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## MINUTES OF MEETING HELD FRIDAY 18 JULY, 2014, SURREY HILLS NEIGHBOURHOOD CENTRE, 1 BEDFORD AVENUE, SURREY HILLS

- Present: – Wilfrid Brook, Brett Cleak, Graeme Cleak, Glenn Cumming, John Dennis, Graeme Dunn, Vance Findlay, Michael Formaini, Ray Gomerski, Chris Gordon, Judy Gordon, Bill Johnston, David Jones, Keith Lambert, David Langley, Andrew McLean, Michael Menzies, Tom Murray, Alex Ratcliffe, Colin Rutledge, Brian Sherry, Rod Smith, David Stosser, Andrew Waugh and Andrew Wheatland.
- Apologies: – Jon Churchward, Steven Dunne, Steve Malpass, Greg O'Flynn, Laurie Savage and Peter Silva.
- The President, Mr. David Langley, took the chair & opened the meeting at 20:10 hours, following the adjournment of the Annual General Meeting.
- Minutes of the May 2014 Meeting: – Accepted as read. Alex Ratcliffe / Vance Findlay. Carried.
- Business Arising: – The new timetables that come into use on Sunday 27 July 2014 included schedules for the RRL Lines between Spencer Street – Sunshine.
- Correspondence: – The invoice for the public liability insurance was received and payment has been sent.
- The invoice for the rent of the rooms in Seymour for 2014 – 2015 was received from Victrack and payment was sent. Brian Sherry / Vance Findlay. Carried.
- Reports: – Glenn Cumming provided a plan for a signal box tour on Saturday 20 September 2014 to visit Pakenham, Berwick, Dandenong and Oakleigh.
- General Business: – Keith Lambert provided details about various works in the Metropolitan District. A summary of the discussion follows: –
- The re-signalling of the Flemington Racecourse Line and Kensington - Essendon had been completed.
  - There are now no semaphore arms in use on the metropolitan rail network.
  - Richmond – Camberwell is to be re-signalled. This project will feature the use of axle counters in place of track circuits. Camberwell will take control of the crossovers at East Richmond and control of Burnley. This work is planned for completion by June 2015.
- Keith Lambert noted that an electronic train order system known as Phoenix is to be introduced between Benalla – Oaklands in August 2014. Computer based train order systems were discussed.
- Recent ATSB reports for incidents on the Trans Australia Railway were discussed.
- The recent derailment of the XPT at Flyover Junction near South Dynon was discussed. It was noted that a special design of dual gauge turnout had been provided at Flyover Junction.
- Colin Rutledge gave a detailed description of dual gauge turnout types. It was noted that the turnouts at

*(Front cover) The significant news in this issue is the bringing into use of the new approaches to the country side of Southern Cross station. These lead from a junction with the RRL lines at Spion Kop Junction, and run behind the old Arrival Yard to the North Melbourne Flyover, and then down to the existing Country Lines at Franklin St Junction. This photograph shows a Down Velocity set heading over the North Melbourne Flyover towards the RRL lines. It is approaching Home 987 which is displaying clear normal speed with a 'V' light to confirm that a broad gauge route is set. The notice board on the post reads "Diverge 25 km/h" which modifies meaning of the medium speed aspect from the default 40 km/h diverging speed. For 50 years, Victoria has been using curve boards to allow the use of a normal speed aspect over a diverging route, now an equivalent is modifying the medium speed aspect. The 25 km/h speed limit is due to speed restriction for the diverging movement over the dual gauge turnout. Photo Andrew Waugh*

Flyover Junction were designed for wheels that are 140 mm wide which are used by V/Line Passenger rollingstock. The wheels on the XPT are 127 mm wide. The report from the ATSB for this derailment is expected in April 2015.

Colin Rutledge advised that the new railway station at Grovedale is now being referred to as Waurin Ponds. However, this could change again because there are now two locations with the same name.

Colin Rutledge referred to the recent track and signal alterations between Spencer Street – South Kensington on the RRL Lines. Colin noted that this one of the biggest works programs undertaken in a very long time. Colin noted the excellent work on this project performed by Chris Gordon.

Colin Rutledge advised that the level crossing at the Up end of Echuca would be upgraded with associated signalling alterations with this work to be completed in six months time.

Andrew Waugh noted that the signal box structures were still in place on the Flemington Racecourse Line and asked what would happen to them. Andrew Wheatland advised that signalling equipment from this project had been offered to tourist and heritage railways.

Brett Cleak confirmed that Passing Lane 1 replacing McIntyre Loop and Tullamarine Loop had been commissioned. The vital data communication links between each end of Passing Lane 1 used radio.

Brett Cleak described a proposal for the re-signalling and remote control of Portland.

Signalling arrangements at Passing Lane 1 were discussed.

Alex Ratcliffe noted the preference for axle counters at level crossings between Bendigo – Echuca and the preference for predictors at the level crossings between Seymour – Tocumwal.

Tom Murray noted that “Rail News Victoria” would cease publication after issue number 300.

**Syllabus Item:** - The President introduced Member Andrew McLean to present the Syllabus Item.

Andy presented a selection of images from his collection taken when travelling on All Lines tickets.

The journeys featured were a 1975 South Australian All Lines ticket, a 1982 New South Wales All Lines ticket, a 1982 Victorian All Lines ticket and a 1985 Queensland All Lines ticket.

A fascinating series of scenes were viewed featuring many locations that have changed or no longer have rail service and rolling stock no longer in existence.

Also included in the presentation was a tribute to the Wingrove Railway. Wingrove was the model railway that lived in Jack McLean’s garage for 60 years. Wingrove has recently been dismantled as the McLean residence at Kenmare Street has been sold.

The presentation was thoroughly enjoyed by those present at the meeting.

At the completion of the Syllabus Item, The President thanked Andy for the entertainment & this was followed by acclamation from those present.

Meeting closed at 22:50 hours.

The next meeting will be on Friday 19 September, 2014 at the Surrey Hills Neighbourhood Centre, Bedford Avenue, Surrey Hill, commencing at 20:00 hours (8.00pm).

## SIGNALLING ALTERATIONS

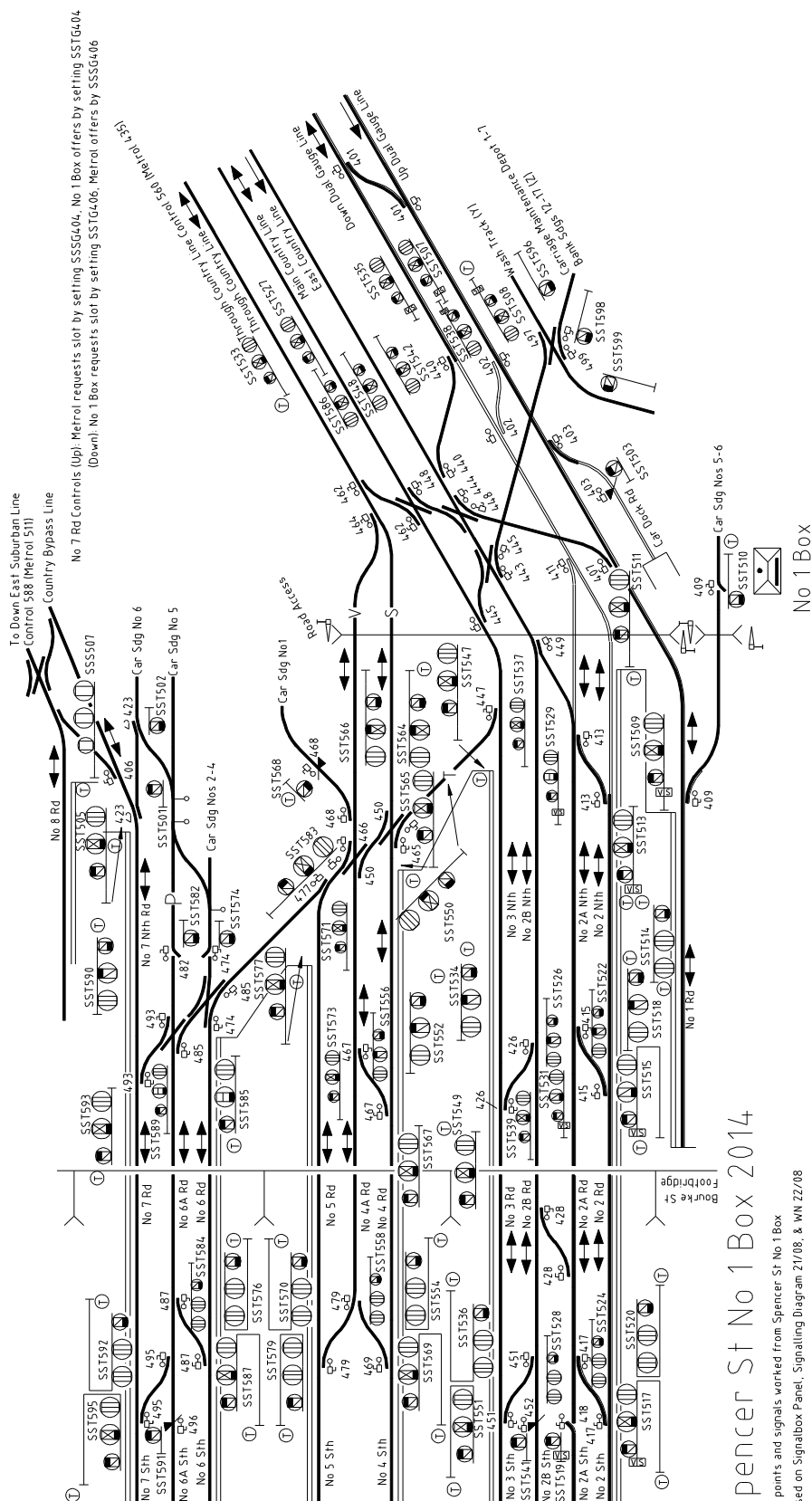
*The following alterations were published in WN 25/14 to WN 33/14 and ETRB A circulars. The alterations have been edited to conserve space. Dates in parenthesis are the dates of publication, which may not be the date of the alterations.*

