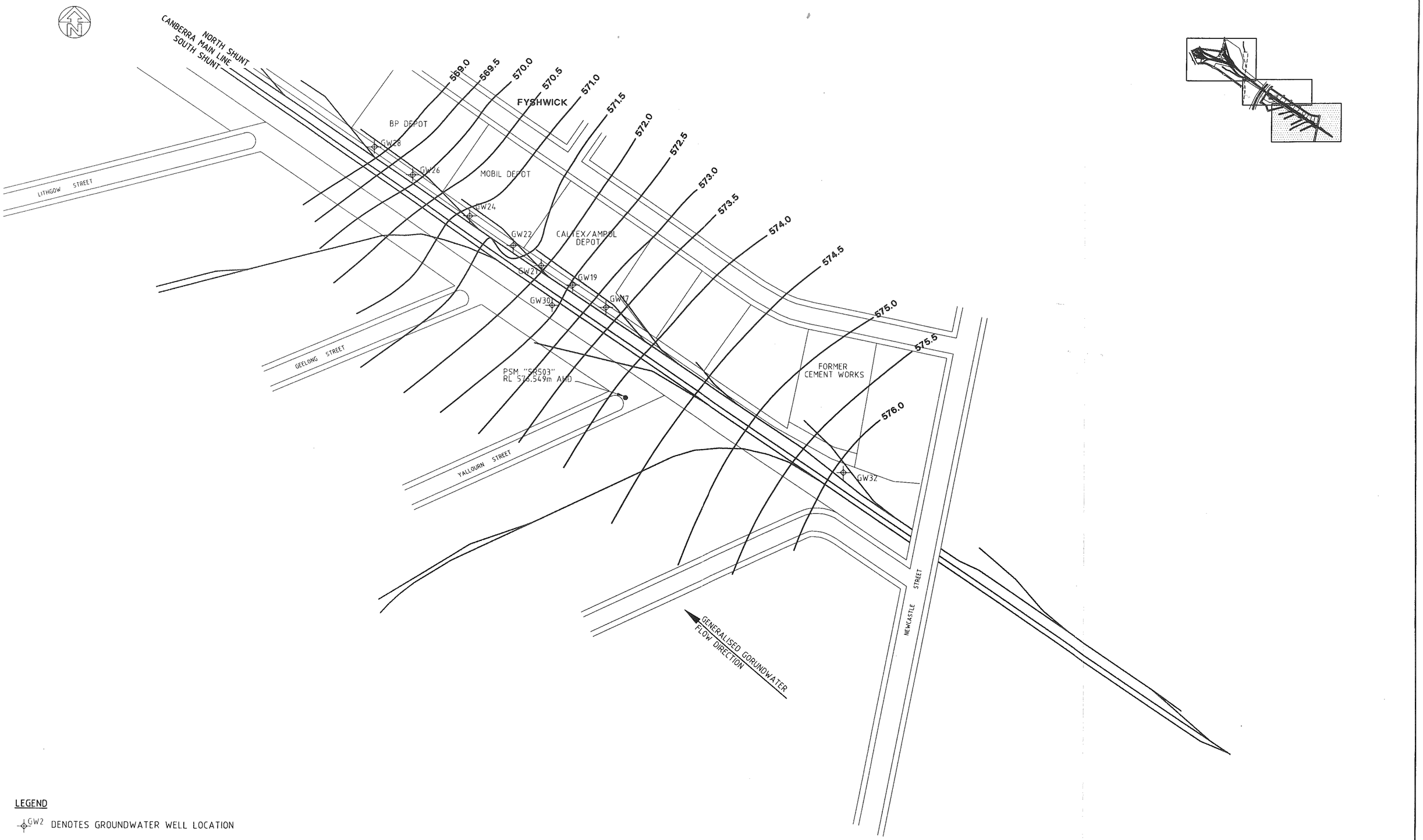
PROJECT
CANBERRA RAIL YARDS

TITLE
PHASE 2 INVESTIGATION
GROUNDWATER CONTOURS
SHEET 10 OF 11

DESIGNED	DATE	SCALES: A1 1:2000, A3 1:4000
DESIGN CHECK		CAD REFERENCE: 27K140A — DATE: —
DRAWN: BJB	19.10.98	PROJECT APPROVAL: —
DRAWING CHECK: JCR	19.10.98	CLIENT APPROVAL: - —
DRAWING No: 27K140A/10		ISSUE: -



LEGEND

GW2 DENOTES GROUNDWATER WELL LOCATION

CODE	DATE	DESCRIPTION	BY	APPR	CODE	DATE	DESCRIPTION	BY	APPR
		REVISIONS AND APPROVALS					REVISIONS AND APPROVALS		

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TITLE
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GROUNDWATER CONTOURS
SHEET 11 OF 11

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DRAWN BJB	19.10.98	PROJECT APPROVAL —
DRAWING CHECK BJH	19.10.98	CLIENT APPROVAL -
DRAWING No 27K140A/11		ISSUE -

Environmental Audit of the Australian National Facilities

Canberra Railway Station Yards and Rail Corridor

Australian National

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16 March 1998
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Contents

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Appendices

Executive Summary

PPK Environment & Infrastructure Pty Ltd was commissioned by Australian National (AN) to conduct an environmental audit of the Canberra Railway facilities, as one of a number of reviews being undertaken of AN facilities. The main objective of the audit was to identify and report on issues arising from past and present activities at the site, which may have environmental liabilities for AN.

The environmental audit of the Canberra site has indicated the following:

- *Fuel depots located along the railway corridor have been supplied from railway sidings and there is significant potential for hydrocarbon product spillages to have occurred in these areas which may have impacted on soil and groundwater (refer to Photos 1-4, Appendix D). The presence of a groundwater well on railway property suggests there may have been past groundwater concerns associated with these operations (refer to Photo 5).*

- *An old refuelling depot within the railyards may have experienced fuel leakages or spillages in the past resulting in localised soil and groundwater contamination (refer to Photos 6 and 7).*

- *Much of the railway yard site has been filled with ash and coal cinders from past steam locomotives and power station boiler ash (refer to Photo 8).*

- *An area in the northern part of the railyards has been filled in the past with materials of an uncertain nature.*

- *Storage of waste oils in the William Edmunds site has been identified as inadequate as there is no spillage containment provided and substantial leakage has occurred which has impacted on localised soils (refer to Photo 9).*

- *Disposal of oily water into stormwater drainage from the Australian Railways Historical Society (ARHS) operations is in contravention of environmental legislation. This effluent should be treated and disposed of to sewer (refer to Photos 10 and 11) .*

- *Drums of waste oils and flammable degreasers and paints were observed in several areas of the site unbunded and stored inappropriately (refer to Photos 12-15).*

- *It was identified during the investigation that two underground fuel storage tanks have been removed from the abattoir site along the railway corridor and there is some potential for hydrocarbons to have impacted on railway property.*

- *A significant quantity of oil was observed disposed of into a stormwater drain next to Ipswich Street and the Shell depot. This oil was sourced off site and steps should be taken to prevent recurrence (refer to Photo 16).*

- *Broken asbestos cement sheeting was identified in the corrugated toilet shed located north of the station platform and car club garage (refer to Photo 17).*

- *Coal stockpiles in the main Canberra railway yard next to the old fuel depot, and in the ARHS site may have contaminated underlying soil, could potentially create an environmental dust problem (refer to Photo 18).*

- *Lead acid batteries were observed stored outside in the open and without spillage containment in the ARHS leased area. Although these were located over bituminised ground spillage or leakages would impact on stormwater runoff from the area (refer to Photos 19 and 20).*

- *Minor volumes of oils and a single lead acid battery were observed stored outside on the William Edmunds site and have potential to cause localised contamination if spillages or leakage occurs (refer to Photo 21 and 22).*

- *Significant hydrocarbon staining was observed in the railway yard adjacent to the platform, however it was reported that this had been cleaned up in the past and a hydrocarbon resistant fabric now underlies this area (refer to Photos 23 and 24).*

- *The railway corridor east of Fyshwick was not observed to have any adjacent major environmental issues and was surrounded by predominantly rural land use (refer to Photos 25 and 26).*

Analyses of soil samples taken from the site has indicated that the soils sampled from the ARHS stormwater drain (ARHS-1) contains concentrations of petroleum hydrocarbons in excess of the adopted criteria for continued railway use. This soil sample contained slightly elevated levels of polycyclic aromatic hydrocarbons (PAHs) and metals, however these were detected well below the adopted criteria for continued railway use.

Soil extracted from near the ash pit area which was observed to contain ash and cinders (AP-1) was analysed for metals and PAHs, however no elevated concentrations were detected in this sample. A soil sample taken from the western yard area, also where ash and cinders were observed (CY-1) was found to contain slightly elevated PAHs, although well below the adopted criteria for continued railway use. No elevated concentrations of metals were detected in this soil sample.

Analyses of fibrous cement samples has indicated that Robbo's Pet Barn and the corrugated iron toilet building behind the Austin Siddely Car Club garage have claddings which contain asbestos.

Several potential environmental issues identified as part of this assessment are recommended to be investigated further to define the degree and extent of potential contamination caused by past or present activities on or adjacent to the site. These include further assessment of the ARHS stormwater drain contamination, potential contamination due to past landfilling operations, and the potential contamination as a result of the old on site refuelling facility and adjacent fuel depots and unloading operations on railway sidings.

If future plans for the site include redevelopment to a more sensitive land use (ie residential housing), it is recommended that a comprehensive program of soil and groundwater sampling and analysis be undertaken to assess potentially contaminated areas identified in the audit.

1. Introduction

PPK Environment & Infrastructure Pty Ltd was commissioned by Australian National (AN) to undertake environmental audits of its facilities located throughout Australia. The audits were conducted to identify any areas of potential, past and current environmental effects, and to assess potential AN environmental liabilities and compliance with appropriate legislation.

Environmental effects and liabilities are intended to measure the presence or likely presence of hazardous substances, including petroleum products, on the site indicating a previous or continuing release or threat of release, which may present a material risk of harm to public health or the environment.

AN have a requirement to ensure that their environmental management is in compliance with local, state and federal environmental legislation, and that any non-compliances are identified and remedied. Furthermore, Australian National's approach is to ensure that not only are any non-compliances dealt with, but that environmentally significant operations and performance are improved and maintained at the best possible levels.

2. Background Information

2.1 Site Identification

The railway yard site and corridor were not identified as being described on Certificates of Titles by the ACT Government Registrar General during the title search undertaken. Sections of land within the railyards are described in cadastral maps as follows:

(1) Fyshwick District, Section 47, Block 2;
(2) Fyshwick District, Section 30, Blocks 3,12,13,17,19 and 21. (Block 3 originally Volume 889, Folio 6 and Block 19 Volume 1513, Folio 34);
(3) Fyshwick District, Section 39, Blocks 2 and 3;
(4) Fyshwick District, Section 11, Block 1 (originally Volume 1249, Folio 75).

The subject site is defined in the original Seat of Government Railway Act 1928, as well as subsequent Commonwealth Government Gazettes which have added to and removed areas of land as required. Extracts of the Government Gazette entries of 1958, 1961, 1964, 1965, 1966 and 1969 are included in Appendix C.

The address of the subject railway station property is Wentworth Avenue Kingston, ACT, although the railway corridor extends east to Queanbeyan in New South Wales. A street map showing the location of the Canberra Railway Station and railway corridor is included in Appendix A, and site plans are shown in Appendix B.

2.2 Ownership

The current ownership documentation indicates the owner of the site is the Australian National Railways Commission in accordance with the Seat of Government Railway Act of 1928. The subject site has been associated with railway operations since at least 1914. Copies of the current ownership documentation are included in Appendix C.

2.3 Party Responsible for Assessment

Australian National
1 Richmond Road
Keswick SA 5035.

2.4 Environmental Consultant

PPK Environment & Infrastructure Pty Ltd
101 Pirie Street
Adelaide SA 5000.

2.5 Proposed Land Use

The land is intended for continued railway use as it comprises the rail link between Canberra and Sydney.

2.6 Operator of Site

The State Rail Authority of NSW has operated the site as a tenant since approximately May 1985, however historical information indicates the railway system and station has always been operated as part of the NSW system.

3. Site History

3.1 Site Location

The Canberra Railway Station and yards are located in the eastern suburb of Kingston in the Australian Capital Territory (ACT). The ACT is located approximately 300 kilometres south west of Sydney.

3.2 Ownership

The owner of the property is Australian National. The site has been used for railway purposes and has been under the control of the Commonwealth Government since 1928 when the Seat of Government Railway Act came into force. The property has been leased by the State Rail Authority of NSW in accordance with the operating agreement with the Australian National Railways Commission since May 8, 1985.

3.3 Aerial Photographs

Aerial photographs were examined of the Canberra Railyards site at intervals of approximately 10 years, from 1950 to 1997. ? 58-78 20 YEARS UNEXCEPTIONABLE CONSIDERING CLOSER INTERVALS ARE AVAILABLE.

1950

- The railway yards between the buildings appear to be grassed, and the station building and goods shed are located in the southern yard area. The goods shed is just north west of the station building.
- Turntable is visible to the eastern extremity of the yards.
- Residential properties are present to the north of the railyards, with Jerrambomberra Creek further north. There are also many larger systematically arranged buildings to the south of the railyards.
- The railway line extends north west to an industrial area.
- The railway corridor to the east of the railyards is surrounded by pasture and farmland.

1958

- The goods shed has been extended and the station building also appears longer.
- There are additional buildings in the north western yard area, and the railway line still extends into the north western industrial zone.
- The turntable is still visible in the eastern yard with small sheds located south east.
- Residential properties are still evident north of the railyards, and many of the buildings to the south have been removed.
- The railway corridor to the east is still surrounded by pasture and farmland, and Jerrambomerra Creek cuts the railway line to the east of the railyards and flows around the northern perimeter of the residential area.

- To the south of the railyards a small industrial site appears to have been developed.

1978

- The old goods shed is gone and a new station building has replaced the previous structure.
- There is dark soil staining in the north western yard area, opposite a large new building which may be the government printing offices.
- A new goods shed is present near where the old turntable was located, with substantial bitumen surfacing surrounding it. The diesel fuelling area is now visible to the south west of the new goods shed.
- The railway yards have been expanded replacing buildings south of the residential area and extending north to the west of Jerrambomberra Creek. This area appears to have been extensively filled.
- Jerrambomberra Creek has been developed with concrete channels and a silt retention pond to the east of the filled area. A new railway bridge crosses the creek to the east of the railyards.
- Industrial development has commenced south of the railway line and west of the creek with several large buildings present.

1988

- The yards appear generally similar to the 1978 photo with the removal of small buildings in the western yard area.
- There appears to be minor staining of soil in the Historical Society area, and an additional building has been added in the northern railyard extension.
- The filling activities between Jerrambomberra Creek and the railyards appear to have ceased with vegetation covering the site. Filling activities appear active further east across the creek.
- Further industrial development has occurred to the south of the railway yards.

1997

- The railway yards appear unchanged from the 1988 photograph.
- Filling appears to have ceased east of Jerrambomberra Creek with vegetation covering the area.

Aerial photographs examined are listed below and are contained in Appendix E:

Photo No	Run No	Altitude	Month	Year
5025	6	12000'	November	1950
5107-5128	8	10330'	May	1958
93	78c	7100'	March	1978
6705	16	7300'	February	1988
168-200	16	2200 m	March	1997

3.4 Historical Information

The constitution under which the Commonwealth of Australia was established in 1901 provided for the development of a new national capital. In 1909 the site finally selected was Canberra, and it officially came into being in 1911.

One of the advantages of this location was its proximity to the existing railway network which connected with Sydney. Furthermore the Seat of Government Acceptance Act 1909 provided that if the Commonwealth constructed a railway in the new territory to the border, New South Wales would construct a railway from Yass to join it.

In February 1913 work commenced on the construction of an 8.5 kilometre section of railway line linking Queanbeyan in NSW with the power station and Commonwealth stores depot in Wentworth Avenue, Kingston. On May 25, 1914 the first goods train arrived in Canberra.

The Canberra branch was not initially successful, and the station master was removed from Canberra by September 1914, and then came under the control of the Queanbeyan station master. In October 1914 the Commonwealth authorities considered operating the line independent from NSW, however this never eventuated and the segment has always been operated by NSW.