- |                   |  |                                   |
|-------------------|--|-----------------------------------|
| <b>21.06.2014</b> | <b>Southern Cross – Franklin St – South Kensington</b>   | <b>(SW 108/14, WN 25)</b>         |
|                   | On Saturday, 21.6., the North Melbourne Flyover, the country side of Southern Cross, and the East Suburban Lines were booked out of service for reconstruction and resignalling.   |                                   |
| <b>21.06.2014</b> | <b>Nagambie</b>  | <b>(SW 103/14, WN 24)</b>         |
|                   | On Saturday, 21.6., boom barriers were provided at the passive level crossing at Kirwans Bridge – Longwood Rd (130.377 km). The boom barriers are operated by a level crossing predictor. Trains travelling at more than 50 km/h at the predictor board may accelerate before reaching the crossing. Section 36 predictor boards, healthy state indicators, yellow whistle boards, and remote monitoring will be provided. |                                   |
| <b>22.06.2014</b> | <b>North Melbourne – South Kensington</b>  | <b>(SW 106/14, 108/14, WN 25)</b> |
|                   | On Sunday, 22.6., signalling control system upgrades were brought into service to reflect the new Up and Down Regional Access lines between the North Melbourne flyover and the RRL Lines. The Melbourne Yard VDU at Centrol was updated. The Regional Access lines remained under absolute occupation. TPWS was commissioned at MYD951, MYD958, and MW024.  |                                   |

- 23.06.2014 Melbourne Yard** (SW 107/14, WN 25)  
On Monday, 23.6., the connection between the South Hump Avoiding track and the dual gauge Freight Link siding was commissioned. Home MYD262 was replaced by a dwarf signal with the same number. Dwarf MYD262 can display stop, low speed warning, and clear low speed with arrow type route indicators (vertical and left hand). Points MYD139 were commissioned but were secured normal. The Melbourne Yard VDU at Centrol was updated.
- (24.06.2014) Essendon** (SW 204/14, WN 25)  
The issue concerning the co-ordinated traffic lights at Buckley Street has been resolved. SW 60/14 is cancelled.
- 26.06.2014 Deer Park West** (TON 164/14, WN 27)  
On Thursday, 26.6., Points 9 to the Boral Siding were booked out of use.
- 29.06.2014 Southern Cross, Melbourne Yard** (SW 113/14, WN 27)  
On Sunday, 29.6., the signal control systems for Melbourne Yard at Centrol and Southern Cross No 1 Box were updated.
- 29.06.2014 Glenhuntly** (SW 216/14, WN 26)  
On Sunday, 29.6., the Neerim Rd Up approach warning times were altered in preparation for the introduction of Xtrapolis trains. The approaches were extended by reducing the delay times within the existing track circuits. The Up holding approach times will be compliant at 35 seconds.
- 29.06.2014 Tandara** (SW 117/14, WN 27)  
On Sunday, 29.6., the siding was (temporarily) placed out of service and the main line points secured normal. The electric detection on the Master Key locks (see SW239/13) has been disabled.
- 30.06.2014 Elmore** (SW 118/14, WN 27)  
On Monday, 30.6., the Up end main line points were (temporarily) secured normal. The electric detection on the Master Key lock (see SW72/13) has been disabled. Access to the siding is still available at the Down end.
- (01.07.2014) Freight trains on MTM lines** (SW 217/14, WN 26)  
Commencing forthwith, all PN grain trains must be followed by a scheduled MTM suburban EMU before a V/Line Velocity service can run.
- (01.07.2014) Flemington Racecourse** (SW 218/14, WN 26)  
Trains are permitted to stable in No 1 Track if all other stabling tracks are occupied or unavailable. The train must be stabled at the Down end of No 1 Track between Home RCE534 and the baulks, and Points 434 must be reversed. SW 2/06 is cancelled.
- (08.07.2014) Illuminated Letter 'A's** (SW 219/14, WN 27)  
In the Metropolitan area a number of recent SPADs have been partially caused by ambient lighting making it appear as if the illuminated letter A is lit as a white letter. All illuminated letter 'A's on the MTM network are red, and the illumination of the letter in any other colour must be dealt with as per Book of Rules, Section 2, Rule12, clauses b and c.
- (08.07.2014) Essendon** (SW 221/14, WN 27)  
When a train in No 2 Road and Up Home ESD544 is at clear, a following Up train must not be signalled into No 1 Road until ESD544 has been restored to Stop by the passage of the train. This restriction is due to an issue causing Up Home ESD544 to revert to Stop.
- 08.07.2014 Southern Cross – Franklin St – South Kensington** (SW 108/14, 109/14, 110/14, 111/14, WN 25)  
On Tuesday, 8.7., the North Melbourne flyover was restored to use providing broad and standard gauge access to Southern Cross Nos 1, 2, 2A, and 2B Roads. New broad gauge connections were provided to the RRL lines and South Dynon Loco. Control of the country portion of Franklin St was transferred from Metrol to Spencer St No 1 Box (sic).  
From the RRL lines at Spion Kop Junction a new double track RRL Access Line is provided behind the North Melbourne Arrival Yard to the North Melbourne flyover where a double track junction is provided with the connections to South Dynon Loco and the standard gauge main line. The North Melbourne flyover was converted to a double track dual gauge line (the former broad gauge access to South Dynon Loco is now the Down line, and the former standard gauge line is the Up line). Franklin St Junction was rearranged, and a double track dual gauge line is provided into Southern Cross.  
At the Down (western) end of the North Melbourne flyover a new double track connection to South Dynon Loco has been provided. The former single track connection to the junction of the Reversing Loop (and thence to South Dynon Loco) has been removed. A new dual gauge Freight Link Track has been provided from Moonee Ponds Creek Junction, through the site of the former Creek sidings, under the RRL Access Line and North Melbourne Flyover to a connection to the South Hump Avoiding Track. This provides a head shunt for the Pacific National terminal and access to the broad gauge network.

*Southern Cross – Franklin St Junction*

The standard gauge line into Southern Cross was converted to dual gauge and became the Up Dual Gauge line. The broad gauge Engine Track was also converted to dual gauge and became the Down Dual Gauge Line. The existing connection to the East Suburban line was removed and the Down Dual Gauge line was extended across the new Dudley St to provide access to the Country Lines and the By-pass track. The Country Line was converted to a bi-directional dual gauge line.