Canberra was reopened as a railway station in 1924 with the building of a new station including a goods siding and a rail loop. By 1927 a new weatherboard station building was constructed along with additional sidings and a crane for goods traffic.

The appearance of the Canberra railway segment changed little over the first 50 years of operation. Sidings to service the Fyshwick industrial area began to be developed in 1958, however major improvement of facilities for passenger and goods services was delayed by intermittent negotiations for the transfer of the Canberra railway system to NSW.

The Commonwealth Railways which were based in South Australia did not consider the Canberra system as an important part of the network especially as the NSW railways operated the site. However, by 1965 it was recognised that substantial upgrading was necessary and the Commonwealth Government decided to remodel the railway yards and station.

A new brick passenger terminal was opened on October 26, 1966 and this was followed by improving the goods yards and shed which involved removing the turntable. Furthermore the proliferation of industrial sidings caused the main line to be blocked for long periods and three running lines were subsequently developed between Canberra station yards and Newcastle Street to the east of Fyshwick. New concrete bridges were then developed by 1970, to cross Jerrambomberra Creek and the railway line between Newcastle Street and Ipswich Street.

Leased sidings servicing the industrial areas of Fyshwick have included the Shell Company of Australia since 1955, Caltex Oil since 1962, Esso Australia since 1963 and BP Australia since 1964. Commonwealth Industrial Gases (CIG) have also operated a siding since 1979 and Dairy Farmer's Co-Operative since 1955.

Advice from Environment ACT has identified that the railyards and corridor has been associated with light industry which could have contributed to contamination of the subject land. Although the railway yards are listed by the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC, 1992) at present the contaminated sites unit of Environment ACT has no site specific information suggesting contamination of the subject land. Environment ACT indicate however that this does not rule out the potential for site contamination due to past or present activities on or adjacent to the railway site. A copy of this correspondence is included in Appendix H.

4. Information Sources

(1) PALM - ACT Planning and Land Management Department, Challis Avenue, Dickson.
(2) Australian National - 1 Richmond Road, Keswick.
(3) Mr Terry Bond, Station Master Canberra Railway Station.
(4) "Railways", Walter M Shellshear.
(5) Mr Michael Potter, Australian Railways Historical Society (ACT Division).
(6) ACT Registrar of Titles, Constitution Avenue, Canberra.
(7) Mr Ray Noble, NSW Railways Track Supervisor (Canberra - Goulburn).
(8) Mr Fenn Hinchcliffe, Environmental Services Manager, Rail Estate (NSW Railways).
(9) "With Iron Rails - History of the Railways", David Bourke, SRA, 1988.
(10) William Edwards Pty Ltd - Plumbers and Gasfitters.
(11) "Robbo's Pet Supplies" Canberra Railway Yard.
(12) "Railways of the Canberra and Monaro Region", HJW Stokes.
(13) Mr Keith Ballard, ACT Waste.
(14) Mr Norm Mueller, Ecowise ACT.
(15) McCann and Associates - Real Estate Valuers and Land Economists.
(16) Mr Daniel Walters, Environment ACT.
(17) Mr Ziggy Durek, Environment ACT.
(18) Mr David Bursby, Weed Officer - Environment ACT.
(19) Mr Paul Purcell, Rail Estate Wagga (NSW Railways).

5. Site Inspection

5.1 Topography

The Canberra Railway Yards are located in the eastern suburb of Kingston in the ACT. The topography of the railyards site is relatively flat and level, as is the surrounding land with a slight upward slope to the south. The Jerrambomberra Wetlands lie to the north and is a lower lying area adjacent to the creek which collects surrounding stormwater flows. The elevation of the Canberra Railway site is approximately 578 metres above sea level.

The Canberra to Queanbeyan rail corridor runs between the Canberra railyards and the Queanbeyan railway station, and the topography varies along the corridor. The area through which the railway line runs is moderately hilly with the Molongolo River running along to the north of the rail corridor, and several small creeks and gullies running across the railway easement.

5.2 Local Geography and Hydrogeology

The local geography of the Canberra Railway Station is relatively flat railyards which have reportedly been filled in some areas with ash and fill materials. The surrounding geography includes residential properties to the north with industrial land to the south and west, all of which lie in a relatively flat level and level landscape.

Jerambomberra Creek lies to the east and north of the site, and flows to the north west into Lake Burley Griffin.

ACT Electricity and Water (Ecowise) advised that local groundwater depth varies seasonally from 2 mBGL to 10 mBGL, and generally lies between 4 and 6 mBGL.

5.3 Local Soil Types and Geology

Reference to Published information (Bureau of Mineral Resources, Geology and Geophysics - Geology of Canberra, Queanbeyan and Environs, 1980) shows that the near surface geological conditions vary along the length of the railway easement between Kingston and Queanbeyan. At the north western (Kingston) end, and in the Fyshwick area the surficial geology is likely to comprise Canberra Formation sedimentary rock which included calcareous shale, limestone, sandstone and tuff that in some areas is overlain by Tertiary Age quartz pebble gravel and coarse sand.

In between these two areas Quaternary Age alluvial soils including gravel, sand, silt and clays associated with Jerrambomberra Creek are present at the natural ground surface. South of Fyshwick the near surface geology alters to Ainslie Volcanic Rock comprising volcanic andesite. As the railway easement then approaches the Molongolo, the Tertiary and Quaternary materials noted above are likely to overlie the volcanic rock.

Further east towards Queanbeyan the near surface geology is likely to alter once more, to Pittman Formation sedimentary rocks, principally sandstone, siltstone and shale.

5.4 General Observations

Canberra Railway Station and Yards

The Canberra Railway Station and Yards were located in the Canberra suburb of Kingston, and was bordered by Wentworth Avenue to the west, Cunnuingham Street to the north and Jerrambomberra Creek to the east.

The railway yard area was identified as being split into several leased areas which include the old goods shed which is leased by "Robbo's Pet Barn", two garage buildings leased by the Austin Siddely Car Club, the northern yard areas which are leased by the Australian Railways Historical Society (ARHS) and William Edmunds Plumbers and Gasfitters. The delineation of these areas are shown in the lease plans contained in Appendix C.

Active Railyard Area (NSW Railways)

The railway operational area was observed to be generally well maintained in terms of appearance. Most of the unsealed areas of the yards (60%) were well grassed and gardens were well kept. The station building, adjacent garage and the barracks were not identified as having any potentially contaminating activities likely to cause a significant liability.

There was significant oil staining observed in front of the railway station building the NSW Country Link Trains stopped to pick up and drop off passengers. Much of this area had been lined with an oil resistant fabric which was designed to prevent oil contamination of underlying soil.

Ash and cinders and coal residues were observed scattered over large areas of the site in the western yard area, and it was reported that power station ash had also been disposed of in this area.

To the eastern end of the railyards an old refuelling area was observed which was just south west of the former goods shed. This refuelling area was reported to be disused and out of operation since the mid 1980's. The fuel tank was a modified tender tank from a steam locomotive, and pipework ran underground to empty pump sheds and then on to a refuelling point.

The tank was located over a concrete pad which had earthen walls partially lined with concrete. There was no clear evidence of major hydrocarbon spillage in the form of staining in this area although a slight hydrocarbon odour was detected. The two timber pump sheds had concrete flooring, however there was evidence of past spillage both in and around these sheds.

An old ash pit was located adjacent to the refuelling area, and this was reported to be the old area of the yards where steam locomotives were watered and cleaned out. There was evidence of ash and cinders disposed of in this area.

Adjacent and north of the ash pit a coal stockpile was observed mounded on the ground and was reported to be used by the ARHS when old steam locomotives were operated as part of their tourism activities.

The area immediately north east of the railway yards has been reported to have been filled in the past, and aerial photographs confirm that substantial filling east of Jerrambomberra Creek occurred between 1960 and 1978. Some of this filled area was reported to comprise the current railyards area, and no records of fill material disposed of in this area could be obtained via ACT Waste. There is potential for potentially contaminating materials to have been disposed of in this area.

Australian Railway Historical Society (ARHS) Area

The ARHS area has been leased since approximately 1981 and has been used for the refurbishment and storage of historical locomotives and rolling stock. A large workshop shed has been built by ARHS to house equipment and rolling stock which is being worked on.

Within this workshop and also in an adjacent shed storage of flammable solvents and paints were observed without adequate spill containment or labelling. There were also additional paints and solvents observed stored outside on unsealed ground.

Waste oils were reported to be generated from the operations on the site, however these consisted only of approximately 400 litres per year. These were disposed of to a recycling depot according to site personnel. Waste oil drums were observed stored outside on unsealed ground without labelling.

A coal stockpile was observed along the northern area of the yard with a front end loader parked alongside. This coal was reported to be used for the firing of the historical steam locomotives owned and operated by the ARHS.

Another oil drum was observed near the locomotive inspection pit also stored on unsealed ground. The inspection pit was reported to collect waste water and oily residues from locomotive lubrication systems. This pit was discharged to a stormwater drain via a brick interceptor pit which appeared filled with sediments. These sediments smelled of oil and appeared to consist of ash and soil, and discolouration of soil in the drain was visible.

To the south of the main operational and workshop area a bituminised area was devoted to storage of rolling stock and components. Most of the componentry consisted of metallic railway parts, however approximately 20 - 30 lead acid batteries of various sizes were observed stored on pallets in the open in a few areas. A single unsealed 5 litre can of oil was also observed in this area.

It was reported that asbestos from old locomotive boilers had been removed by contractors and disposed of. Cleanaway were reported to remove solid wastes from the

site, and it is likely that a substantial portion of the north eastern part of this site is underlain by fill as a result of historical land filling activities.

William Edmunds Plumbers and Gasfitters Area

Further to the north and adjacent to the ARHS site is located a small industrial site which also has a railway line and privately owned rolling stock. This area is leased by a plumbing company and consists of a large workshop building and platform as well as several small storage sheds.

Inside the workshop shed approximately 200 litres of paints and oils were observed stored haphazardly around the building. No spill containment was provided for these liquids although these was no identified spillage.

Various plumbing components and scrap was observed to be stored over the site and one drum of flammable solvent was noted stored outside on the ground. Furthermore four 205 litre drums of waste oils were observed stored in the compound with substantial staining underneath due to spillage.

A single damage lead acid battery was located over a stormwater drain.

The site is also likely to be underlain by fill material as a result of past landfilling activities in the area.

Austin Siddely Car Club Garages

Two garage buildings are leased by the Austin Siddely car Club, and although internal access to these buildings was not gained, contents of the buildings could be seen from outside. Both garage buildings were observed to contain a number of vehicles in various stages of restoration.

Minor quantities of paints and solvents were observed stored in these garages which would be used for vehicle restoration purposes, however no evidence of spillage was observed.

A corrugated iron toilet building located behind the garage situated opposite the railway station platform was internally inspected and found to have damaged fibrous cement lining. This material was sampled to assess it for asbestos content.

Waste from this area appear to be disposed of by Pacific Waste Management as one of their bulk bins was located adjacent to the garage.

Robbo's Pet Barn

This operation was housed in what was the goods shed which was constructed in the late 1960's during the upgrading of the railway operations in that era. The building is now leased by Robbo's Pet Barn and is used for the storage and retail sale of pet foods, pet supplies and accessories.

No significant environmental issues were identified for this building or the operations, however it is suspected that the roofing and external cladding materials contain asbestos. A sample of external cladding was sampled to assess for asbestos content.

Railway Corridor to Queanbeyan

The railway corridor between Canberra Station yard and Queanbeyan was inspected by rail vehicle initially and then in more detail by foot in the specific areas of interest identified during the initial observation.

Immediately to the east of the railway yard and south of the line light industrial sites and warehouses are located. These include Woolworths and Dairy Farmers and lie adjacent to Jerrambomerra Creek. Some minor landfilling activities were observed next to the railway line where an old siding was located. The fill appeared to be clean soil.

To the north of the line and bridge, the land was elevated 3-4 metres above the level of the creek bed, and this was due to past landfilling activities which diverted the creeks flow and reduced flooding of the area. This filled area is adjacent to the railyards and building rubble and debris was observed embedded in this area.

The railway corridor between Ipswich and Newcastle streets in Fyshwick is bordered by light industrial activities including motor vehicle wreckers, scrap metal yards and fuel depots. The fuel depots comprise large above ground storage tanks which are filled from rail sidings. Fuel companies with storage facilities include Shell, to the south of the main line, as well as BP, Mobil, Caltex and Ampol all to the north of the main line.

It was reported that all of the fuel sidings are currently used apart from the Mobil siding. The Mobil depot was reportedly filled from road tankers. The sidings were visibly stained in some areas and may have been due to past fuel spillages or locomotive leakage. A groundwater well was observed on railway property opposite the Mobil depot and may suggest monitoring of a hydrocarbon contamination issue may have been undertaken in this area.

To the south of the railway line and east of the Shell depot, industrial sites present include Blue Circle Cement, CSR Timber Products, a scrap steel storage yard and Monier Tiles. No significant contamination issues were identified sourced from these sites impacting on the railway property.

A motor wrecking yard was observed west of the BP siding and north of the Shell siding on the northern side of the main line. No issues were observed sourced from the wreckers yard impacting on the railway property. An open earthen stormwater drain was inspected adjacent to the Shell Depot and was filled with a substantial volume of black waste oil. The oil was coming from the stormwater drain which ran north into the Fyshwick industrial area and the source of this oil contamination could not be identified. Several industrial sites are located in their area as well as automotive workshops and the nature of the oil appeared consistent with automotive maintenance activities.

The rail corridor east of Newcastle Street was traversed and no environmental issues were identified from the railway line. The land use along the corridor is predominantly rural with an old abattoir site and small modern tannery facility located south of the line near Queanbeyan. It was reported by Environment ACT that two underground fuel storage tanks were removed from the abattoir site without appropriate testing and notification. If these have leaked then there is potential for hydrocarbon impacts onto railway land.

The tannery site was a small operation which has been operating since 1977 and recycles and contains all of its tanning solutions. No spillages were reported by the owner during an interview.

To the north of the line the Molongolo River runs and the Queanbeyan Sewerage Ponds are located. These are down gradient from the railway line corridor and would not be expected to impact on railway land.

5.5 Site Environmental Testing

Three surface soil samples were collected from the Canberra Railway Yards for preliminary analyses to assess for potential contamination, and are described as follows.

One soil sample was extracted from a 0-150 mm depth from sediments contained in a brick interceptor trap located on the Australian Railway Historical Society site drain. The trap was installed to collect and remove oily residues and solids from a stormwater drain. This sample was designated ARHS-1 and was analysed for metals, total petroleum hydrocarbons (TPH) and polycyclic aromatic hydrocarbons (PAHs).

The second sample was taken from a 0-150 mm depth within the eastern railyard area near the old ash pit where ash and cinders were visible. This sample was designated AP-1 and was analysed for metals and PAHs.

The third sample was taken from a 0-150 mm depth within the western railyard area where ash and cinders and coal residues were visible. This sample was designated CY-1 and was analysed for metals and PAHs.

Three suspected asbestos cement samples were taken from various locations within the railyards to be analysed for asbestos. These include a sample from the goods shed cladding (A1), the toilet block internal cladding behind the Vintage Car Club Garage (A2), and building demolition debris in the William Edmunds yard (A3).

5.6 Laboratory Used

Australian Government Analytical Laboratories (AGAL)
51-65 Clarke Street
South Melbourne Vic 3205.
(NATA and ISO 9001 Certified)

Standard soil sampling techniques were used, utilising sulphamic acid solution and deionised water to clean and rinse sampling equipment prior to and between sampling events.

Soil samples were collected in acid washed solvent rinsed jars, with teflon lined screw top lids. Samples were labelled and stored in an esky with cooler bricks, to maintain temperature below 40°C, to minimise loss of volatiles, prior to and during transport of samples to the laboratory.

5.7 Results of Analyses

The surface soil sample extracted from the ARHS stormwater drain from a 0-150 mm depth, (ARHS-1) where sediments had deposited was analysed to contain 26,000 mg/kg of TPHs, predominantly in the heavier fractions suggesting lubricant oil as a probable source. This value is in excess of the adopted soil contamination criteria for industrial commercial (railway) use.

Minor concentrations of PAHs were also detected in this sample with total PAHs measured at 4.1 mg/kg. Elevated levels of copper, lead and zinc were found to be present in the sample at 190 mg/kg, 140 mg/kg and 120 mg/kg respectively. The levels detected for metals and PAHs were below the adopted soil contamination criteria for railway use.

The surface soil sample taken from near the ash pit area from 0-150 mm depth (AP-1) was found to contain no PAHs above laboratory limits of detection, and no elevated levels of metals.

The surface soil sample taken from the western yard area from 0-150 mm depth (CY-1) was found to contain minor elevated concentrations of PAHs, although well below the adopted soil contamination criteria. No elevated levels of metals were detected in this sample.

Asbestos samples were analysed using stereo microscopy by PPK, and only sample A3 taken from the debris in the William Edmunds yard was found to be free of asbestos. Both samples A1 and A2 from Robbo's Pet Barn and the old toilet shed respectively, contained chrysotile and amosite asbestos fibres.

A Summary of Analyses is included in Appendix F and copies of Laboratory Reports and Chain of Custody documentation are contained in Appendix G.

6. Potential for Environmental Contamination

6.1 Evidence of Environmental Damage

- Areas of the railway yards which are bare may indicate residual weedicides present in soil over the site.
- Minor soil staining and hydrocarbon odours around the old diesel refuelling area and storage tank.
- Ash and cinders from steam locomotives disposed of over the railyards and along the railway formation.
- Heavy oil staining along railway lines in front of the railway station building.
- Hydrocarbon odours and staining of soil and ballast adjacent to the fuel depot sidings between Ipswich and Newcastle Streets.
- Oil spillage in the open stormwater drain adjacent to the Shell fuel siding east of Ipswich Street and South of the railway line.
- Oil staining of soil within the Australian Railways Historical Society (ARHS) yard area.
- Discolouration of soil within the open stormwater drain along the northern boundary of the ARHS yards.
- Coal stockpiles, coal ash and residues in the ARHS yards.
- Potentially noxious weeds including Blackberry and Scotch Thistle were observed along the railway line corridor.
- General rubbish disposed of south of the railway line adjacent to the scrap metal yard.
- Soil staining from waste oil drum spillage in the William Edmunds yard area.
- Minor wastes and building rubble identified in the landfilled area to the north and west of Jerrambomberra Creek.

6.2 Potential Contamination Sources

- Fuel depots along the fuel unloading sidings are a potential source of hydrocarbon contamination.
- Old refuelling area in the railyards are a potential source of hydrocarbon contamination.
- Lead acid batteries stored in the ARHS yards may have potential for contamination of soil or surface waters with acid and metals.
- Pollutants in stormwater impacting on soil within the railway property.
- Improper storage of hydrocarbons paints and solvents in several area of the site.
- Coal, coal ash and cinders stored and disposed of over the site may contain PAHs and metals.
- Weedicide residues on the site may contain arsenic.
- Landfilling activities in the northern area of the site may have contaminated soil and/or groundwater.
- Old abattoir site just south of the railway corridor may have impacted on groundwater in the area due to old fuel USTs located on the site in the past.

6.3 Potential Liabilities

- Hydrocarbon contamination from fuel unloading and storage activities on and adjacent to the railway land.
- Residual weedicides present in the soil due to past poisoning activities.
- Ash and cinders disposed of over the site may contain PAHs and metals.
- Hydrocarbon and PAH contamination in the ARHS stormwater drain and continuing discharges.
- Past landfilling activities in the northern area of the site.
- Broken asbestos cement sheeting and debris in an old toilet shed.
- Hydrocarbon contamination in earthen stormwater drain where oils were identified being released.

6.4 Australian National Control Measures

None reported or identified during interviews or inspection. NSW Railways do have an Environmental Management Plan for the site which was sighted in the Canberra Railway Station Masters Office.

Furthermore, emergency oil and chemical spill response equipment was observed stored in the garage building adjacent to the station. A hydrocarbon resistant membrane was observed being used in the station yard to collect oil spillage onto the railway line.

8. Environmental Effects Register

Meanings of Priority Ratings for Particular Environmental Effect

Rating	Meaning
1	Immediate Action Required to rectify Environment Effect. Continued non-compliance will lead to significant financial and legal liability.
1F	Potential significant financial liabilities (on land value).
2	Urgent action required to rectify potentially serious environmental effect and financial or legal liability.
3	Non-compliance with environmental legislation. Not likely to lead to significant financial loss.
4	Correctly in compliance but some action necessary to demonstrate good practice.
5	Currently in compliance, no changes or action required.

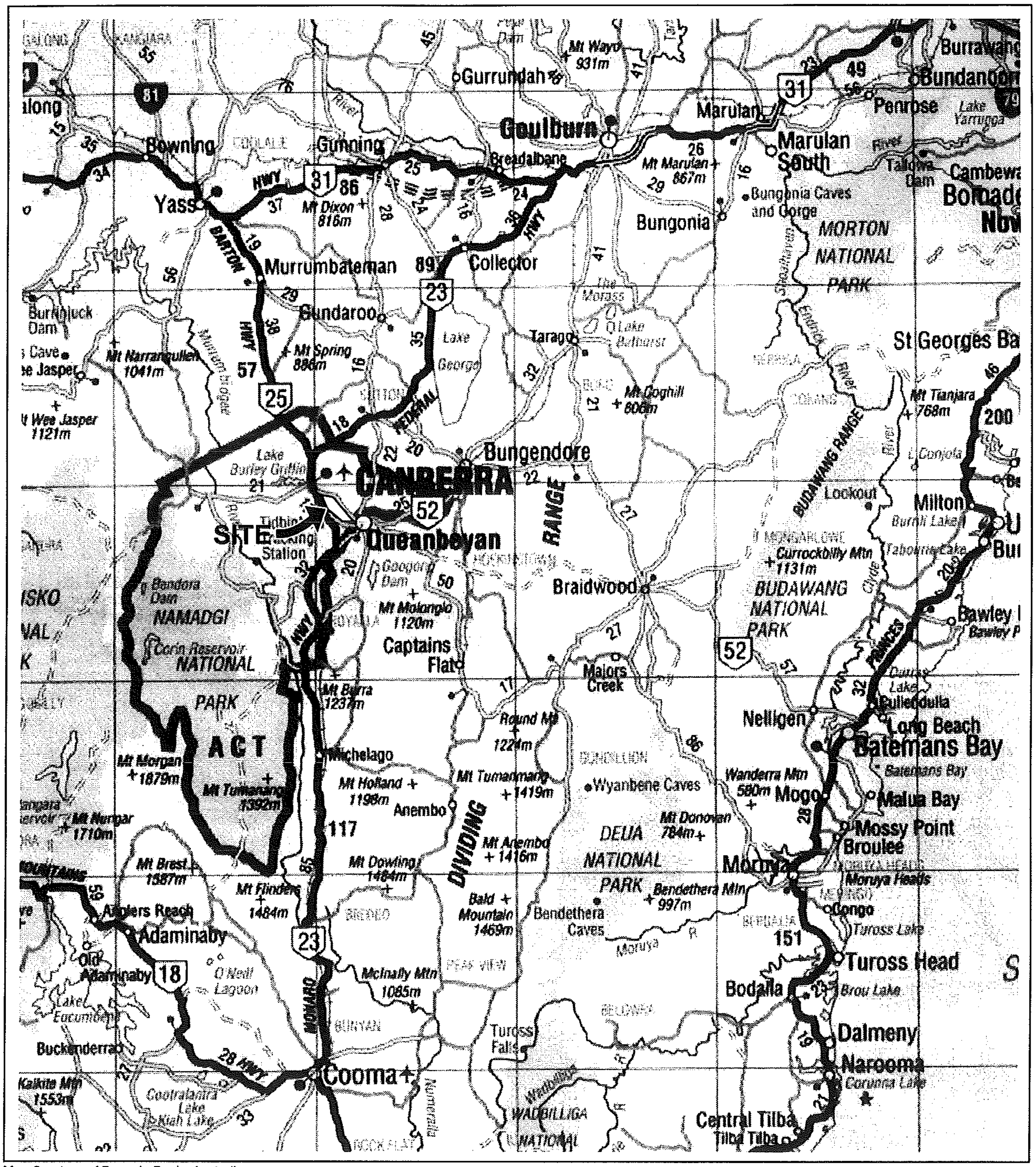
Environmental Effects Register
Canberra Railway Yard and Corridor

Environmental Effect Source	Circumstances (eg emergency)	Potential Effect	Magnitude of Effect	Legal/Other Obligation	Compliance Status	Action Priority	Recommendations	Indicative Cost ($)
Fuel Depots/Sidings	Abnormal	Spillage or leakages of fuels	'000s litres	ACT Environmental Legislation - Environment Protection Act 1997	uncertain without testing	2	Soil and groundwater testing adjacent fuel depots/sidings	10k
Spillage of oil into stormwater drains	Normal	Hydrocarbon contamination of surface waters and soils	'00s litres	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	non compliance	1	Cease disposal of oily wastes into stormwater drain on ARHS site, and find sources of oil contamination in Ipswich St Drain	2k
Lead acid battery storage (ARHS site)	Normal	Acid and metals into drains and surface waters	litres	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	non compliance	3	Remove and store batteries in a bunded and covered area	1k
Old Refuelling Depot	Past	Past spillages and leakages of fuel onto ground	'000s litres	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	uncertain without testing	2	Soil and groundwater testing adjacent to the old fuelling point	2k
Landfill Area	Past	Potentially contaminating materials in filled area	uncertain	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	uncertain without testing	3	Soil and groundwater testing along site boundary adjoining the fill area	5k
Ash and Cinders filling of the western railyards	Past	Filling with power station ash may have contaminated soil or groundwater	uncertain	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	uncertain without testing	3	Soil testing in the western yard area	3k
Minor oil/solvent storage	Normal	Flammables and oils stored inappropriately	'00s litres	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997 and AS 1940	non compliance	2	Ensure storage of all flammables and combustible liquids in accordance with AS 1940	5k
Soil staining	Past	Hydrocarbons in soil	moderate	ACT Environmental Legislation - Environment Protection Act 1997	non compliance	3	Soil testing and clean up	2k
Waste oil drums	Normal	Hydrocarbons in soil	minor	ACT Environmental Legislation - Environment Protection Act 1997 and AS 1940	non compliance	3	Store waste oils in bunded and covered areas in accordance with AS 1940	2k

Environmental Effect Source	Circumstances (eg emergency)	Potential Effect	Magnitude of Effect	Legal/Other Obligation	Compliance Status	Action Priority	Recommendations	Indicative Cost ($)
Abattoir USTs	Past	Hydrocarbons in soil and groundwater	uncertain	ACT Environmental Legislation - Water Pollution/ Environment Protection Act 1997	uncertain without testing	3	Soil and groundwater testing along boundary of abattoir	5k
Asbestos Cement Debris	Past	Public Health	minor	ACT Worksafe Code	non compliance	3	Remove asbestos cement debris and damaged materials	1k

Appendix A

Location Map



Map Courtesy of Penguin Books Australia

Australian National

Phase II Environmental Site Assessments

Site Location Map

Canberra Railway Yards

Appendix B

Site Plans

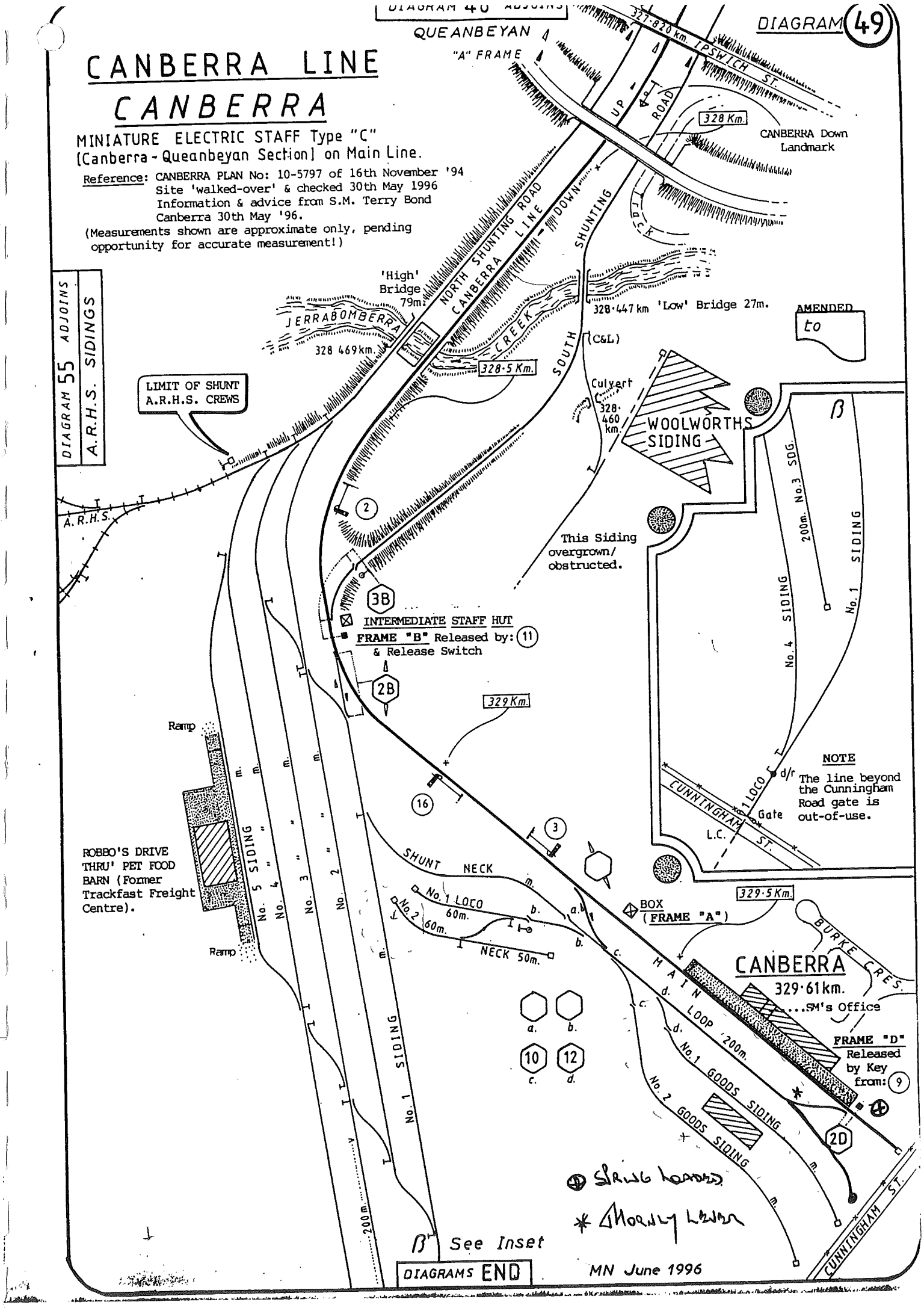


DIAGRAM 40 ADJOINS
QUEANBEYAN
"A" FRAME
327·820 km. IPSWICH ST.
DIAGRAM 49
CANBERRA LINE
CANBERRA
MINIATURE ELECTRIC STAFF Type "C"
(Canberra - Queanbeyan Section) on Main Line.
Reference: CANBERRA PLAN No: 10-5797 of 16th November '94
Site 'walked-over' & checked 30th May 1996
Information & advice from S.M. Terry Bond
Canberra 30th May '96.
(Measurements shown are approximate only, pending opportunity for accurate measurement!)
UP ROAD
328 Km.
CANBERRA Down Landmark
NORTH SHUNTING ROAD
CANBERRA LINE
DOWN SHUNTING
'High' Bridge 79m.
JERRABOMBERRA CREEK
328 469km.
328·5 Km.
328·447 km 'Low' Bridge 27m.
AMENDED to
SOUTH (C&L)
Culvert 328·460 km.
WOOLWORTHS SIDING
DIAGRAM 55 ADJOINS A.R.H.S. SIDINGS
LIMIT OF SHUNT A.R.H.S. CREWS
A.R.H.S.
This Siding overgrown/ obstructed.
3B
INTERMEDIATE STAFF HUT
FRAME "B" Released by: (11)
& Release Switch
2B
329 Km.
Ramp
ROBBO'S DRIVE THRU' PET FOOD BARN (Former Trackfast Freight Centre).
No. 5 SIDING
No. 4 SIDING
No. 3 SIDING
No. 2 SIDING
No. 1 SIDING
200m.
SHUNT NECK
No. 1 LOCO 60m.
No. 2 60m.
NECK 50m.
BOX (FRAME "A")
329·5 Km.
CANBERRA
329·61km.
...SM's Office
BURKE CRES.
MAIN LOOP 200m.
No. 1 GOODS SIDING
No. 2 GOODS SIDING
FRAME "D" Released by Key from: (9)
2D
CUNNINGHAM ST.
L.C. Gate
1 LOCO
d/r
NOTE
The line beyond the Cunningham Road gate is out-of-use.
No. 4 SIDING
No. 3 SOG.
No. 1 SIDING
200m.
Slow loaded.
Mostly Level
See Inset
DIAGRAMS END
MN June 1996