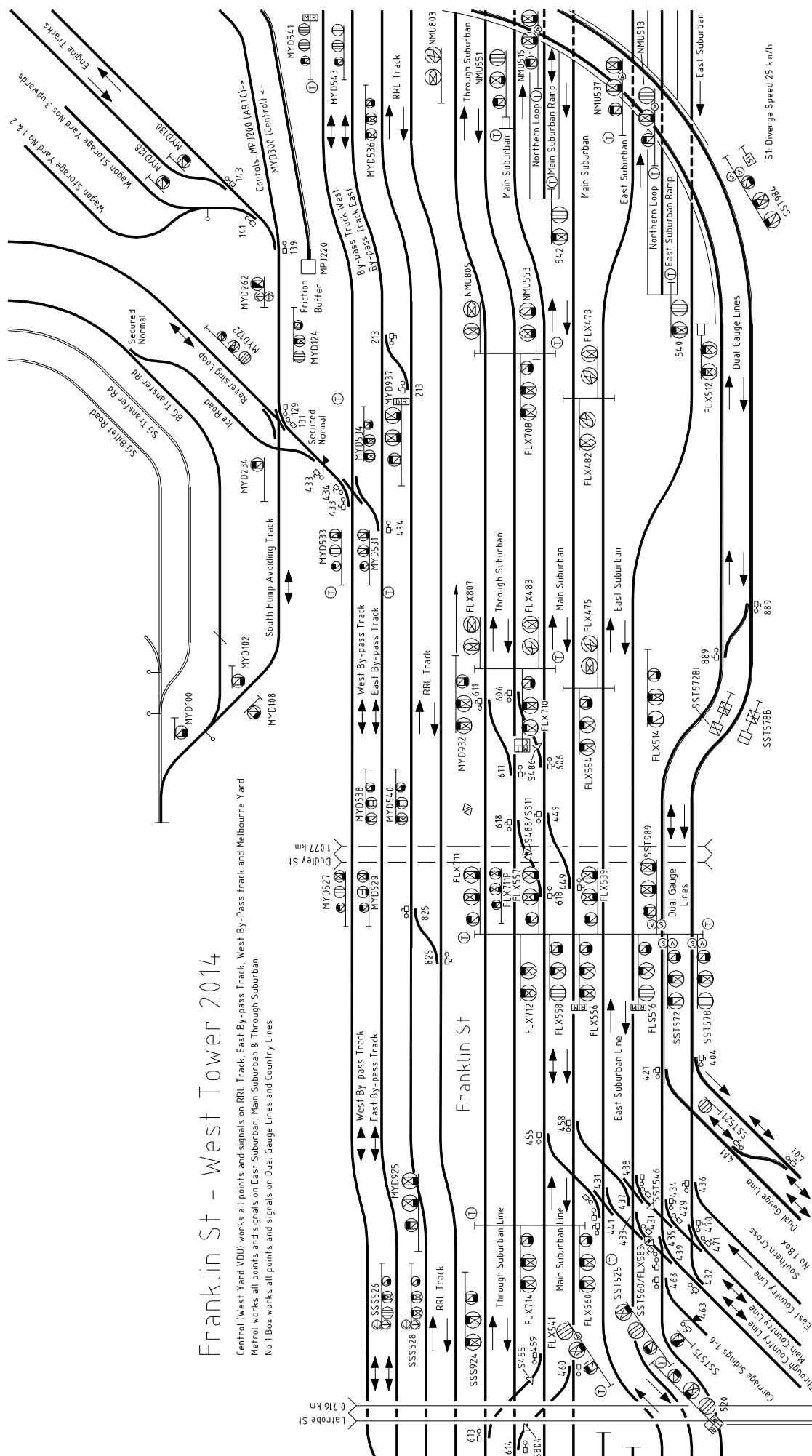
All points and signals worked from Spencer St No 1 Box  
Based on Signalbox Panel, Signalling Diagram 21/08, & WN

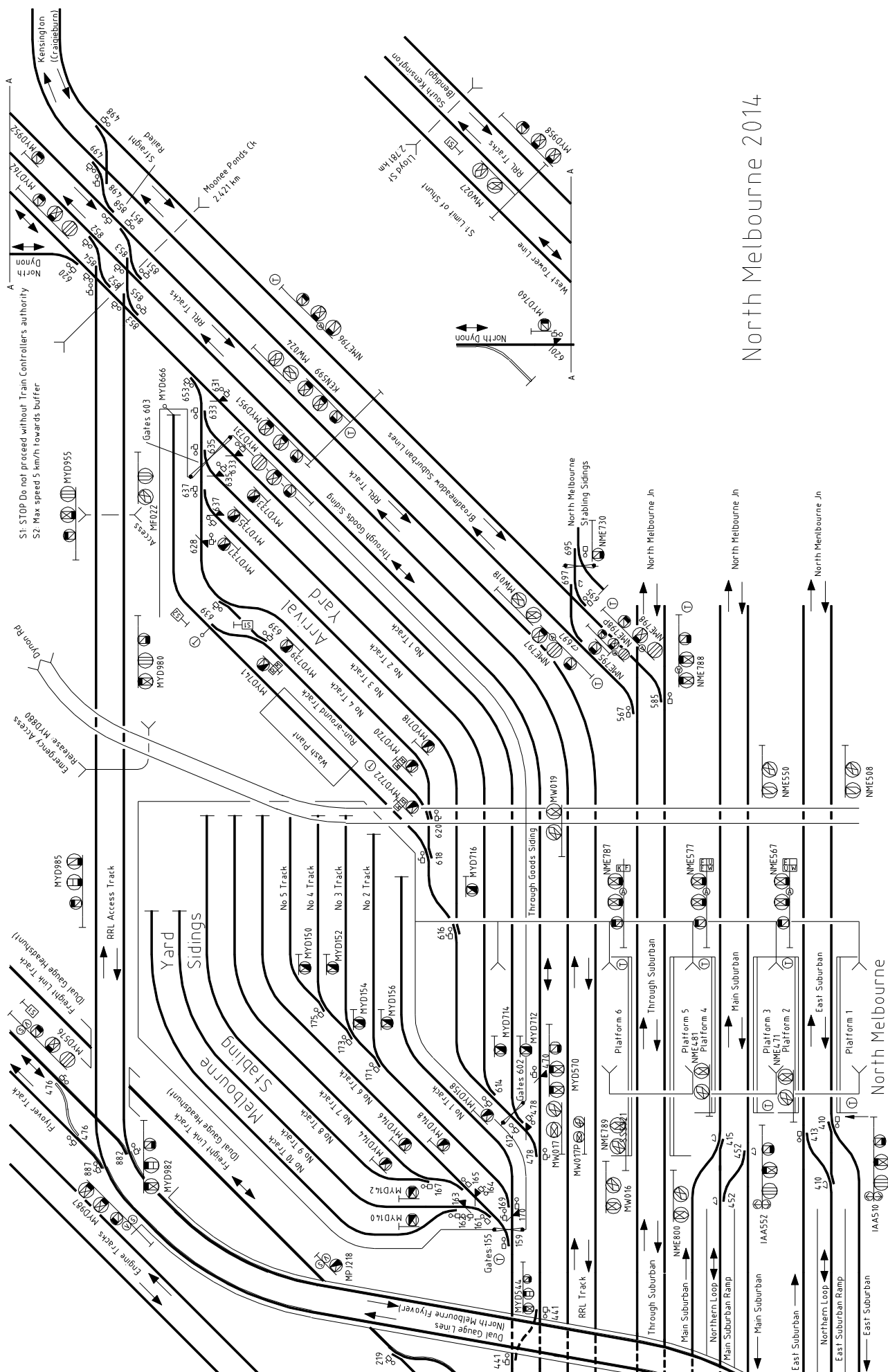




## Franklin St - West Tower 2014

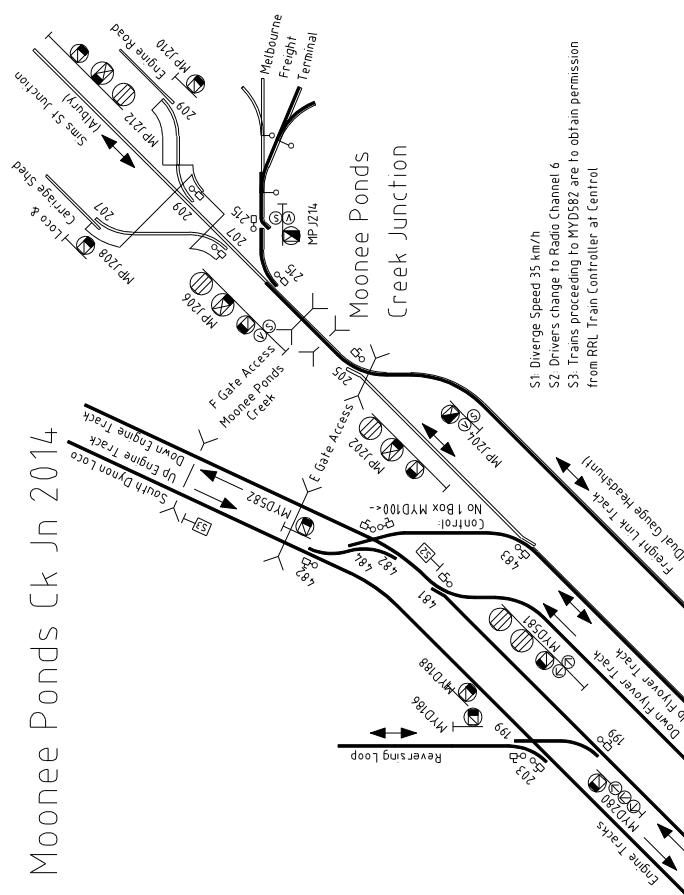
Central West Yard VDU works all points and signals on RRL Track, East By-pass Track, West By-pass Track and Melbourne Yard





North Melbourne 2014





Homes SST507, SST535, SST542, SST572, SST578, SST984, & SST989, Banner Indicators SST572BI & SST578BI and Dwarf SST521 were provided. Points 404 & 421 and Crossovers 401 & 889 were provided. Homes SST572, SST578, SST984, SST989 are fitted with TPWS. Dwarf SST521 is fixed at Stop.

Homes SST182, SST184, SST501, SST506, SST530, SST540, SST580, 521, 525, 531, & 532, and Dwarfs SST544, 500, 501, 503, & 504 were abolished.

All these points and signals are worked from No 1 Box.

## Franklin St Junction – Spion Kop Junction via North Melbourne flyover

The double track Dual Gauge Line was provided over the North Melbourne flyover. The broad gauge double track Regional Access Line was provided from the Down (western) side of the flyover to the RRL lines at Spion Kop Junction.