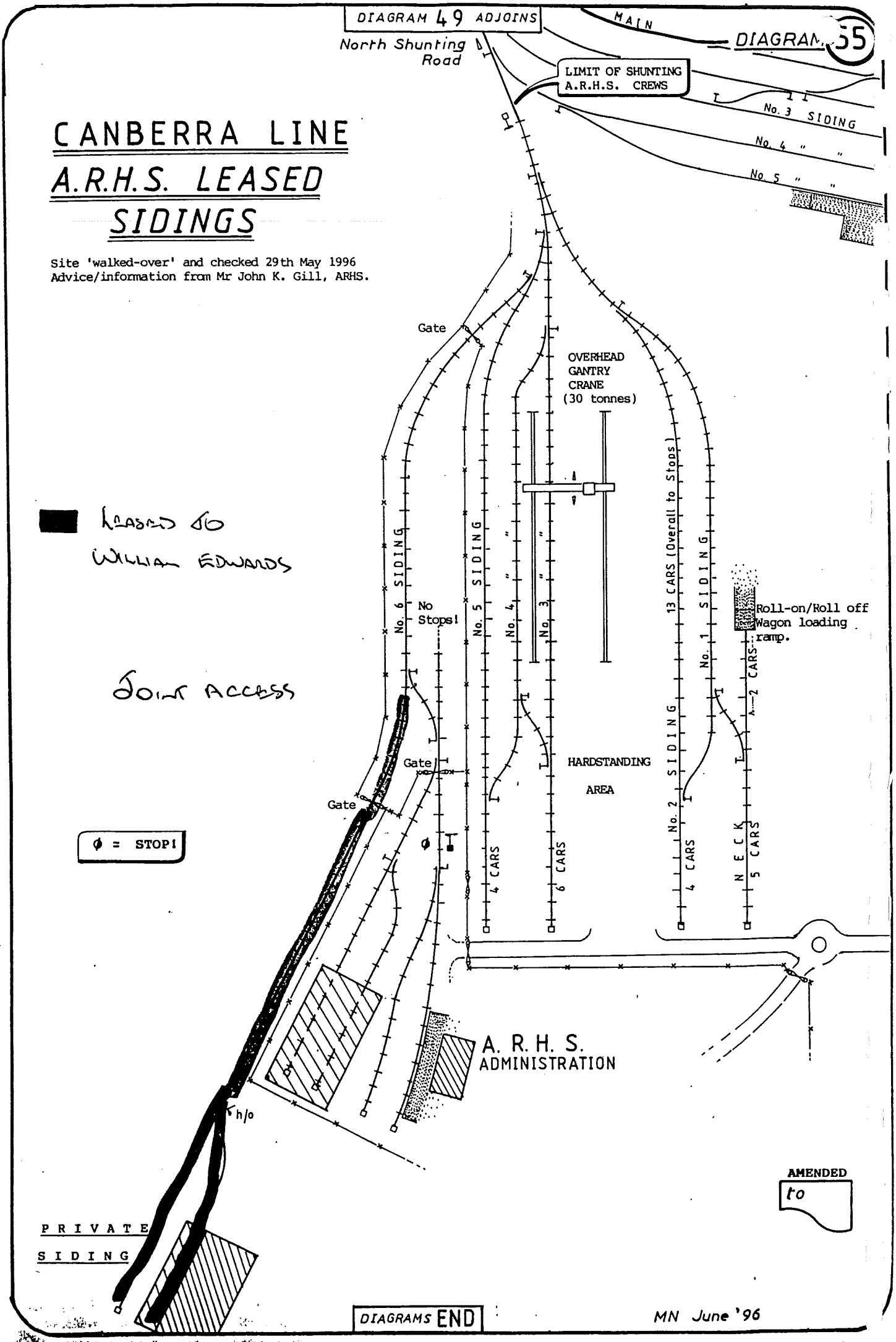


DIAGRAM 49 ADJOINS
North Shunting Road
MAIN
DIAGRAM 55
LIMIT OF SHUNTING
A.R.H.S. CREWS
No. 3 SIDING
No. 4 " "
No. 5 " "
CANBERRA LINE
A.R.H.S. LEASED SIDINGS
Site 'walked-over' and checked 29th May 1996
Advice/information from Mr John K. Gill, ARHS.
Gate
OVERHEAD GANTRY CRANE (30 tonnes)
LEASED TO WILLIAM EDWARDS
No. 6 SIDING
No Stops!
No. 5 SIDING
No. 4 "
No. 3 "
13 CARS (Overall to Stops)
No. 1 SIDING
Roll-on/Roll off Wagon loading ramp.
JOINT ACCESS
Gate
Gate
HARDSTANDING AREA
No. 2 SIDING
4 CARS
6 CARS
4 CARS
NECK
2 CARS
5 CARS
ϕ = STOP!
A. R. H. S.
ADMINISTRATION
h/o
PRIVATE SIDING
AMENDED to
DIAGRAMS END
MN June '96

CANBERRA LINE
INDUSTRIAL SIDINGS
FYSHWICK

MINIATURE ELECTRIC STAFF Type "C" (Canberra ~ Queanbeyan Section) on Main Line.
"YARD WORKING" Conditions on the NORTH and SOUTH SHUNT Roads.

Reference: CANBERRA PLAN No: 10-5797 of 16 Nov '94.
Site 'walked-over' & checked 29 May '96

*** = INTERMEDIATE STAFF HUT

= DOWN TRAINS MUST PROCEED TO CANBERRA VIA DOWN MAIN LINE

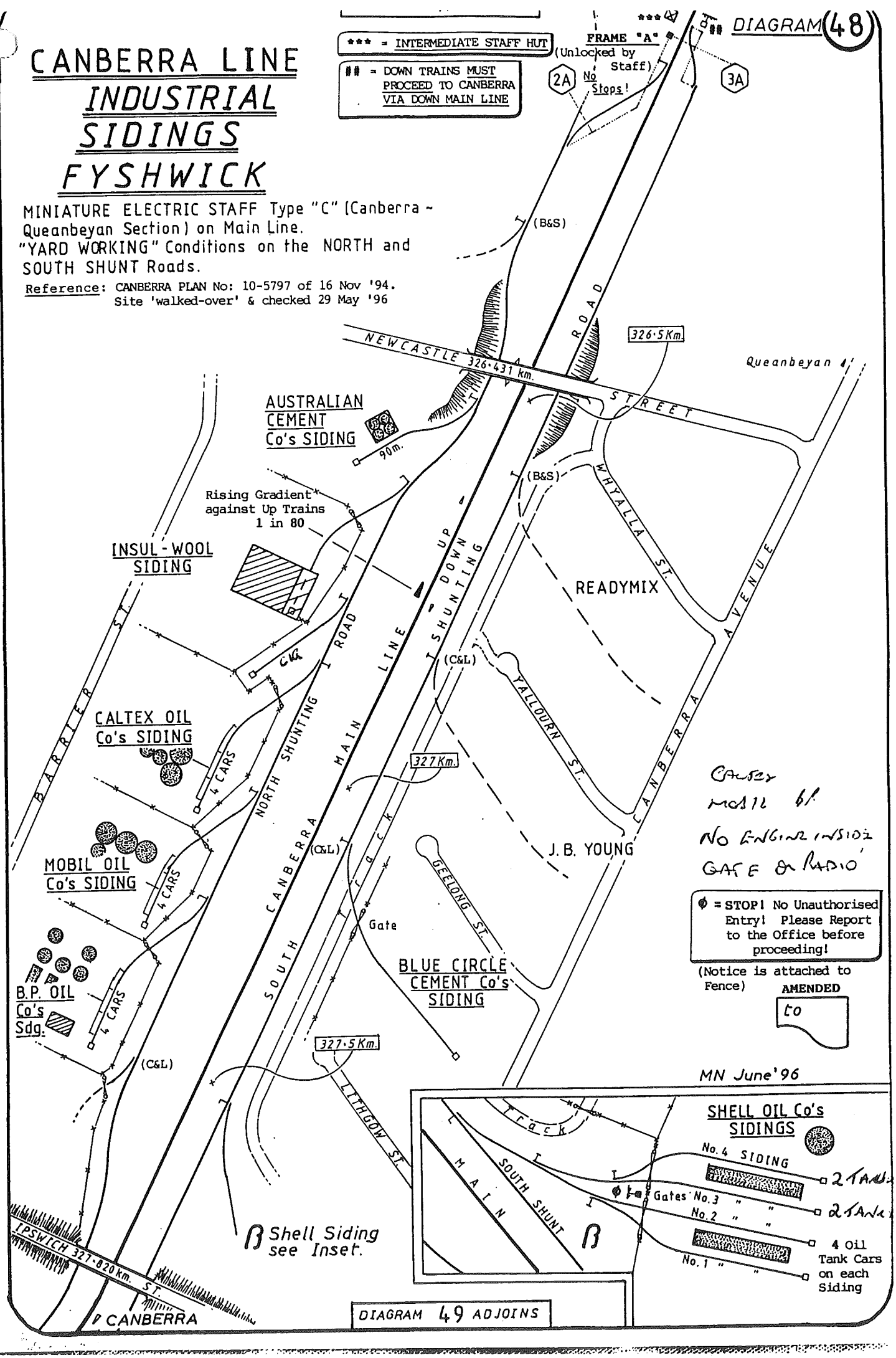


DIAGRAM 49 ADJOINS

Appendix C

Ownership Documents

SEAT OF GOVERNMENT RAILWAY ACT 1928.*

An Act relating to the Seat of Government Railway.

BE it enacted by the King's Most Excellent Majesty, the Senate, and the House of Representatives of the Commonwealth of Australia, as follows:—

Short title.

1.—(1.) This Act may be cited as the *Seat of Government Railway Act* 1928.*

Definitions.

2. In this Act, unless the contrary intention appears—

"the Commissioner" means the Commonwealth Railways Commissioner appointed under the *Commonwealth Railways Act* 1917-1925;

"the Federal Capital Commission" means the Commission constituted in pursuance of the *Seat of Government (Administration) Act* 1924-1926;

"the Railway" means the Seat of Government Railway, the route of which is described in the Schedule to this Act, and includes all sidings and other lines of the Railway situated on the land described in those Schedules.

Occupation and use of land for railway purposes.

3.—(1.) The Commissioner may occupy and shall have the exclusive use, for railway purposes, for such period as he thinks necessary, of the land described in the Schedules to this Act.

(2.) The Federal Capital Commission may grant to the Commissioner the right to the exclusive use of any other lands vested in the Commission which the Commissioner certifies to be required for the purposes of the railway.

(3.) Where any land which has been occupied and used by the Commissioner in pursuance of sub-section (1.) of this section, or the right to use which has been granted to the Commissioner in pursuance of sub-section (2.) of this section, is no longer required for railway purposes, the Commissioner shall certify accordingly in writing, and, upon the publication of that certificate in the *Gazette* possession of the land described in the certificate shall be delivered to the Federal Capital Commission.

Railway, &c., to vest in Commonwealth Railways Commissioner.

4.—(1.) There shall be vested absolutely in the Commissioner—

(*a*) the Railway and all rolling-stock belonging to the Commonwealth in connexion with the Railway, but not including the land described in the Schedules to this Act;

* No. 40 of 1928, assented to and commenced on 26th September, 1928.

(*b*) all stations, yards and buildings situated on the land described in the Schedules to this Act and connected or used in connexion with the Railway; and

(*c*) all wires, instruments, and other telegraphic or telephonic apparatus (not being the property of the Postmaster-General) used in connexion with the Railway.

(2.) The Commissioner may, at any time while any land is occupied or used by him in pursuance of the last preceding sub-section, remove therefrom any property vested in him in pursuance of this section.

Application of *Commonwealth Railways Act* 1917–1925.

5. The Commissioner shall have, in relation to the Railway, all the powers and functions vested in him under the *Commonwealth Railways Act* 1917-1925 and that Act shall apply in relation to the Railway and other property vested in the Commissioner in pursuance of this Act as if the Railway and other property had been vested in him in pursuance of the *Commonwealth Railways Act* 1917-1925.

THE SCHEDULES.

THE FIRST SCHEDULE.

DESCRIPTION.

All that piece or parcel of land situate in the Territory for the Seat of Government described hereunder. Commencing at survey station W.14 of the survey of the boundary between the State of New South Wales and the Territory for the Seat of Government adjacent the junction of the Goulburn-Cooma Railway line with the Queanbeyan-Canberra Railway line near the Town of Queanbeyan and bounded partly on the South by such boundary being lines bearing:—

275°	40′	20″	100.39	links	263°	59′	20″	107.13	links
273°	57′	20″	100.17	links	261°	16′	10″	100.63	links
271°	33′	20″	100.01	links	259°	37′	37″	74.74	links
268°	27′	40″	100.07	links					

thence on the south-west generally by lines bearing:—

283°	16′	50″	1,494.20	links	329°	49′	16″	381.45	links
280°	57′	04″	246.09	links	318°	21′	37″	379.25	links
294°	17′	40″	99.97	links	306°	48′	47″	384.38	links
294°	08′	40″	1,581.91	links	295°	12′	45″	380.28	links
291°	22′	30″	299.76	links	284°	38′	09″	326.14	links
282°	35′	40″	261.87	links	279°	45′	35″	564.96	links
276°	17′	40″	379.40	links	293°	38′	55″	198.50	links
267°	03′	40″	310.05	links	304°	58′	40″	685.10	links
257°	41′	50″	590.15	links	290°	31′	10″	255.94	links
245°	09′	00″	416.18	links	303°	19′	41″	197.28	links
235°	11′	00″	862.18	links	303°	22′	19″	4,464.62	links
227°	03′	00″	679.06	links	318°	10′	36″	1,378.10	links
250°	06′	10″	1,246.90	links	312°	39′	03″	367.55	links
251°	44′	00″	1,054.22	links	301°	19′	55″	378.98	links
274°	03′	00″	640.90	links	291°	38′	14″	261.18	links

809/60.—28—III.