Homes MYD576, MYD955, MYD980, MYD982, MYD985, & MYD987, and Automatic MF022 were provided. Points 483, 882, & 887 and Crossover 476 were provided. Points 854 & 855 at Spion Kop Junction were brought into use. Home ADL218 was renumbered MYD576. Homes MYD576, MYD955, MYD980, MYD982, MYD985, & MYD987 are equipped with TPWS.

All these points and signals, except MYD955 and Points 854 & 855 at Spion Kop Junction, are worked from No 1 Box. Home MYD955 and Points 854 & 855 are worked from the RRL panel at Centrol.

An emergency road access has been provided across the Regional Access Line for emergency or oversized vehicles. The access gates are detected and released by the Signaller No 1 Box.

Dwarf MYD284 has been abolished.

### South Dynon Loco Access

The Down Flyover and Up Flyover Tracks were brought into use. The direct connection to the Reversing Loop from the flyover was abolished.

Home MYD581 and Dwarfs MYD186 & MYD188 were provided. Dwarf MYD190 was renumbered MYD582. For moves from Dwarf MYD582 towards the Down Engine Flyover line a release from No 1 Box is required. Points 481 & 484 and Crossover 482 were provided. Points 203 and Crossover 199 were provided with dual control point machines. The notice board on the Up Engine Track at South Dynon Loco for departing movements has been altered to read "Trains proceeding to MYD582 are to obtain permission from the RRL Train Controller Control".

All these points and signals are worked from Centrol.

Dwarfs MYD184, MYD194, MYD284, & MYD286 have been abolished. Points 201 were abolished.

*Moonee Ponds Creek Junction*

ARTC Melbourne Metro Train Controller at Mile End controls the points and signals at Moonee Ponds Creek Junction, including Home MPJ206.

When it is necessary to signal a Down standard gauge train towards Moonee Ponds Creek Junction, the Signaller at No 1 Box must obtain permission from the ARTC Train Controller and may then set the route and clear Down Home MYD987. Home MYD987 will display a running low speed aspect while MPJ202 is at stop. When it is necessary to signal an Up standard gauge train towards the Flyover, the ARTC Train Controller is to confer with the Signaller at No 1 Box when the train departs from Tottenham. The Signaller will reverse Points 483, and this will allow the ARTC Train Controller to clear the signal for the movement (Dwarfs MPJ208 or MPJ210 or Home MPJ212). The signaller at No 1 Box will only see standard gauge movements on the ARTC network when Points 205 are reversed. Similarly, the ARTC Train Controller will only see broad gauge trains on the V/Line network when Points 483 are reversed.

No freight movements are to be routed via Southern Cross.

*Freight Link Track*

Dwarfs MYD262 & MPJ218 were provided. Points 219 (MPJ) were provided. Dwarf MPJ218 and Points 219 are worked by ARTC. Dwarf MYD262 is worked by Centrol.

A limit of shunt board is located 8 metres in advance of the friction buffer stop (MPJ220) on the Freight Link Track and shunt movements must not pass this board. An alarm will be operated on the Phoenix system if a train passes the limit of shunt board. Activation of the alarm must be reported to the ARTC Track Supervisor and can only be reset by means of a button at location GR218. Dwarf MPJ218 can be set to fleet mode, and it is only necessary to restore it to Stop for broad gauge moves to Melbourne Yard.

For moves from Dwarf MYD262 to the Freight Link Track the ARTC Train Controller must take MPJ218 out of fleet mode and allow Points 219 to be reversed. The ARTC Train Controller will only see parallel broad gauge moves when Points 219 have been reversed.

For moves from Dwarf MPJ218 to the South Hump Avoiding Track the ARTC Train Controller must take MPJ218 out of fleet mode, which will grant a slot to the allowing Points 219 to be reversed. The V/Line RRL train controller will only see standard gauge movements on the ARTC network.

The Freight Link Track passes through the ARTC Dive, and a detector is provided to signal if the dive is flooded to the top of the rail. When flooding is detected the signals will be held at stop.

SW 2/14 and 70/14 are cancelled.

**10.07.2014** **Tottenham Yard** **(TON 187/14, WN 30)**

On Thursday, 10.7., No 4 West Road was booked out of service.

**12.07.2014** **Southern Cross – Franklin St** **(SW 108/14, 122/14, 206/14, SWP 8/14, WN 25, 26, 28)**

On Saturday, 12.7., Franklin St Junction was simplified and control altered. Franklin St Junction was divided into a suburban side (the Through Suburban, Main Suburban, and East Suburban Lines) controlled by Metrol, and a country side controlled from No 1 Box. Only the Main Country and Through Country lines now have access to the Suburban lines at Franklin St. Redundant points and signals from the East Line were removed. A new single track (bi-directional) Country Bypass line was provided to give direct access between the flyover lines and Nos 7, 8, and 8A Roads. This replaced the former Carriage Sidings No 8 & 10. Control of the signalling at the Down end of Platform 7 and at the Up end of Carriage Sidings for moves to 6A and 7 Roads was transferred from Metrol to Spencer St No 1 Box.

*Franklin St Junction – Metrol side*

Up Home 546 (East Suburban Line) was abolished. Points 412, 414, 416, & 447, Crossovers 439 & 446 and Catch 412 were abolished. Homes 524, 543, 545, 562, & 564 on the East Suburban & Main Suburban lines were replaced (some with tilt masts). The illuminated letter 'A' was removed from Homes 520, 524, 541, 543, 545, 560 & 564. Theatre route indicators were provided on Homes 516 and 556 and will display 'M' for Metropolitan and 'R' for Regional lines.

*Franklin St Junction – No 1 Box side*

Homes SST500, SST525, SST527, & SST533, and Dwarfs SST502 & SST575 were provided. Home SST500 is fitted with TPWS. Points 406, 410, 429, 432, 435, 436, 439, 463, 470, & 471, Crossover 423, and Hayes Derail/Crowder 463 were provided. Points 429, 432, 434, 436, 439, 470, & 471 were provided with dual control point machines.

Control of the points and signals at the Down end of No 7 North Road was transferred to No 1 Box. Cross boundary interfaces are provided between Metrol and No 1 Box for the following moves:

- Suburban lines and the Main Country Line (Up direction only) at Franklin St Junction

(Continued on page 93)

## VR SIGNAL BOX DIAGRAMS

Chris Guy and Wilfrid Brook

The signal box diagram is provided to ensure that the signaller has a constant awareness of the track layout and signals he/she is responsible for and serves as an adjunct to the efficient operation of the interlocking frame.

Traditional signal box diagrams fall into two categories – illuminated and picture frame. Illuminated diagrams were usually provided in track circuited locations to display the movement of trains within the track sections controlled by the signal box. This type of diagram first appeared at South Yarra in 1915. It featured fully illuminated track sections and was housed in a heavy, riveted metal casing. The larger examples were suspended from the ceiling on large hooks and were most impressive. At least twenty-six of these were eventually to be found at various city and suburban signal boxes and two still survive in service at Brighton Beach (Figure 1) and Sandringham at the time of writing (June 2014).

In 1925 a more austere type of illuminated diagram featuring bullseye lamps within each heavily drawn track section and housed in a timber casing was introduced. Examples could be found in both suburban and country locations such as Dendy Street (Figure 2) and Violet Town. Apart from a few nondescript diagram types being produced in the interim, for example South Yarra, a new concept in illuminated diagrams was introduced during the 1940s. This type featured watercoloured track sections with small lamps in each section and was seen, for example, in service at Little River (Figure 3).

The first Victorian Railways interlocking was brought into use on 1 July 1876 at Essendon Junction, North Melbourne (1) and picture frame diagrams possibly date from this time. On p. 42 of the book "The Signal Box" is a photograph of the interior of Lydney Junction Great Western box taken in 1879 which shows a signal box diagram (2). Signal box diagrams are mentioned in the Minutes of the Engineer of Existing Lines – the forerunner of the Victorian Railways Way and Works Branch – in about 1885 (3). The information they display has changed little since then.

The size of the diagram usually relates directly to the extent of the location it represents. Drafting styles are of particular interest. Some of the earliest diagrams at Ballarat East and Bendigo C (Figure 4) survived until the 1980s and were quite artistic and unique. This style of drafting gave way to a more contemporary form early in the second decade of the last century. The former Baxter and Greensborough (Figure 5) diagrams typified the style. Even so certain features, such as the depiction of the signal box as a hatched box, lingered on until the style which eventually became standard was adopted, for example Glenrowan (Figure 6). This arrangement using standard symbols consists of the track layout with all associated signals, points, lock bars, gates and any other controlled equipment suitably numbered according to the lever which operates it. Signal lever numbers are shown in red beside the relevant signal, point lever and lock bar lever numbers are shown in black. Point numbers in picture

frame diagrams and some illuminated diagrams were circled which distinguished them from lock bar numbers. All signalled moves are set out under the heading of either Up signals or Down signals depending upon the direction of movement within the area of control. Below the operating room of the signal box can be found the interlocking apparatus with safeguards against conflicting moves being set up. Thus the levers can only be pulled in a particular sequence.

The layout of track and signals in the diagram had to be such that it could be readily understood without confusion. Most diagrams assumed a rectangular (landscape) configuration with track and signals drawn above the Up and Down moves. However in some cases this standard format was varied due to the need to depict unusual track layouts, for example Northcote Loop Junction (Figure 7), where the signalled moves were set out on the right hand side of the track diagram.

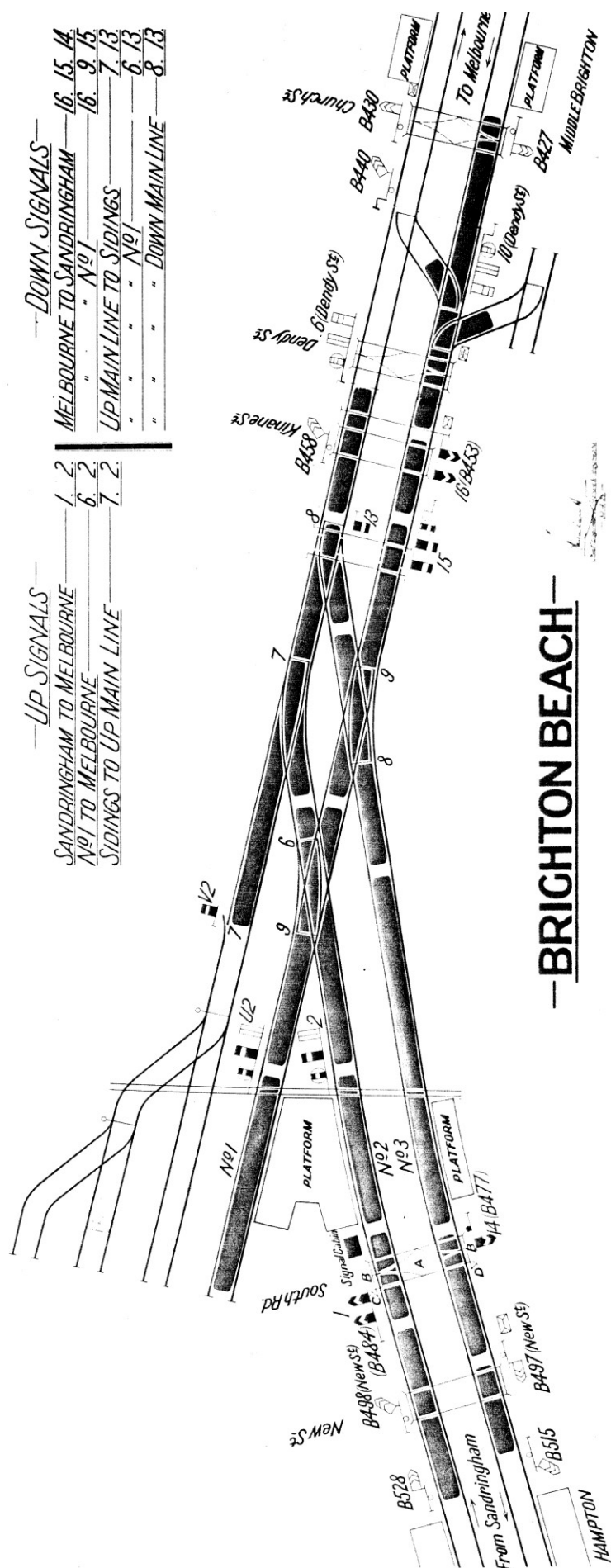
Close examination of certain diagrams produced in the Victorian Railways drawing office will reveal to the attentive eye the superb penmanship of one particular draftsman who drew a large number of diagrams – both picture framed and illuminated – over a period of at least twenty years. None of this person's contemporaries ever managed to equal his style. Sadly, some of the very last diagrams drawn could only be described as amateurish – perhaps reflecting the modern day loss of drafting skills formerly employed.

When one examines diagrams of Flinders Street A (Figure 8), B and C Boxes or No 1 Box Melbourne Yard it is difficult to appreciate the vast amount of time involved in laying out the details in pencil and completing the job in black permanent ink and red watercolour thickened with gum Arabic. One has to admire the results the draftsman achieved with tools of trade that are now considered obsolete. Because of their size and the danger of damaging such a large piece of cartridge paper, these diagrams – and others – were linen backed for strength and durability.

Alterations to diagrams were usually carried out in the drawing office at Spencer Street and a reduced photograph provided in the signal box in lieu. There were occasions when simple alterations were effected on site – especially when patches were placed over moves which no longer applied and the corresponding features on the diagram were either erased or simply patched over. The Signal and Telegraph Engineer would put his name to a newly drafted diagram or one that had been altered. The Interlocking Engineer initialled and dated the diagram below the lower margin.

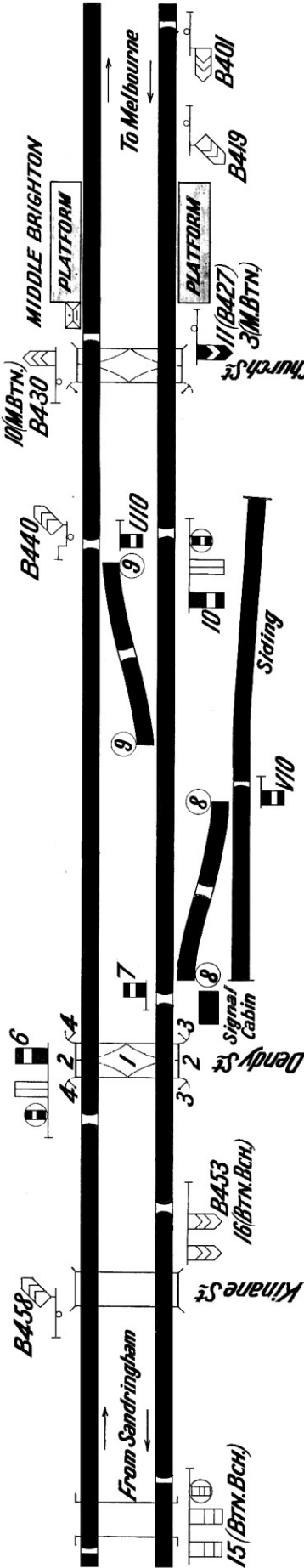
Three known types of timber mouldings were used in the manufacture of picture frames over the years until the last was issued to service in the 1970s.

The abolition of interlocked frames over more recent years and the introduction of control panels complete with engraved track and signal layouts have virtually brought to an end the era of hand drafted diagrams. Those that



# DENDY STREET

Chief Engineer of Signals & Telegraphs  
28. 7. 46



## UP SIGNALS

SANDRINGHAM TO MELBOURNE — 6.  
DOWN MAIN LINE - UP MAIN LINE — 9. 7.  
SET BACK ALONG DOWN " — 7.  
DOWN MAIN LINE TO SIDING — 8. 7.

## DOWN SIGNALS

MELBOURNE TO SANDRINGHAM — 11. 10.  
UP MAIN LINE TO DOWN MAIN LINE — 9. 10.  
SIDING TO DOWN MAIN LINE — 8. 10.

# LITTLE RIVER

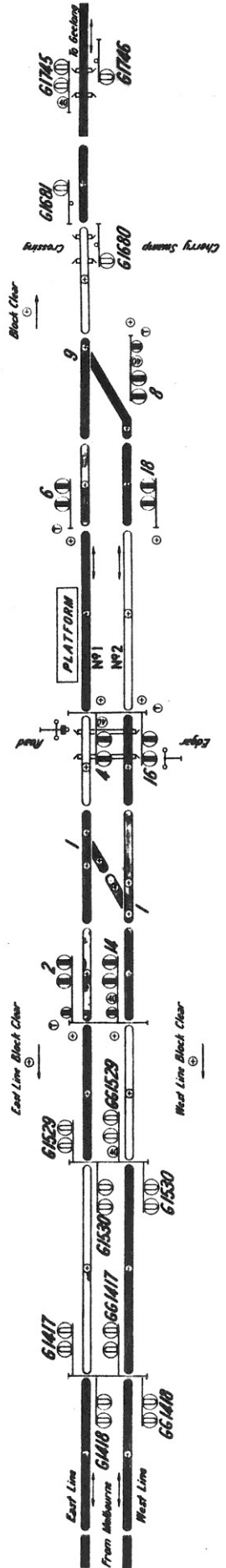
Signal & Communications Engineer

## DOWN SIGNALS

MELBOURNE [EAST LINE] TO GEELONG — 2. 6.  
" [WEST LINE] " VIA NP1 — 1. 14. 6.  
" " " " NP2 — 14. 9. 18.

## UP SIGNALS

GEELONG TO MELBOURNE VIA EAST LINE — 8. 4.  
" " " " NP1 AND WEST LINE — 8. 1. 4.  
" " " " NP2 " " — 9. 8. 16.