THE FIRST SCHEDULE—*continued.*

279°	10′	30″	804.47 links	287°	43′	25″	1,021.41 links
290°	46′	00″	451.62 links	286°	17′	59″	308.42 links
284°	48′	00″	2,853.00 links	296°	00′	59″	421.09 links
277°	57′	40″	63.38 links	307°	29′	42″	421.02 links
301°	50′	00″	1,268.42 links	318°	47′	19″	707.39 links
299°	24′	00″	621.29 links	314°	12′	19″	383.41 links
308°	15′	00″	739.77 links	302°	53′	18″	374.50 links
302°	45′	00″	696.66 links	291°	25′	17″	384.24 links
314°	38′	47″	320.92 links	284°	00′	29″	1,494.58 links
335°	34′	53″	1,437.28 links	283°	51′	50″	897.19 links

to a point on the arc of a circle of 62.12 links radius the centre of which lies to the North West thence by 137.64 links of that arc having a chord bearing 220° 30′ 50″ for 111.17 links thence by lines bearing 283° 59′ 20″—405.08 links and 224° 41′ 00″—290.97 links to the North East side of Wentworth-avenue, thence on the South West by that Avenue bearing 334° 41′ 00″—1,818.18 links to the South East side of Dawes street, thence on the North West by that street bearing 64° 41′ 00″—42.42 links, thence on the North East by lines bearing 154° 41′ 00″—757.57 links and 148° 59′ 00″—152.27 links to the South East side of Cunningham street, thence on the North West by that street bearing 64° 41′ 00″—641.85 links and 97° 37′ 00″—173.81 links, thence on the West by lines bearing—

356°	14′	00″	154.54 links	347°	08′	00″	136.36 links
357°	43′	00″	164.08 links	340°	13′	00″	136.36 links
357°	51′	00″	121.21 links	334°	33′	00″	113.63 links
353°	54′	30″	136.36 links	323°	34′	20″	241.81 links

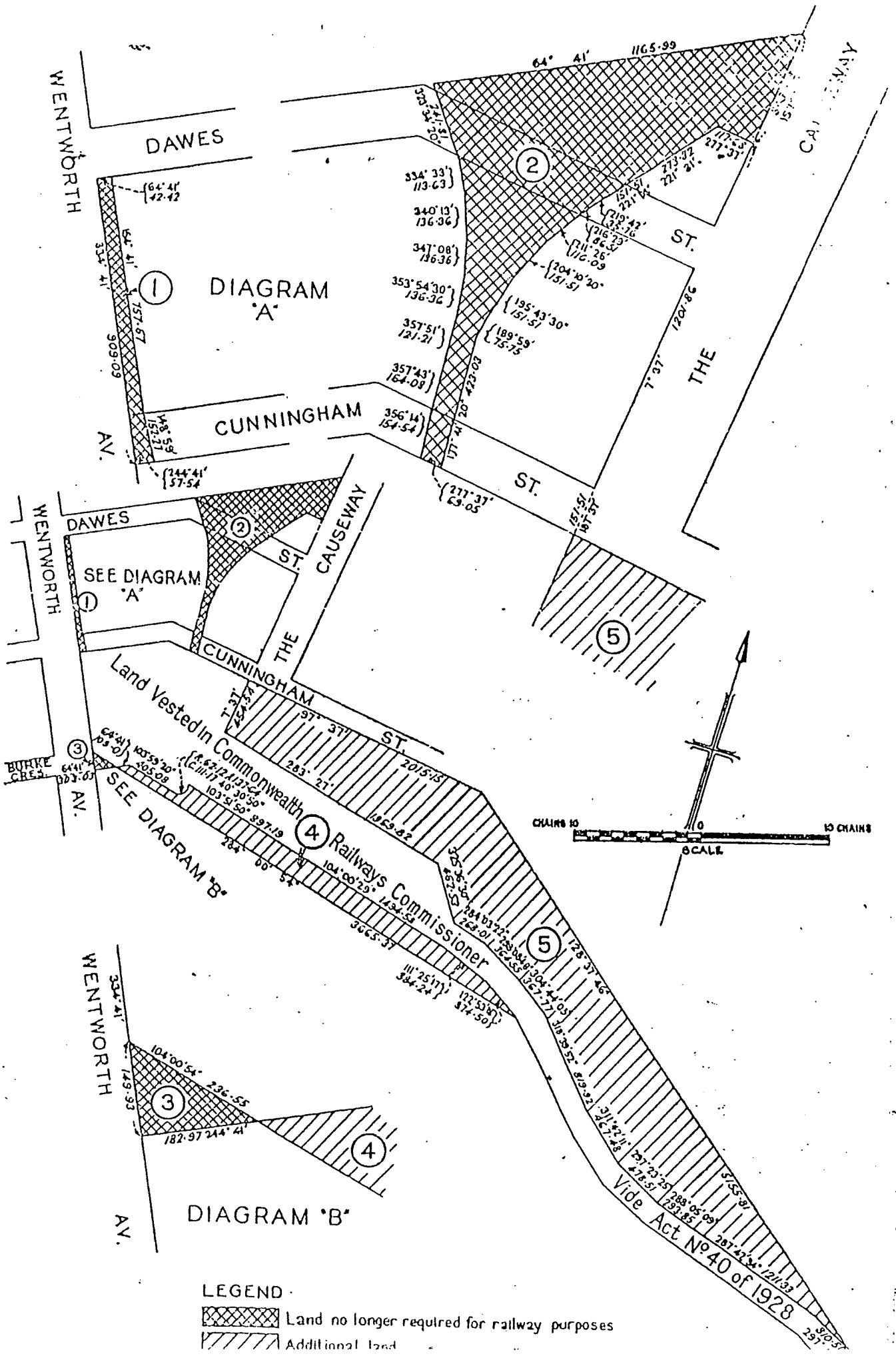
thence on the North West by a line bearing 64° 41′ 00″—1,165.99 links to the Western side of the Causeway, thence on the East generally by that Causeway bearing 187° 37′ 00″—363.68 links, thence by lines bearing—

277°	37′	00″	117.68 links	211°	25′	00″	116.09 links
221°	31′	00″	273.82 links	204°	10′	30″	151.51 links
221°	14′	00″	151.51 links	195°	43′	30″	151.51 links
219°	42′	00″	35.76 links	189°	59′	00″	75.75 links
216°	29′	00″	86.51 links	177°	41′	20″	423.03 links

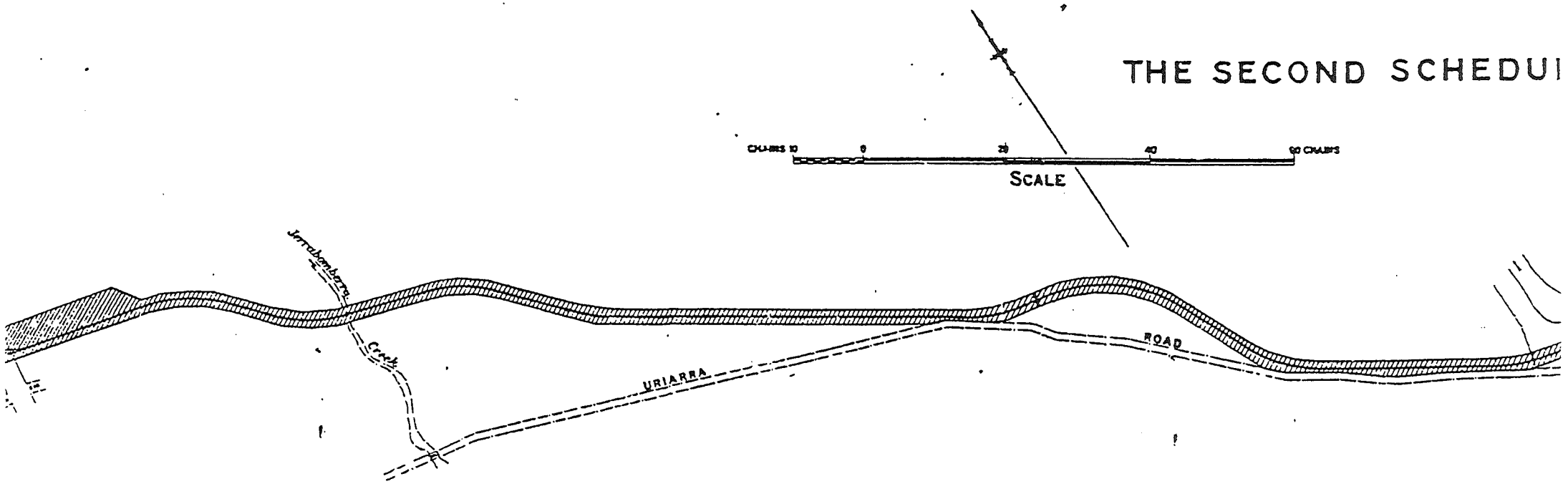
to the South side of Cunningham-street, thence by that street bearing 97° 37′ 00″—456.53 links to the Western side of The Causeway, thence by that Causeway bearing 187° 37′ 00″—454.54 links and thence on the North East generally by lines bearing—

103°	27′	00″	1,969.82 links	150°	24′	11″	344.10 links
145°	36′	30″	462.53 links	139°	22′	11″	384.48 links
104°	03′	22″	268.01 links	127°	52′	47″	378.33 links
118°	08′	48″	364.55 links	123°	05′	46″	2,276.18 links
124°	44′	05″	367.77 links	117°	02′	00″	400.68 links
138°	39′	52″	819.92 links	108°	43′	30″	142.31 links
131°	42′	11″	467.48 links	105°	18′	00″	1,228.50 links
117°	23′	25″	478.51 links	100°	47′	20″	844.00 links
108°	05′	09″	293.85 links	104°	38′	00″	2,154.53 links
107°	42′	34″	1,211.33 links	85°	02′	17″	703.41 links
117°	17′	15″	310.50 links	70°	43′	00″	1,311.43 links
126°	58′	14″	420.75 links	66°	43′	00″	458.80 links
138°	11′	02″	1,302.25 links	50°	00′	40″	684.40 links
130°	47′	32″	489.73 links	65°	07′	40″	296.17 links
123°	22′	19″	4,192.20 links	54°	31′	40″	673.42 links
123°	21′	30″	726.02 links	64°	00′	30″	429.30 links
117°	59′	22″	256.69 links	73°	21′	00″	417.32 links
106°	52′	24″	379.36 links	87°	09′	50″	831.30 links
99°	53′	06″	194.81 links	102°	35′	40″	482.14 links
100°	34′	17″	415.79 links	110°	18′	00″	323.00 links
111°	00′	07″	311.37 links	114°	05′	00″	1,589.85 links
121°	04′	09″	427.02 links	109°	12′	00″	52.21 links
132°	37′	35″	421.19 links	103°	18′	10″	1,962.94 links
144°	03′	23″	421.25 links	106°	03′	30″	439.30 links
155°	32′	18″	1,242.23 links				

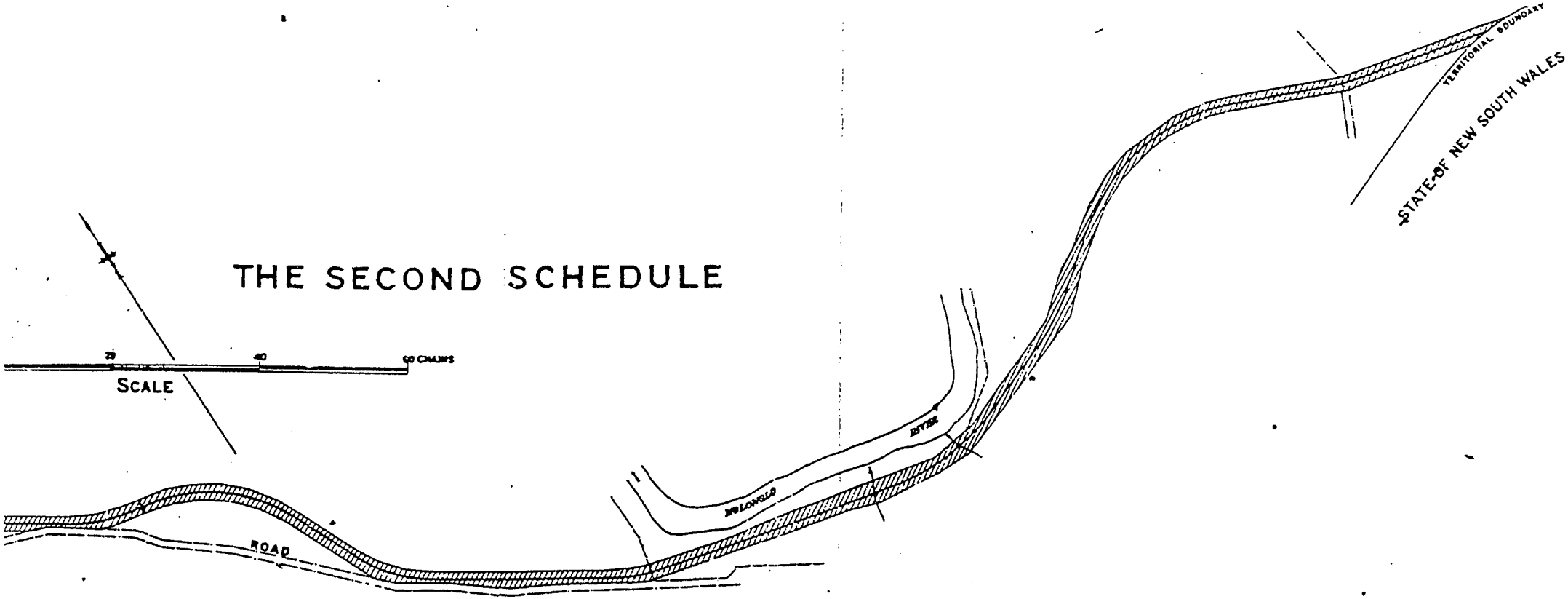
to the point of commencement.


WENTWORTH
DAWES
DIAGRAM "A"
CUNNINGHAM
AV.
ST.
THE CAUSEWAY
SEE DIAGRAM "A"
BURKE CRES.
Land Vested in Commonwealth
Railways Commissioner
SEE DIAGRAM "B"
Vide Act No. 40 of 1928
DIAGRAM "B"
CHAINS 10 0 10 CHAINS
SCALE
LEGEND
Land no longer required for railway purposes
Additional land

THE SECOND SCHEDUI



THE SECOND SCHEDULE



[Extract from Commonwealth of Australia Gazette No. 60, dated 17 July 1969]

COMMONWEALTH OF AUSTRALIA

Seat of Government Railway Act 1928

THE Commonwealth of Australia hereby grants to the Commonwealth Railways Commissioner pursuant to sub-section (2.) of section 3 of the Seat of Government Railway Act 1928, the right to the exclusive use of the land described in the Schedule hereto, such land being land vested in the Commonwealth pursuant to the Seat of Government Acceptance Act 1909-1955 and the Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1968, hereby certifies that the said land described in the Schedule hereto is required for the purposes of the Railway more particularly defined and provided for in the Seat of Government Railway Act 1928.

Dated this twenty-first day of June, One thousand nine hundred and sixty-nine.

J. D. ANTHONY
Minister of State for Primary Industry
for and on behalf of the Minister of State for the Interior

K. A. SMITH
Commonwealth Railways Commissioner

SCHEDULE

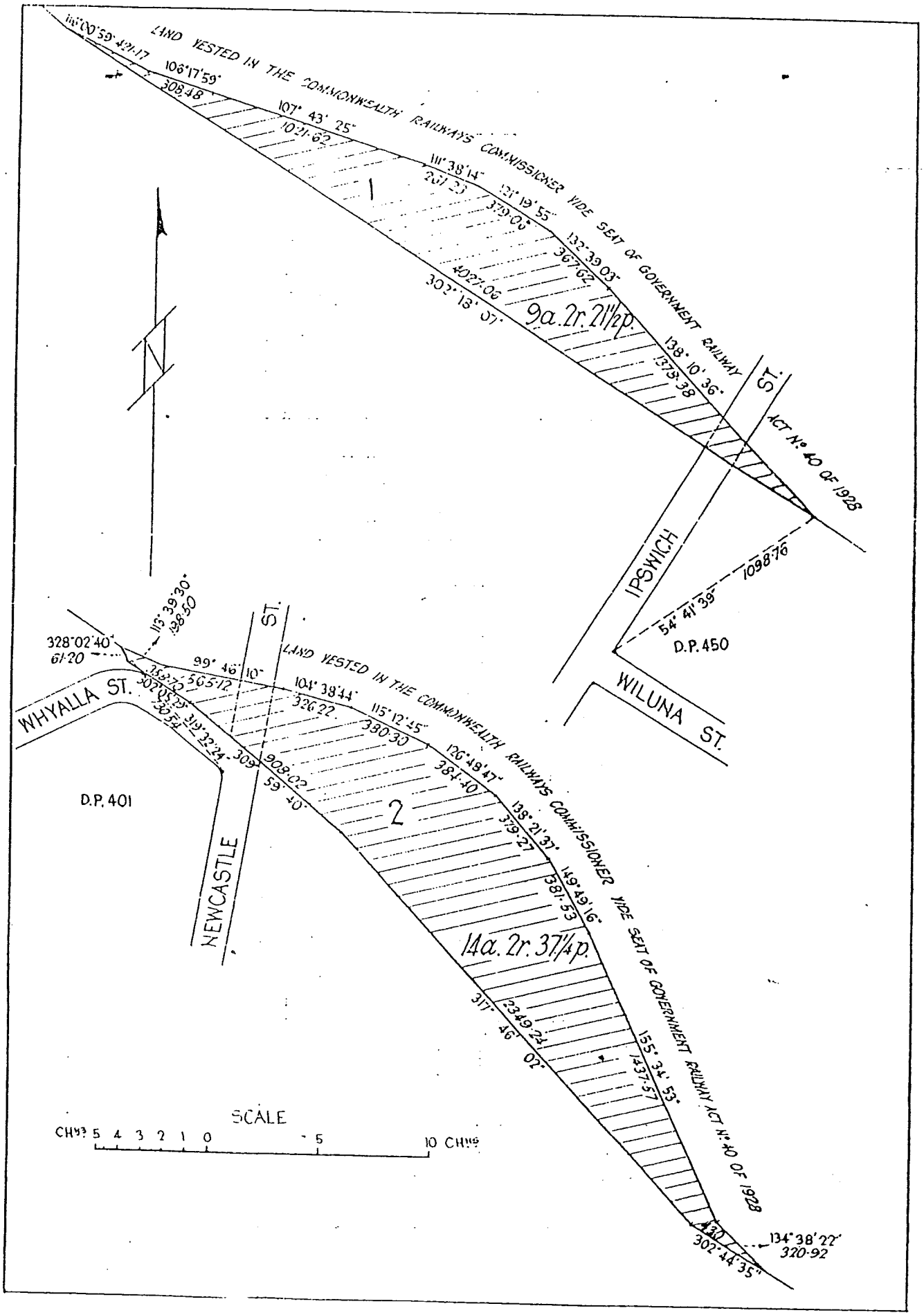
Firstly: All that piece of land containing an area of 38 acres 24 perches more or less being contiguous to northeastern boundaries of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928 and varied vide Commonwealth Gazette No. 64 of 16th October 1958 Canberra City District Australian Capital Territory as shown on plan hereunder: commencing at a point on a southwestern side of Cunningham Street bearing 187 degrees 37 minutes 151.51 links and 97 degrees 37 minutes 1923.95 links from the intersection of a northeastern side of Cunningham Street with the northwestern side of the Causeway and bounded thence on the northwest by a line bearing 7 degrees 37 minutes 1394 links thence on the northeast by lines bearing successively 97 degrees 37 minutes 437 links 124 degrees 22 minutes 5 seconds 1590.6 links and 161 degrees 33 minutes 20 seconds 1359.1 links thence on the southeast by a line bearing 185 degrees 22 minutes 900 links thence on the southwest by northeastern boundaries of the land vested in the Commonwealth Railways Commissioner aforesaid bearing successively 308 degrees 37 minutes 46 seconds 2799 links and 277 degrees 37 minutes 91.2 links to the point of commencement.

Secondly: All that piece of land containing an area of 3 acres 2 roods 31 perches more or less being land contiguous to a southwestern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railways Act No. 40 of 1928 and varied vide Commonwealth Gazette No. 64 of 16 November 1958 Division of Fyshwick Canberra City District Australian Capital Territory as shown on plan hereunder: commencing at a point on a northeastern side of Mildura Street being the westernmost corner of Block 3 Section 30 Division of Fyshwick Canberra City District of plan catalogued in the Office of the Registrar of Titles Canberra Deposited Plan 1737 and bounded thence by part of a northeastern side of Mildura Street bearing 296 degrees 45 minutes 20 seconds 688.39 links and 552.77 links of the arc of a circle of radius 1515.15 links the chord of which lies to the southwest and bears 286 degrees 18 minutes 14 seconds 549.71 links thence by a southeastern boundary of Block 320 Canberra City District by 289.50 links of the arc of a circle of radius 773.48 links the chord of which lies to the southeast and bears 49 degrees 3 minutes 2 seconds 287.82 links to a point on a southwestern boundary of the land vested in the Commonwealth Railways Commissioner aforesaid thence by part of that southwestern boundary of that land bearing 104 degrees 54 seconds 1148.10 links thence by a line and the northwestern boundary of Block 3 aforesaid bearing in all 206 degrees 45 minutes 20 seconds 419.65 links to the point of commencement.

Thirdly: All that piece of land containing an area of 1 rood 15¾ perches more or less being land contiguous to southwestern boundaries of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928 and varied vide Commonwealth Gazette No. 96 of 10th November 1966 Division of Fyshwick Canberra City District Australian Capital Territory as shown on plan hereunder: commencing at a point which bears 319 degrees 32 minutes 24 seconds 730.54 links from the intersection of the northeasterly prolongation of the northwestern side of Newcastle Street with the southeasterly prolongation of the southwestern side of Whyalla Street as shown on plan catalogued in the office of the Registrar of Titles Canberra Deposited Plan 401 and bounded thence on the northeast by a southwestern boundary of land vested in the Commonwealth Railways Commissioner aforesaid bearing 148 degrees 2 minutes 40 seconds 61.2 links thence on the southwest by a line bearing 302 degrees 40 minutes 990.05 links again on the northeast by southwestern boundaries of land vested in the Commonwealth Railways Commissioner aforesaid bearing successively 110 degrees 31 minutes 10 seconds 255.94 links and 124 degrees 58 minutes 40 seconds 685.1 links to the point of commencement.

Fourthly: All that piece of land containing an area of 13 acres 35 perches more or less situate in the Division of Fyshwick Canberra City District Australian Capital Territory as shown on plan hereunder: commencing at the southernmost corner of Block 4 Section 28 Division of Fyshwick on plan catalogued in the office of the Registrar of Titles Canberra Deposited Plan 2042 and bounded thence on the east by a line bearing 179 degrees 23 minutes 20 seconds 280.2 links on part of the northeast by lines bearing successively 124 degrees 31 minutes 30 seconds 1584.6 links 132 degrees 9 minutes 40 seconds 760 links 134 degrees 51 minutes 10 seconds 803.4 links 138 degrees 4 minutes 50 seconds 309.8 links and 123 degrees 34 minutes 720.2 links on the southwest by part of a northeastern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928 bearing 285 degrees 18 minutes 796.2 links lines bearing successively 314 degrees 41 minutes 1884.7 links and 303 degrees 51 minutes 20 seconds 2525.1 links and again part of a northeastern boundary of land vested in Commonwealth Railways Commissioner aforesaid bearing 335 degrees 32 minutes 18 seconds 402.4 links and on the remainder of the northeast by lines bearing successively 123 degrees 51 minutes 20 seconds 264.7 links 117 degrees 53 minutes 36 seconds 414.6 links and 98 degrees 49 minutes 543.3 links to the point of commencement.

384.4 links 138 degrees 21 minutes 37 seconds 379.27 links 149 degrees 49 minutes 16 seconds 381.53 links 155 degrees 34 minutes 53 seconds 1437.57 links and 134 degrees 38 minutes 22 seconds 320.92 links thence by lines bearing successively 302 degrees 44 minutes 35 seconds 430 links 317 degrees 46 minutes 2 seconds 2349.24 links 309 degrees 59 minutes 40 seconds 908.02 links 302 degrees 5 minutes 29 seconds 358.7 links and 328 degrees 2 minutes 40 seconds 61.2 links to the point of commencement.



[Extract from Commonwealth of Australia Gazette No. 96, dated 10th November, 1966.]

THE COMMONWEALTH OF AUSTRALIA.

Seat of Government Railway Act 1928.

THE Commonwealth of Australia hereby grants to the Commonwealth Railways Commissioner pursuant to sub-section 2 of section 3 of the Seat of Government Railway Act 1928, the right to the exclusive use of the land described in the Schedule hereto, such land being land vested in the Commonwealth pursuant to the Seat of Government Acceptance Act 1909-1955, AND the Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1964, hereby certifies that the said land described in the Schedule hereto is required for the purposes of the Railway more particularly defined and provided for in the said Seat of Government Railway Act 1928.

Dated this twenty seventh day of October, One thousand nine hundred and sixty six.

J. D. ANTHONY
Minister of State for the Interior.

K. A. SMITH
Commonwealth Railways Commissioner.

SCHEDULE

Firstly: All that piece of land being land contiguous to the southwestern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Division of Fyshwick, Canberra City District, Australian Capital Territory, as shown hachured and numbered 1 on plan hereunder and containing an area of 9 acres 2 roods 21¼ perches more or less: Commencing at a point which bears 54 degrees 41 minutes 39 seconds 1098.76 links from the intersection of the northwesterly prolongation of the northeastern side of Wiluna Street with the southwesterly prolongation of the southeastern side of Ipswich Street as shown on Deposited Plan 450 catalogued in the office of the Registrar of Titles Canberra and bounded thence by a line bearing 302 degrees 18 minutes 7 seconds 4027.06 links thence by southwestern boundaries of land vested in the Commonwealth Railways Commissioner aforesaid bearing successively 116 degrees 59 seconds 421.17 links 106 degrees 17 minutes 59 seconds 308.48 links 107 degrees 43 minutes 25 seconds 1021.62 links 111 degrees 38 minutes 14 seconds 261.23 links 121 degrees 19 minutes 55 seconds 379.06 links 132 degrees 39 minutes 3 seconds 367.62 links and 138 degrees 10 minutes 36 seconds 1378.38 links to the point of commencement.

Secondly: All that piece of land being land contiguous to the southwestern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, division of Fyshwick, Canberra City District, Australian Capital Territory, as shown hachured and numbered 2 on plan hereunder and containing an area of 14 acres 2 roods 37¼ perches more or less: commencing at a point which bears 319 degrees 32 minutes 24 seconds 730.54 links from the intersection of the northeasterly prolongation of the northwestern side of Newcastle Street with the southeasterly prolongation of the southwestern side of Whyalla Street as shown on Deposited Plan 401 catalogued in the office of the Registrar of Titles, Canberra and bounded thence by southwestern boundaries of land vested in the Commonwealth Railways Commissioner aforesaid bearing successively 113 degrees 39 minutes 30 seconds 198.5 links 99 degrees 46 minutes 10 seconds 565.12 links 104 degrees 38 minutes 44 seconds 326.22 links 115 degrees 12 minutes 45 seconds 380.3 links 126 degrees 48 minutes 47 seconds

[Extract from Commonwealth of Australia Gazette No. 86, dated 4th November, 1965.]

THE COMMONWEALTH OF AUSTRALIA.

Seat of Government Railway Act 1928.

THE Commonwealth of Australia hereby grants to the Commonwealth Railways Commissioner, pursuant to sub-section 2 of Section 3 of the Seat of Government Railway Act 1928, the right to the exclusive use of the land described in the Schedule hereto, such land being land vested in the Commonwealth pursuant to the Seat of Government Acceptance Act 1909-1955, AND the Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1964, hereby certifies that the said land described in the Schedule hereto is required for the purposes of the Railway more particularly defined and provided for in the said Seat of Government Railway Act 1928.

Dated this 20th day of October, One thousand nine hundred and sixty-five.

J. D. ANTHONY
Minister of State for the Interior.

K. A. SMITH
Commonwealth Railways Commissioner.

SCHEDULE.

All that piece of land containing an area of 7 acres 3 roods 15¼ perches more or less being part of Division of Fyshwick, Canberra City District, Australian Capital Territory: Commencing at a point on a southwestern side of Cunningham Street bearing 187 degrees 37 minutes 151.51 links from the intersection of the southeastern side of The Causeway with a northeastern side of Cunningham Street and bounded thence by part of the southwestern side of Cunningham Street aforesaid being 97 degrees 37 minutes 1,408.64 links thence by lines bearing 187 degrees 43 minutes 629.24 links, 283 degrees 27 minutes 1,414.94 links and 7 degrees 37 minutes 485.50 links to the point of commencement.

By Authority: A. J. Arthur, C'wealth Govt. Printer, Canberra.
14040'65.

[Extract from Commonwealth of Australia Gazette No. 81, dated 1st October, 1964.]

Seat of Government Railway Act 1928.

SECTION 3 (3).

I, KEITH ARCHIBALD SMITH, Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1960, hereby certify, pursuant to sub-section three of section three of the Seat of Government Railway Act 1928, that the land described in the schedule annexed hereto, being land which has been occupied and used by the Commonwealth Railways Commissioner in pursuance of sub-section one of section three of the last-mentioned Act, is no longer required for railway purposes.

Dated this tenth day of September, One thousand nine hundred and sixty-four.

K. A. SMITH, Commonwealth Railways Commissioner.

SCHEDULE.

All that piece of land containing an area of 14 perches more or less being part of Section 11 Division of Kingston Canberra City District Australian Capital Territory and being part of land vested in the Commonwealth. Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928 and varied vide Commonwealth Gazette No. 64 of 16th October 1958 and Commonwealth Gazette No. 90 of 9th November 1961: commencing at the intersection of the southeastern side of Cunningham Street with the northeastern side of Wentworth Avenue and bounded thence by part of the aforesaid southeastern side of Cunningham Street bearing 64 degrees 41 minutes 26 feet thence by a line bearing 187 degrees 42 minutes 47.71 feet to the northeastern side of Wentworth Avenue thence by part of that side of that Avenue bearing 334 degrees 41 minutes 40 feet to the point of commencement.

By Authority: A. J. ARTHUR, C'wealth Govt. Printer, Canberra.
12689/64.

TO PERMIT ENLARGEMENT OF THE INTERSECTION OF CUNNINGHAM ST & WENTWORTH AVE.

12

[Extract from Commonwealth of Australia Gazette, No. 90, dated 9th November, 1961.]

Seat of Government Railway Act 1928, Section 3 (3).

I, KEITH ARCHIBALD SMITH, Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1960, hereby certify, pursuant to sub-section three of section three of the Seat of Government Railway Act 1928, that the land described in the schedule annexed hereto, being land which has been occupied and used by the Commonwealth Railways Commissioner in pursuance of sub-section one of section three of the last-mentioned Act, is no longer required for railway purposes.

Dated this twenty-seventh day of October, 1961.

K. A. SMITH
Commonwealth Railways Commissioner.

SCHEDULE.

All that piece of land being part of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928 and varied vide Commonwealth Gazette No. 64 of 16th October, 1958, Canberra City District, Australian Capital Territory: Commencing at a point on a southwestern side of Cunningham-street bearing 187 degrees 37 minutes 151.51 links from the intersection of the southeastern side of The Causeway with a northeastern side of Cunningham-street and bounded thence by part of the southwestern side of Cunningham-street aforesaid being 97 degrees 37 minutes 1,408.64 links thence by lines bearing 187 degrees 43 minutes 629.24 links, 283 degrees 27 minutes 1,414.94 links and 7 degrees 37 minutes 485.50 links to the point of commencement.

By Authority: A. J. ARTHUR, C'wealth Govt. Printer, Canberra.
10506/61.

THIS LAND WAS REGRANTED TO THE RAILWAY IN 1965
(SEE EXTRACT BELOW)

14

AUSTRALIAN CAPITAL TERRITORY.

The City Area Leases Ordinance 1936-1957.

DETERMINATION OF LEASE.

IN pursuance of the powers conferred by section 22 (6) of the City Area Leases Ordinance 1936-1957 and in accordance with the provisions of clause 3 (a) (ii) and 3 (a) (iii) of the lease of Block 14 Section 89 Division of Griffith in the Australian Capital Territory granted to William Nelson Allen, Volume 51 Folio 5053 I, John Noble Core Rogers, delegate of the Minister of State for the Interior, hereby determine the lease as from the date hereof for non-compliance with a covenant thereof.

Dated this thirtieth day of September, 1958.

J. N. ROGERS
Delegate of the Minister of State for the Interior.

AUSTRALIAN CAPITAL TERRITORY.

The City Area Leases Ordinance 1936-1957.

DETERMINATION OF LEASE.

IN pursuance of the powers conferred by section 22 (5) (b) of the City Area Leases Ordinance 1936-1957 and in accordance with the provisions of clauses 3 (a) (ii) and 3 (a) (iii) of the lease of Block 18 Section 2 Division of O'Connor in the Australian Capital Territory granted to Edmund Pfeil Volume 38 Folio 3778, I, John Noble Core Rogers, delegate of the Minister of State for the Interior, hereby determine the lease as from the date hereof for non-compliance with a covenant thereof.