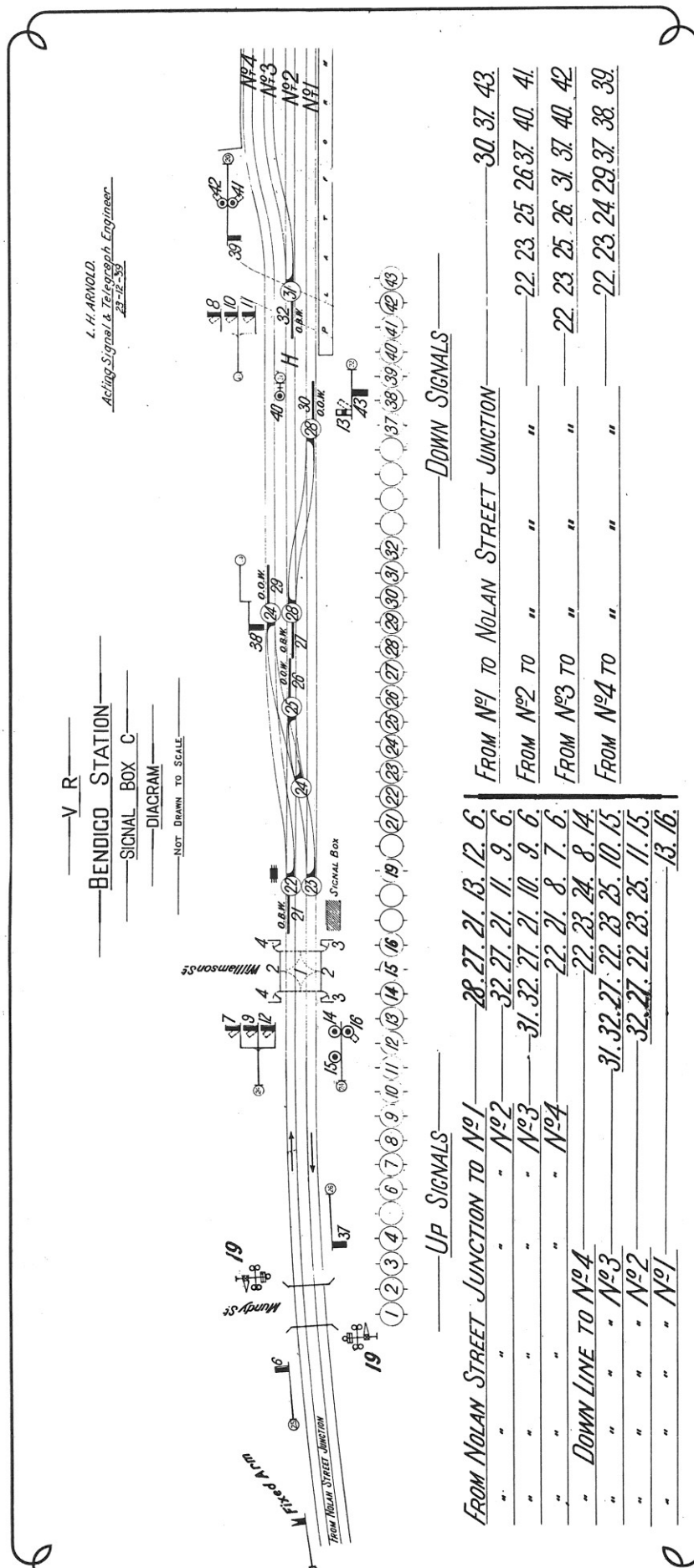
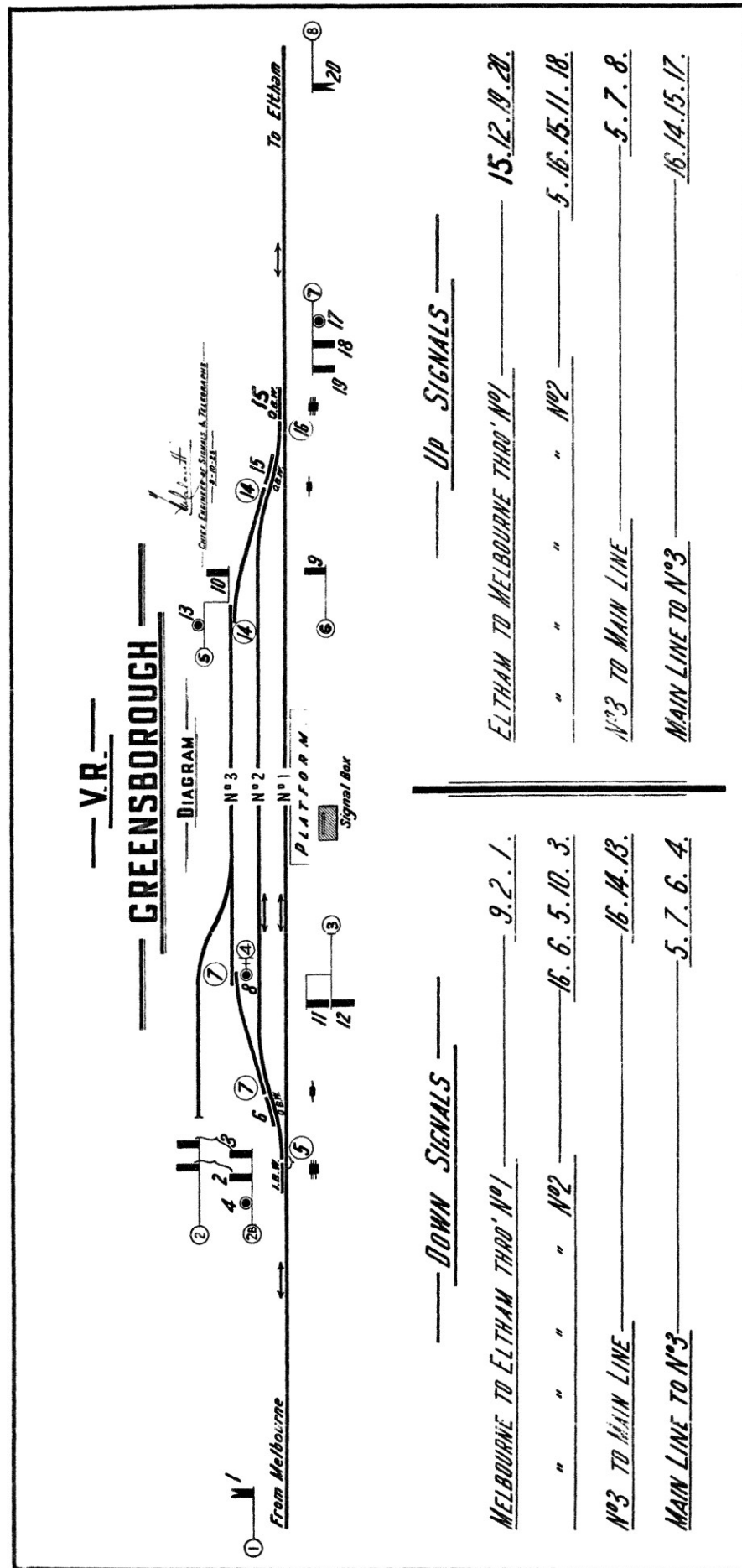


Figure 4 (left). The diagram at Bendigo C box was a survivor of a distant past. It appears to have been drawn after September 1891 when Sandhurst was renamed Bendigo. This version of the diagram dates from December 1959, when the hand gates at Mundy St were replaced by manually controlled flashing lights. The main feature of this style of diagram was that the tracks were represented by two lines – one for each rail, and the circles containing the points were drawn at the toe of the points. However, the diagram for Bendigo C has one feature not found on other surviving examples of this style. This was the representation of the lever badges showing the 'in use' levers. Too few examples of this style of diagram have survived to know if this feature was once common.

Figure 5 (opposite page). Greensborough was an example of the style of diagram introduced just before the first world war. This particular diagram probably dates from July 1910 when the signal box was provided. This version of the diagram dates from October 1925 when the departure Home signals (9, 10, 11, & 12) and the disc signals (4, 8, 13, and 17) were provided. The main change from the earlier style was the use of a single line to represent the tracks – this makes the lay of the points much easier to see. However, the symbols are still almost identical – note especially the point numbers being shown in circles, and the cross hatched signal box.