Dated this thirtieth day of September, 1958.

J. N. ROGERS
Delegate of the Minister of State for the Interior.

The Commonwealth of Australia.

SEAT OF GOVERNMENT RAILWAY ACT 1928, SECTION 3 (3.).

I, Patrick Joseph Hannaberry, Commonwealth Railways Commissioner appointed under the provisions of the Commonwealth Railways Act 1917-1955, hereby certify, pursuant to sub-section three of section three of the Seat of Government Railway Act 1928, that the land described and numbered firstly secondly and thirdly in the Schedule annexed hereto, being land which has been occupied and used by the Commonwealth Railways Commissioner in pursuance of sub-section one of section three of the last-mentioned Act, is no longer required for railway purposes.

Dated this thirtieth day of June, 1958.

P. J. HANNABERRY
Commonwealth Railways Commissioner.

The Commonwealth of Australia.

SEAT OF GOVERNMENT RAILWAY ACT 1928, SECTION 3 (2.).

THE Commonwealth of Australia hereby grants to the Commonwealth Railways Commissioner, pursuant to sub-section two of section three of the Seat of Government Railway Act 1928, the right to the exclusive use of the land described and numbered fourthly and fifthly in the Schedule annexed hereto, such land being land vested in the Commonwealth pursuant to the Seat of Government Acceptance Act 1909-1955, and the Commonwealth Railways Commissioner, appointed under the provisions of the Commonwealth Railways Act 1917-1955, hereby certifies that the said land described in the Schedule annexed hereto is required for the purposes of the Railway more particularly defined and provided for in the said Seat of Government Railway Act 1928.

Dated this seventeenth day of September, 1958.

ALLEN FAIRHALL
Minister of State for the Interior.

P. J. HANNABERRY
Commonwealth Railways Commissioner.

Schedule.

Firstly: All that piece of land being part of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Division of Kingston, Canberra City District, Australian Capital Territory, as shown cross hachured and numbered 1 on plan hereunder: Commencing at the intersection of a northeastern side of Wentworth Avenue with a southeastern side of Dawes Street and bounded thence by part of that side of Dawes Street bearing 64 degrees 41 minutes 42.42 links thence by lines bearing 154 degrees 41 minutes 757.57 links and 148 degrees 59 minutes 152.27 links thence by part of a southeastern side of Cunningham Street bearing 244 degrees 41 minutes 57.54 links thence by part of the northeastern side of Wentworth Avenue aforesaid bearing 334 degrees 41 minutes 909.09 links to the point of commencement.

Secondly: All that piece of land being part of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Division of Kingston, Canberra City District, Australian Capital Territory, as shown cross hachured and numbered 2 on plan hereunder: Commencing at a point bearing 7 degrees 37 minutes 1201.86 links from the intersection of a northeastern side of Cunningham Street with the northwestern side of The Causeway and bounded thence by lines bearing 277 degrees 37 minutes 117.68 links 221 degrees 31 minutes 273.82 links 221 degrees 14 minutes 151.51 links 219 degrees 42 minutes 35.76 links 216 degrees 29 minutes 86.51 links 211 degrees 25 minutes 116.09 links 204 degrees 10 minutes 30 seconds 151.51 links 195 degrees 43 minutes 30 seconds 151.51 links 189 degrees 59 minutes 75.75 links and 177 degrees 41 minutes 20 seconds 423.03 links thence by part of the southwestern side of Cunningham Street aforesaid bearing 277 degrees 37 minutes 69.05 links thence by lines bearing 356 degrees 14 minutes 154.54 links 357 degrees 43 minutes 164.08 links 357 degrees 51 minutes 121.21 links 353 degrees 54 minutes 30 seconds 136.36 links 347 degrees 8 minutes 136.36 links 340 degrees 13 minutes 136.36 links 334 degrees 33 minutes 113.63 links 323 degrees 34 minutes 20 seconds 241.81 links and 64 degrees 41 minutes 1165.99 links thence by the northwestern side of The Causeway aforesaid bearing 187 degrees 37 minutes 363.68 links to the point of commencement.

Thirdly: All that piece of land being part of the land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Division of Kingston, Canberra City District, Australian Capital Territory, as shown cross hachured and numbered 3 on plan hereunder: Commencing at a point on a northeastern side of Wentworth Avenue bearing 64 degrees 41 minutes 303.03 links from the intersection of a southeastern side of Burke Crescent with the southwestern side of Wentworth Avenue bounded thence by part of the northeastern side of Wentworth Avenue aforesaid bearing 334 degrees 41 minutes 149.93 links thence by lines bearing 104 degrees 54 seconds 236.55 links and 244 degrees 41 minutes 182.97 links to the point of commencement.

Fourthly: All that piece of land being land contiguous to the southwestern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Canberra City District, Australian Capital Territory, as shown hachured and numbered 4 on plan hereunder: Commencing at the easternmost corner of the land thirdly herein described and bounded thence by southeastern and southwestern boundaries of land vested in the Commonwealth Railyways Commissioner aforesaid bearing 64 degrees 41 minutes 108 links 103 degrees 59 minutes 20 seconds 405.8 links 137.64 links by the arc of a circle of radius 62.12 links the centre of which lies to the northwest and the chord of which bears 40 degrees 30 minutes 50 seconds 111.17 links 103 degrees 51 minutes 50 seconds 897.19 links 104 degrees 29 seconds 1494.58 links 111 degrees 25 minutes 17 seconds 384.24 links and 122 degrees 53 minutes 18 seconds 374.5 links thence by a line bearing 284 degrees 54 seconds 3665.37 links to the point of commencement.

Fifthly: All that piece of land being contiguous to the northeastern boundary of land vested in the Commonwealth Railways Commissioner vide Seat of Government Railway Act No. 40 of 1928, Canberra City District, Australian Capital Territory, as shown hachured and numbered 5 on plan hereunder: Commencing at a point on a southwestern side of Cunningham Street bearing 187 degrees 37 minutes 151.51 links from the intersection of a northeastern side of Cunningham Street with the northwestern side of The Causeway and bounded thence by part of the southwestern side of Cunningham Street aforesaid bearing 97 degrees 37 minutes 2015.15 links thence by a line bearing 128 degrees 37 minutes 46 seconds 5155.81 links thence by northeastern boundaries and a southeastern boundary of the land vested in the Commonwealth Railways Commissioner aforesaid bearing 297 degrees 17 minutes 15 seconds 310.5 links 287 degrees 42 minutes 34 seconds 1211.33 links 288 degrees 5 minutes 9 seconds 293.85 links 297 degrees 23 minutes 25 seconds 478.51 links 311 degrees 42 minutes 11 seconds 467.48 links 318 degrees 39 minutes 52 seconds 819.92 links 304 degrees 44 minutes 5 seconds 367.77 links 298 degrees 8 minutes 48 seconds 364.55 links 284 degrees 3 minutes 22 seconds 268.01 links 325 degrees 36 minutes 30 seconds 462.53 links 283 degrees 27 minutes 1969.82 links and 7 degrees 37 minutes 454.54 links to the point of commencement.

Appendix D

Photographic Records of Inspection

Photo 1: Fuel Depots North of Main Railway Line

Photo 2: Unloading Point Showing Drain

Photo 3: Oil Drum Storage in Depot

Photo 4: Shell Depot South of Main Line

Photo 5: Groundwater well Opposite Mobil Depot

Photo 6: Old Fuel Storage Tank in Canberra Yard

Photo 7: Staining Around Fuel Pump Shed

Photo 8: Ash and Cinders in Railyards

Photo 9: Waste Oil Drums in William Edmunds Area

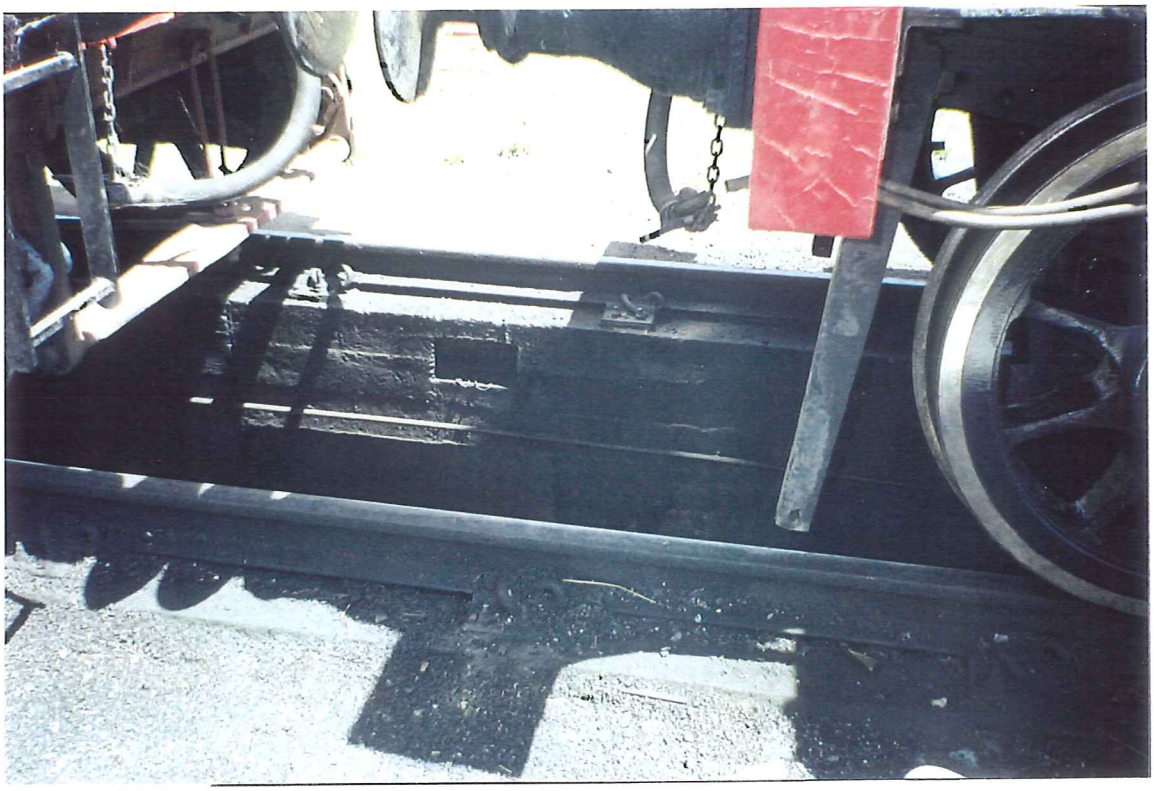


Photo 10: ARHS Service Pit

Photo 11: Stormwater Drain in ARHS Area

Photo 12: ARHS Oil Drums

Photo 13: ARHS Oil Drum

Photo 14: ARHS Kerosene Drum

Photo 15: ARHS Flammables Storage

Photo 16: Oil Spillage in Stormwater Drain

Photo 17: Toilet Shed with Asbestos Cement Debris Inside

Photo 18: Coal Stockpile on ARHS Site

Photo 19: Lead Acid Battery Storage on ARHS Site

Photo 20: Lead Acid Battery Storage on ARHS Site

Photo 21: Oil Drum Storage on William Edmunds Site

Photo 22: Lead Acid Battery on William Edmunds Site

Photo 23: Hydrocarbon Staining Next to Platform

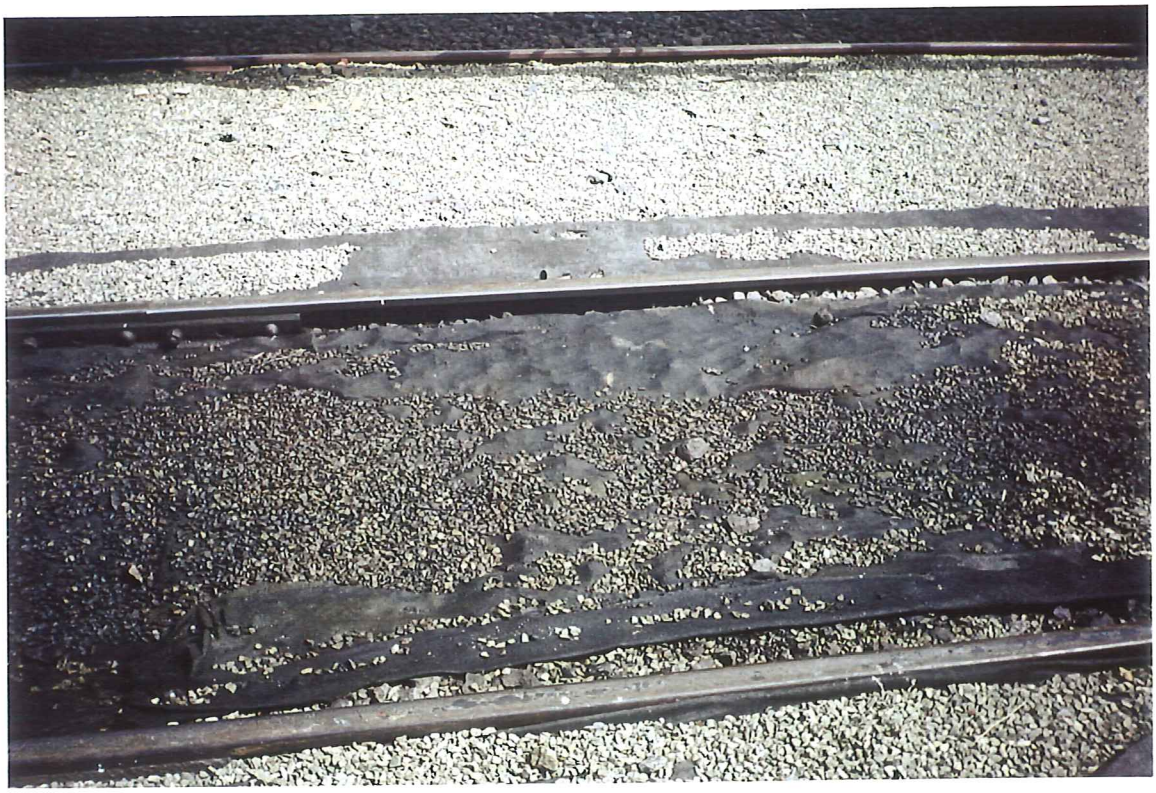


Photo 24: Membrane Layer Underlying Ballast

Photo 25: Rail Corridor East of Fyshwick

Photo 26: View North of Rail Corridor

Appendix E

Aerial Photographs

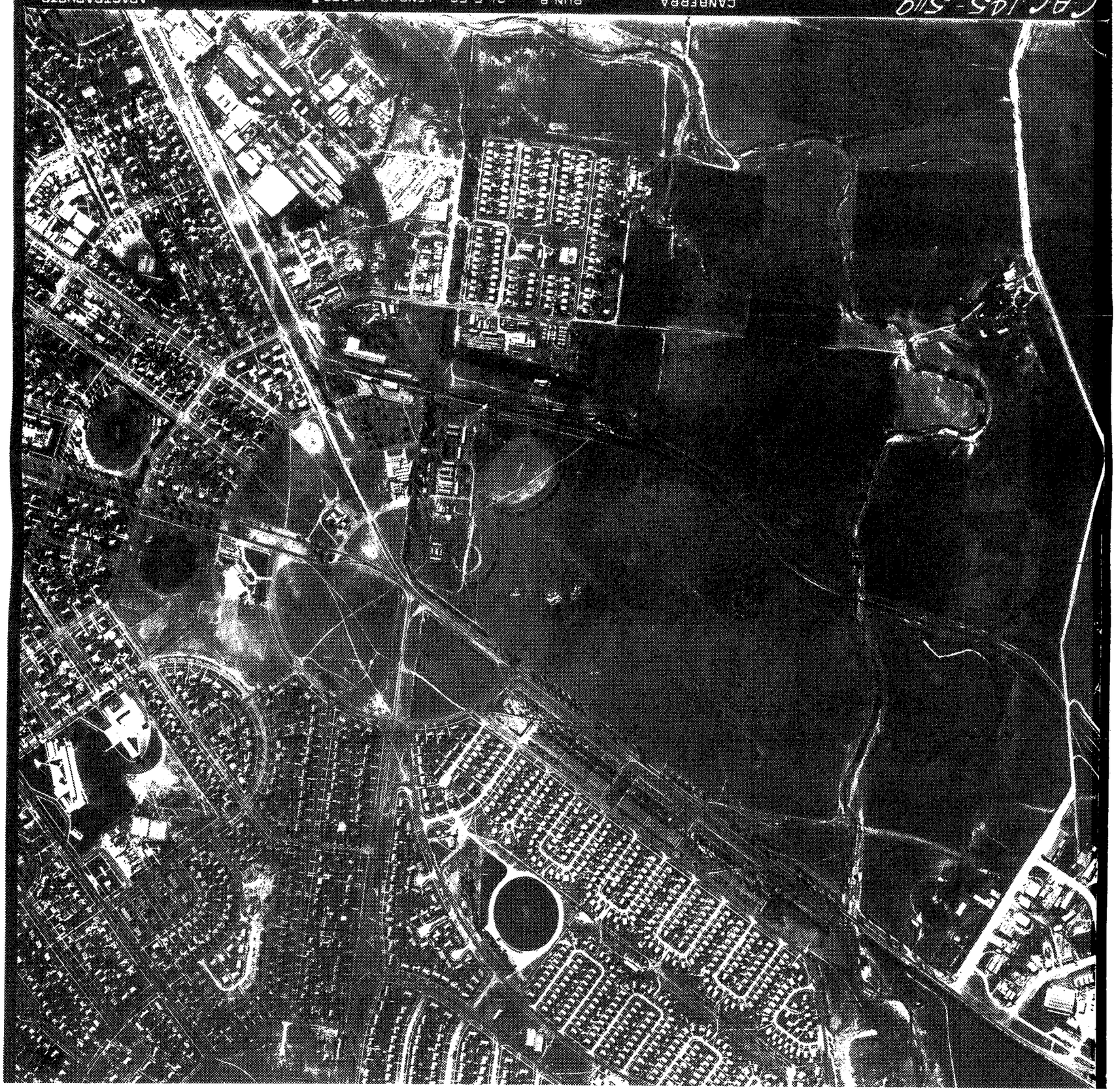

5025 SVY 1100// CANBERRA RUN 6 (011-036) N
29TH NOV
305
12000'

CAC 145-5119

CANBERRA
S107-S128

RUN 8 21 S 58 LENS 10 10.330

ADASTRAPHOTO



ACT DEVELOPMENT RECORD 1978
SOC 109
U 9 3

7,100
A.S.L.