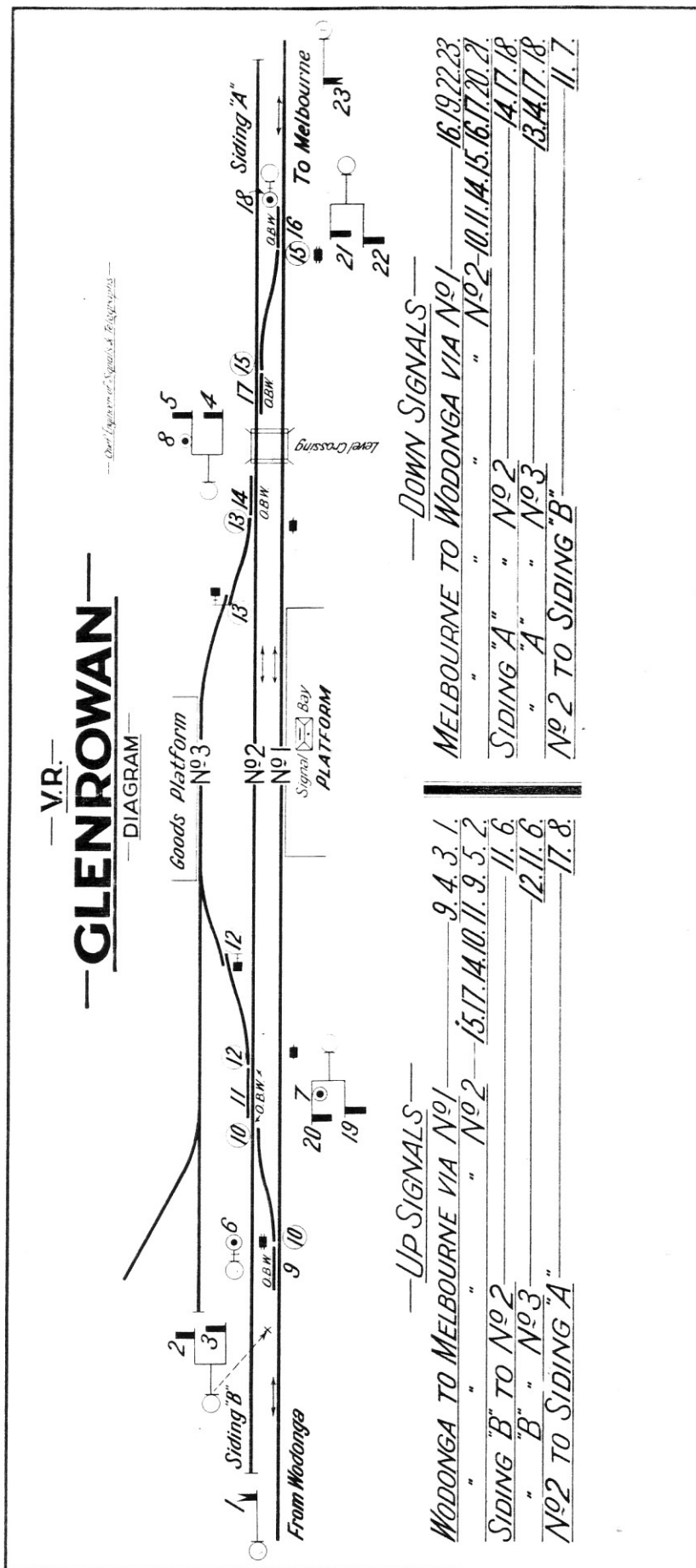
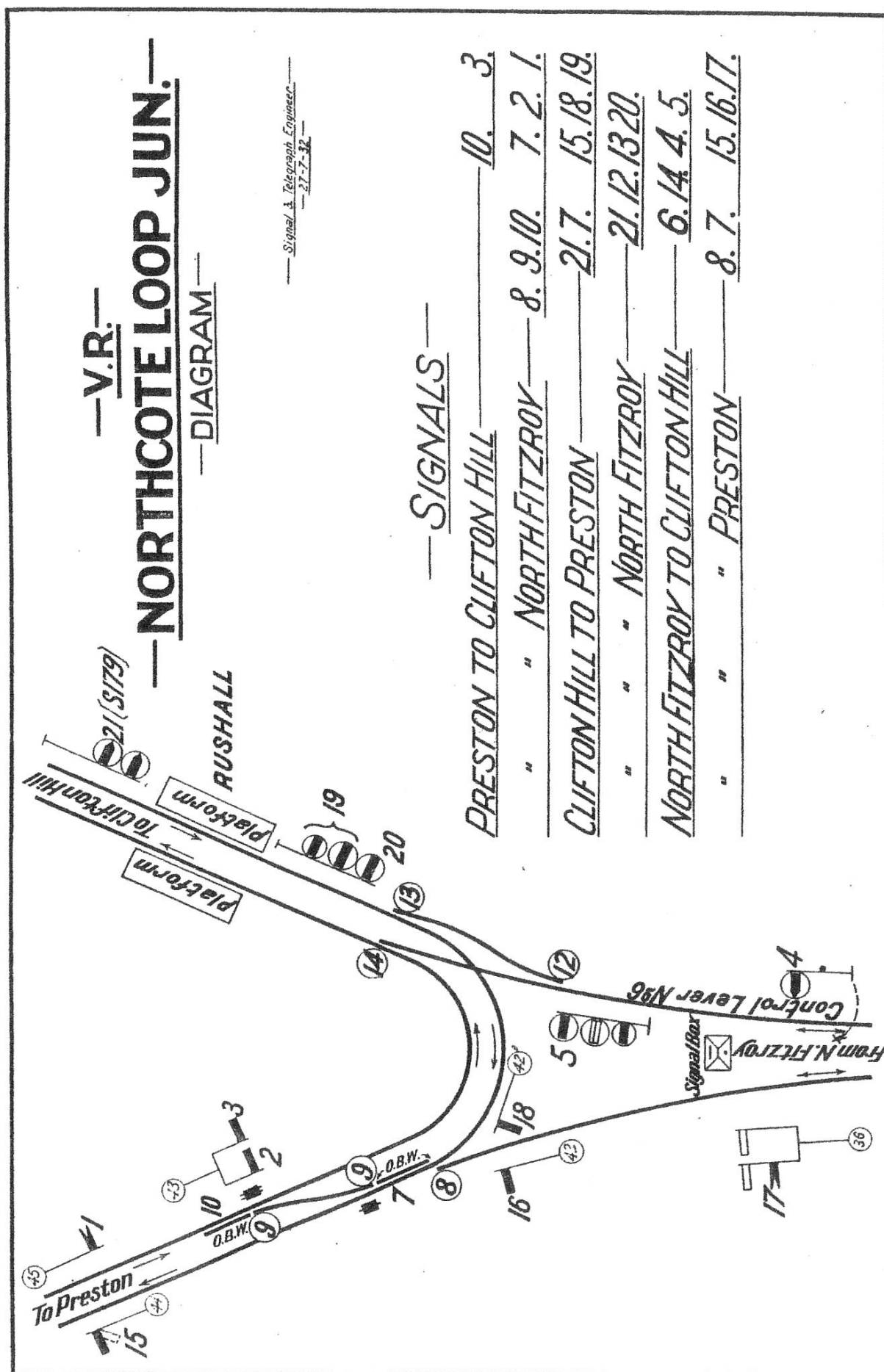
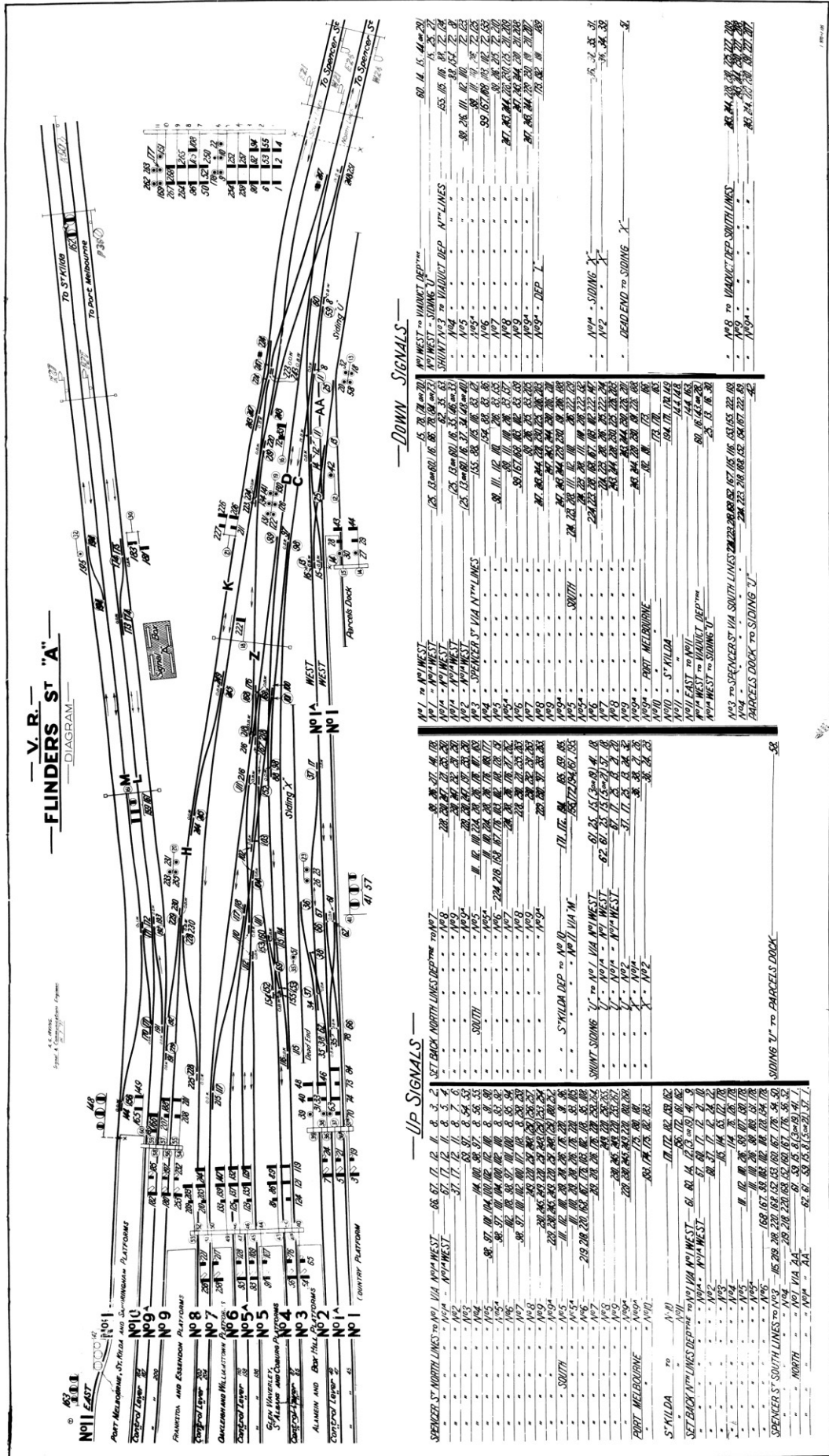


Figure 6 (left). Although undated, this diagram of Glenrowan almost certainly dates from July 1929. At this time the two dead end sidings 'A' and 'B' were provided and the frame either replaced by a new 23 lever machine, or extended to that length. The diagram shows a further slight variation in diagram symbols – the symbol for the signal box now matches that of the printed signal diagrams.

Figure 7 (opposite page). A box diagram was always drawn showing the layout as seen by the signalman when standing at the levers. Occasionally, this produced unusual diagrams as this diagram of Northcote Loop Junction shows. Dated July 1932, this diagram may have been drawn at that time for the introduction of lever locking and track control on the Suburban line to North Fitzroy B signal box.

Figure 8 (page 92) Box diagrams could get very large. This diagram for the 280 lever Flinders St A box measured 1970mm by 1135mm (6'7" by 3'9"). This Flinders St A box was provided in September 1905, but this diagram was probably provided in December 1917 when the frame was extended to 280 levers in connection with the duplication of the viaduct. This version of the diagram dates from July 1977 after the abolition of the stabling sidings immediately outside the signal box.





survive in private collections are highly prized, for they represent a significant chapter in the history of railway signalling. In June 2007 a diagram of the South Australian Railways 1886 "Balhannah Station Yard – Diagram of Points and Signals" sold for \$810 at auction (4).

#### References.

1. The Argus, Monday 3 July 1876.
2. The Signalling Study Group. The Signal Box. A Pictorial History and Guide to Designs. Oxford Publishing Company, 1986, p. 42.
3. Michael Guiney. Personal communication.
4. The End of the Line Mail Auction No. 9, 22 June 2007

## SIGNALLING ALTERATIONS

(Continued from page 84)

- Suburban lines and the Through Country Line (in both directions) at Franklin St Junction
- Suburban lines and No 7 Road (in both directions)
- Country Bypass Line and Nos 8 and 8A Roads (in both directions)

Metro Trains Operating Procedure 12 (Metrol – Southern Cross No 1 Signal Box, Failure of signals at the cross boundary interface) was reissued.

Upon completion of the alterations, Diagrams 70/14 (Southern Cross V/Line Passenger Lines), 68/14 (Southern Cross MTM Passenger Lines), 74/14 (Southern Cross – North Melbourne Passenger Lines), 72/14 (West Tower – Melbourne Yard), 78/14 (Moonee Ponds Creek), and 66/14 (South Kensington) replaced 92/13, 14/14, 90/13, 94/13 (West Tower), 96/13, & 20/14 respectively.

- 12.07.2014 North Melbourne Flyover** (TON 175/14, WN 28)  
At 1518 hours on Saturday, 12.7., the Up and Down Dual Gauge North Melbourne Flyover Tracks and the Up and Down Regional Access Tracks were booked out of use due to derailment damage. Points 484, 854, & 855 were secured normal, and Points 889 were secured reverse.
- (15.07.2014) Operation of road rail vehicles and track machines on Metro network** (SWP 9/14, WN 28)  
SWP 2/14 was reissued due to the removal of Kensington signal box from the list of locations where the signaller directly controls the level crossing.
- (15.07.2014) Spencer Street** (SW 228/14, WN 28)  
Due to an overlap issue, Home 529 (No 8 Centre) will only display Low Speed Caution for the move to Home 507. The Signaller Metrol will be required to select the low speed function after the route has been set.
- (15.07.2014) Melbourne Yard** (SW 124/14, WN 28)  
The broad gauge connection between the Freight Link Track and the South Hump Avoiding Track is not available for use. Points 139 have been secured normal. SW109/14 has been cancelled and new instructions will be issued.
- 18.07.2014 Broadmeadows** (SW 230/14, WN 28)  
On Friday, 18.7., Dwarf BMS532 and the insulated rail joint at the Up end of Siding C were relocated 6 metres in the Down direction. Siding C is now 459 metres in length. Amend Diagram 51/10 (Glenbervie – Somerton).
- 19.07.2014 Kensington – Essendon** (SW 235/14, 236/14, WN 29)  
On Saturday, 19.7., alterations were made to the Kensington and Essendon interlocking data to correct the following issues:
- Route line not dropping out for signals KEN551, KEN596, & NKT553
  - Stopping/Express selection at Moonee Ponds to be selected from timing track at Strathmore
  - Modify the Stopping/Express selection at Buckley St, Essendon, when signals are in partial fleeting mode.
  - Modify the approach locking condition for signal KEN551
  - Modify Macaulay Rd approach for Up trains
  - Provide R/Y (Medium Speed Warning) aspect on E340 with forward route set
- The signalling restriction involving ESD544 (SW 221/14) is cancelled.
- 20.07.2014 Broadmeadows** (SW 231/14, SWP 10/14, WN 29)  
On Sunday, 20.7., train compound security gate 431 was motorised and interlocked with the signal system. Metro Trains Northern Group Operating Procedure 17 (Craigieburn, Somerton, Broadmeadows Failure of Signals) is to be amended to include a new clause I "Broadmeadows C Siding Train Stabling Compound Gates".

- (22.07.2014) Essendon & Flemington Racecourse Line (SW 207/14, 208/14, WN 29)**  
Amend the Working Timetable Addenda to reflect the resignalling of Essendon and the Flemington Racecourse Line.
- 31.07.2014 Kilmore East – Broadford (SW 129/14, WN 30)**  
On Thursday, 31.7., the flashing lights at Dry Creek Rd (70.960 km) were converted to boom barriers. Operation will continue to be by predictors. Trains travelling at more than 50 km/h at the predictor boards may increase speed before reaching the level crossing. RFR Predictor Indicator Boards were provided and the existing Predictor Boards were abolished. Healthy State indicators and Yellow whistle boards were provided.  
Amend Diagrams 66/13 (Heathcote Junction – Kilmore East) and 22/12 (Broadford – Tallarook).
- 02.08.2014 Metrol (SW 249/14, WN 30)**  
The TCMS facility will assume the Metrol signalling and train control functions between 0300 hours Saturday 2.8.14 and 0300 hours Tuesday 5.8.14.
- 03.08.2014 Aspendale (SW 238/14, WN 32)**  
On Sunday, 3.8., the Up Stopping approach at Grove St was altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Aspendale – Edithvale (SW 239/14, WN 32)**  
On Sunday, 3.8., the Up and Down Stopping approaches at Lochiel Ave were altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Chelsea - Bonbeach (SW 240/14, WN 32)**  
On Sunday, 3.8., the Up and Down Stopping approaches at Argyle Ave were altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Bonbeach (SW 241/14, WN 32)**  
On Sunday, 3.8., the Up Stopping approach at Bondi Rd was altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Bonbeach - Carrum (SW 242/14, WN 32)**  
On Sunday, 3.8., the Up and Down Stopping approaches at Mascot Ave were altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Carrum - Seaford (SW 243/14 & SW 244/14, WN 32)**  
On Sunday, 3.8., the Down Stopping approach at Eel Race Rd and the Up Stopping approach at Armstrongs Rd were altered in preparation for the introduction of Xtrapolis trains.
- 03.08.2014 Seaford – Kananook (SW 245/14, WN 32)**  
On Sunday, 3.8., the Down Stopping approach at Seaford Rd was altered in preparation for the introduction of Xtrapolis trains.
- (05.08.2014) Frankston – Stony Point (SW 252/14, WN 31)**  
Under no circumstances is a single unit Sprinter to operate between Frankston and Stony Point. All movements are to operate as multiple unit consists.
- 08.08.2014 Benalla – Oaklands (SN 1669/14, WN 32)**  
On Friday, 8.8., the electronic Phoenix Train Order System will replace Train Staff and Ticket working. Begin and End Train Order Working signs have been provided at Benalla and Oaklands.  
St James, Yarrawonga, Warragoon, Sanga, and Wangamong have become siding locations. Each is equipped with Location, Yard Limit, and Shunt Limit signs. Mechanical point indicators are attached to the switch stands on the main line points and will display a green arrow or red dumbbells.  
A Master Key is to be carried by all trains on the corridor. Five ordinary Master Keys numbered 1 to 5 have been provided and will be secured at Benalla, Yarrawonga, and Oaklands. The number of the Master Key carried must be recorded on the Train Order.
- (12.08.2014) Goods trains on the MTM Network (SW 259/14, WN 32)**  
The instructions in SW 217/14 covering the operations of PN grain trains on the MTM network have been cancelled.