068-123
RUN 78c 16

U.T. 11-3-78 ZD

Kevron Aerial
Surveys. Perth. W.A.


OC493
6405
1988 - A.C.T. PRIMARY
DEVELOPMENT RECORD
SOC 793
10.2.88UT.
RUN 16
6683-6733
7,300'ASL
1:10,000
COMMONWEALTH
OF AUSTRALIA

ACT DEVELOPMENT RECORD 1997

RUN 16
168-200

1:10000 approx
2200m ASL

E.S.T. 26-3-97

ACT MAPPING OFFICE

Appendix F

Summary of Analyses

AN Canberra Railway Yards
Summary of Analytical Results

Borehole Number Sample Depth	Limit Of Reporting (mg/kg)	FIL	FIL Ref.	ARHS-1 0.0-0.15	ARHS-1* 0.0-0.15	AP-1 0.15-0.3	CY-1 0.0-0.15
Metals:							
Arsenic	5	500	Langley F	<5	<5	11	12
Cadmium	1	100	Langley F	<1	<1	<1	<1
Chromium (total)	2	60%	Langley F	21	21	41	22
Copper	2	5000	Langley F	190	220	48	25
Lead	5	1500	Langley F	140	160	89	46
Mercury	0.5	75	Langley F	<0.5	<0.5	<0.5	<0.5
Zinc	2	35000	Langley F	120	140	95	96
Total Petroleum Hydrocarbons (TPH):							
C_6-C_9	25	65	NSW EPA	<25	<25	na	na
C_{10}-C_{14}	25	5000	Dutch Intervention	490	410	na	na
C_{15}-C_{28}	25	5000	Dutch Intervention	9100	9300	na	na
C_{29}-C_{36}	25	5000	Dutch Intervention	16000	16000	na	na
Total TPH	100	5000	Dutch Intervention	26000	26000	na	na
BTEX:							
Benzene	0.5	1	Dutch Intervention	<0.5	<0.5	na	na
Toluene	0.5	130	Dutch Intervention	<0.5	<0.5	na	na
Ethyl Benzene	0.5	50	Dutch Intervention	<0.5	<0.5	na	na
Xylene	1	25	Dutch Intervention	<1.0	<1.0	na	na
Total BTEX	2.5			<2.5	<2.5	na	na
Polycyclic Aromatic Hydrocarbons (PAH):							
Naphthalene	0.1			0.8	na	0.4	0.2
Acenaphthylene	0.1			<0.1	na	<0.1	<0.1
Acenaphthene	0.1			<0.1	na	<0.1	<0.1
Flourene	0.1			<0.1	na	<0.1	<0.1
Phenanthrene	0.1			1.2	na	0.6	2.8
Anthracene	0.1			<0.1	na	<0.1	0.2
Flouranthrene	0.1			0.3	na	0.1	1.6
Pyrene	0.1			1.8	na	0.2	1.4
Benzo(a)anthracene	0.1			<0.1	na	<0.1	0.8
Chrysene	0.1			<0.1	na	0.1	0.8
Benzo(b)fluoranthene	0.1			<0.1	na	<0.1	<0.1
Benzo(k)fluoranthene	0.1			<0.1	na	<0.1	<0.1
Benzo(a)pyrene	0.1	5	Langley F	<0.1	na	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1			<0.1	na	<0.1	<0.1
Dibenz(a,h)anthracene	0.1			<0.1	na	<0.1	<0.1
Benzo(g,h,i)perylene	0.1			<0.1	na	<0.1	<0.1
Total PAH	1.6	100	Langley F	4.1	na	<1.6	7.8

Appendix G

Laboratory Reports

AGAL
An ISO 9001 Quality Systems Certified Organisation

REPORT OF ANALYSIS

Client: PPK Environment & Infrastructure
GPO Box 398
ADELAIDE SA 5001

Attention: Craig Smith

Sample Description: Soil - Job No - 27K009A - Canberra Railyards

Lab Registration Nos: V98/005940 to V97/005942

Date Received: 24 February 1998

Samples submitted to AGAL have been analysed as received. The information below is provided as part of our commitment to the quality of the analytical results. Please contact the undersigned for any further details relating to this Report.

Methods of Analysis:

Analyte	Method of Analysis	Date Extracted	Date Analysed
TPH (C_6-C_9)	AGAL(Vic) Method VL234 (P&T GC/MS)	-	27/2/98
TPH (C_{10}-C_{36}) - Soil	AGAL(Vic) Method VL228 (GC/FID)	26/2/98	27/2/98
PAH's - Soil	AGAL(Vic) Method VL221 (GC/MS)	-	27/2/98
Metals - Soil	AGAL(Vic) Method VL239 (ICP)	-	2/3/98

Quality Assurance:

The following QA procedures were included with the analyses -

- Analysis of reagent blanks
- Analysis of recoveries
- Analysis of samples in duplicate

Results obtained for recoveries of selected analytes from soil were as follows:

Analyte	Soil
Toluene-d8	103%
TPH	89%
Benzo(a)pyrene	95%
Lead	97%
Zinc	91%

Results of Analysis:

Analytical results on samples as received appear on the following page(s). All results are based on using one technique for each test. Soil results are reported on a dry weight basis.

This report shall not be reproduced except in full.

Barrie Magor
B.Sc.(Hons), Grad.Dip.App.Sci., MRACI
(Organics Analyses)

Roger Cromie
Dip.App.Sci., Grad.Dip.App.Sci., MRACI
(Metals Analyses)

Date: 4-3-98

File :k:\enchem\word\reports\1998\005940.doc

Australian Government Analytical Laboratories
51 - 65 Clarke Street
South Melbourne VIC 3205

Tel: (03) 9685 1777
Fax: (03) 9685 1788

REPORT OF ANALYSIS

Client Reference No: / Lab Registration No:	Units	LOR	ARHS-1 0-150mm V98/5940	
BTEX:				
Benzene	mg/kg	0.5	<0.5	<0.5
Toluene	mg/kg	0.5	<0.5	<0.5
Ethylbenzene	mg/kg	0.5	<0.5	<0.5
Xylenes	mg/kg	1.0	<1.0	<1.0
Total BTEX	mg/kg	**2.5**	**<2.5**	**<2.5**
Petroleum Hydrocarbons:				
C_6 - C_9	mg/kg	25	<25	<25
C_{10} - C_{14}	mg/kg	50	490	410
C_{15} - C_{28}	mg/kg	100	9100	9300
C_{29} - C_{36}	mg/kg	100	16000	16000
Total Hydrocarbons	mg/kg	**275**	**26000**	**26000**

Client Reference No: / Lab Registration No:	Units	LOR	ARHS-1 0-150mm V98/5940	AP-1 0-150mm V98/5941	CY-1 0-150mm V98/5942
PAH's:					
Naphthalene	mg/kg	0.1	0.8	0.4	0.2
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	1.2	0.6	2.8
Anthracene	mg/kg	0.1	<0.1	<0.1	0.2
Fluoranthene	mg/kg	0.1	0.3	0.1	1.6
Pyrene	mg/kg	0.1	1.8	0.2	1.4
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.8
Chrysene	mg/kg	0.1	<0.1	0.1	0.8
Benzo(b)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Dibenz(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1
Total PAH's (as above)	mg/kg	**1.6**	**4.1**	**<1.6**	**7.8**

REPORT OF ANALYSIS

SAMPLE	CLIENT REF.	DESCRIPTION	% Moist	As	Cd	Cr	Cu	Hg	Pb	Zn
Level of reporting				5.0	1.0	2.0	2.0	0.50	5.0	2.0
V98/005940	ARHS-1	SOIL-CANBERRA RAILYRDS 27K009A	28.0	<5.0	<1.0	21	190	<0.50	140	120
V98/005940 dup	ARHS-1	SOIL-CANBERRA RAILYRDS 27K009A	28.0	<5.0	<1.0	21	220	<0.50	160	140
V98/005941	AP-1	SOIL-CANBERRA RAILYRDS 27K009A	1.2	11	<1.0	41	48	<0.50	89	95
V98/005942	CY-1	SOIL-CANBERRA RAILYRDS 27K009A	7.7	12	<1.0	22	25	<0.50	46	96
Results in mg/kg (dry weight basis)		Method: VL239								
QA RESULTS										
Average blank				<5.0	<1.0	<2.0	<2.0	<0.50	<5.0	<2.0
SRM agal10 % of expected				107	101	114	98	100	97	91

Australian Government Analytical Laboratories
51 - 65 Clarke Street
South Melbourne VIC 3205

Tel: (03) 9685 1777
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Lab Name	AGAL
Address	51-65 Clarke Street, South Melbourne
Phone Number	(03) 96851777

PPK Environment&Infrastructure

Job Location	Canberra Railyards

PPK Job Number
27K009A

Results Due	28/02/98 → This is a Saturday 2/3/98 (monday)
Turnaround Time	5 days
Fax Results To	Craig Smith
Fax Number	(08) 8405 4301
Phone Number	(08) 8405 4300
Project Manager	Craig Smith
Invoice To	Craig Smith

Relinquished By	Craig Smith
Date	29/08/97
Company	PPK, Adelaide
Signature	C Smith

Received by	
Date	24/2/98
Company	AGAL VIC
Signature	

Samples on Ice: YES ✓

Metals: As, Cd, Cr, Cu, Hg, Pb, Zn

Date Sampled	Time	Sample ID	Location / Depth	Container Size	Medium (s/w)	Preservative	Analytes: METALS	PAHS	TPH											Sampler Initials	Comments
18/02/98	0:00	ARHS-1	0-150mm	250mL	S	<4°C	Y	Y	Y				V98/5940							CS	Interceptor Trap Sediments
18/02/98	0:00	AP-1	0-150mm	250mL	S	<4°C	Y	Y	N				5941						-	CS	Ash Pit Area - Ash and Cinders
18/02/98	0:00	CY-1	0-150mm	250mL	S	<4°C	Y	Y	N				5942							CS	Western Yard Area - Ash & Cinders

DUE
2/3/98
12:00

Order to follow by fax
CS

Please fax back a signed copy when samples are recieved at the laboratory.

PPK
Environment&Infrastructure

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SA 5001 Australia
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Email ppkadel@ozemail.com.au
ACN 078 004 798
A NATA Certified Quality Company

Sample Analysis Report

Location:	Canberra Railway Yards	
Job/Report No:	27K009A	*Key:* Chrysotile: White Asbestos Amosite: Brown/Grey Asbestos Crocidolite: Blue Asbestos
Date:	26/2/98	
Test Method:	Qualitative identification of asbestos types in bulk samples by Stereo Microscopy	
RESULTS		
Laboratory ID No: Sample: Description: Location: Report:	98/0140 A1 Grey fibrous cement fragment Robbo's Pet Barn (Old goods shed) - cladding Chrysotile and Amosite asbestos detected by Stereo Microscopy	
Laboratory ID No: Sample: Description: Location: Report:	98/0141 A2 Grey fibrous cement fragment Old toilet block behind railway garage - cladding Chrysotile and Amosite asbestos detected by Stereo Microscopy	
Laboratory ID No: Sample: Description: Location: Report:	98/0142 A3 Grey fibrous cement fragment William Edmund's yard - debris No asbestos detected by Stereo Microscopy	

Testing Officer: Anthony Amorosi

Signature: .....

Asbestos Content Summary

Date: 26/2/98 Job No: 27K009A Client: Australian National Location: Canberra Railway Yards

Lab ID No.	Sample No	Condition (if applic.)		Chryostile	Amosite	Crocidolite	WP Code
9971 0170	A1		**Description:** Fibrous cement fragment (cladding) **Location:** Robbo's Pet Barn (old Goods Shed)	✓ CLADDING	✓	–	
0171	A2		**Description:** Grey fibrous cement fragment **Location:** Old toilet block behind railway garage	✓	✓	–	
0172	A3		**Description:** Grey fibrous cement fragment **Location:** Debris in William Edmunds Yard	–	–	–	
			Description: **Location:**				
			Description: **Location:**				
			Description: **Location:**				
			Description: **Location:**				

A dash (-) implies not detected.

Collected by: .....

Testing Officer: .....

Is condition to be reported?

Yes	LAB03.STD Disp Stain	LAB08.STD Stereo Mic	No	LAB05 STD Disp Stain	LAB09 STD Stereo Mic

Appendix H

Environment ACT Correspondence

ACT GOVERNMENT

ENVIRONMENT ACT

File Ref:New File

Mr Craig Smith
RUST PPK
GPO Box 398
ADELAIDE SA 5001

SUBJECT: Canberra Railway Station Yards and ACT Rail Corridor.

Dear Mr Smith

Thank you for your letter of 27 February 1998 enquiring about the Canberra Railway Station Yards and Rail Corridor within the ACT.

The Department of Urban Services, Contaminated Sites Unit (CSU), is conducting surveys to identify sheep dip sites (and any other cause of contamination) in residential and other areas of the ACT.

The subject land has been associated with light industrial activities in the ACT suburbs of Oaks Estate, Symonston, Fyshwick and Kingston, which may have directly or indirectly contributed to any potential contamination of the subject land.

Railway yards are listed in the *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC, 1992)* as a specific land use which has been associated with site contamination, at present the CSU has no site specific information suggesting contamination of the subject land.

However, this does not absolutely rule out the possibility of contamination and should not be interpreted as a warranty that there is no contamination. I appreciate that this does not absolutely rule out the existence of contamination of the soils. If you or your clients wish to be completely sure you, or they, should conduct a preliminary investigation of the abovementioned land.

Yours sincerely

Daniel Walters
Project Officer
Contaminated Sites Unit
5 March 1998

ACT DEPARTMENT OF URBAN SERVICES

Environment ACT • Contaminated Sites
Level 2 South Wing, Macarthur House, 12 Wattle Street, Lyneham ACT 2602
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E-mail: manager_csu@dpa.act.gov.au • Homepage http://www.act.gov.au/environ

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