Government of South Australia
Department for Infrastructure and Transport

Station Signage and Pavement Marking – Train System

Engineering Standard

Rail Commissioner

AR-PW-PM-SPE-00129010 (D070)

DOCUMENT AMENDMENT RECORD

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1. Introduction

The Department of Infrastructure and Transport owns the Adelaide Metropolitan Passenger Rail Network (AMPRN) currently operated and maintained under the Rail Accreditation of third party. There are approximately 89 train stations serving the AMPRN.

2. Purpose

The purpose of this standard is to outline the requirements for type, details and placement of station precinct signage and pavement marking for platforms, primary access paths, mazes, bus interchanges, accessible parking facilities, designated kiss ‘n’ go areas, cycle lanes, boarding patches and station facilities on the AMPRN. This standard should be read in conjunction with the remainder of the DIT Station Standards for the Train System, as listed in DIT Master Specification Part RW-STS-D1 Stations.

3. Scope

This standard applies to all new signage and pavement marking at DIT rail station precincts and areas near rail stations.

4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Standard Drawing Marginal Platform Signage & Pavement Marking Layout	CS1-DRG-361813
Standard Drawing Island Platform Signage & Pavement Marking Layout	CS1-DRG-361814
Standard Drawing Car Park & Bus Interchange Signage & Pavement Marking Layout	CS1-DRG-361815
Station Precinct Concept – End of Platform – Signage Layout	S7071, sheet 10
Standard Drawing Signage Schedule Drawing Register	CS1-DRG-361816
Standard Drawing Station Platform General Layout	CS1-DRG-361819
Standard Drawing Standard Amenity Shelter for Marginal Platform General Layout	CS1-DRG-361820
Standard Drawing Standard Amenity Shelter for Island Platform General Layout	CS1-DRG-361821
Station Precinct Concept – Platform TGSIs and Pavement Marking Layout	S7071, sheet 21
Station Precinct Concept – Shelter Furniture	S7071, sheet 22
Passive Pedestrian Crossing – Single or Multiple Tracks – Signage & Pavement Marking Layout	CS4-DRG-350290
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Passive Pedestrian Crossing – Adjacent Level Crossing – Signage & Pavement Marking Layout	CS4-DRG-350292
Active Control / Autogates – Signage and Pavement Marking Layout	CS4-DRG-350293
Stand Behind the White Line – Engineering Instruction	CS1-DOC-001196

5. References

- AS 1428 Design for Access and Mobility
- AS/NZS 1734 Aluminium and Aluminium Alloys
- AS 1742 Manual for Uniform Traffic Control Devices
- AS 1743 Road Signs - Specifications
- AS 1906 Retroreflective Materials and Devices for Road Traffic Control Purposes

- AS/NZS 2293 Emergency Escape Lighting and Exit Signs for Buildings
- AS/NZS 2312.2 Guide to the Protection of Structural Steel against Atmospheric Corrosion by the use of Protective Coatings: Hot-dip Galvanising
- AS 2700 Colour Standards for General Purpose
- AS 2890 Parking Facilities
- AS 4049 Paints and Related Materials – Pavement Marking Materials
- AS 4586 Slip Resistant Classification of New Pedestrian Surface Materials
- AS 4663 Slip Resistant Measurement of Existing Pedestrian Surfaces
- AS 4680 Hot-dip Galvanised (Zinc) Coatings on Fabricated Ferrous Articles
- DIT Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices Part 2 – Code of Technical Requirements.
- DIT Operational Instruction Pub 5 Pavement Marking Manual (DPMM)
- DIT SA Standards for Workzone Traffic Management
- DIT Master Specification Parts R45 –Materials for Pavement Marking, R46 – Application of Pavement Marking, R48 – Supply of Signs, and R49 – Sign Installation.
- HB 197 An Introductory Guide to the Slip Resistance of Pedestrian Surface Materials
- National Construction Code (NCC)

Legislative Requirements

- *Road Traffic Act of 1961*

"**Road Related Areas**" as defined by the Road Traffic Act includes:

1. a footpath or nature strip adjacent to a road;
2. an area that is not a public road and is open to the public and designated for use by cyclists; and
3. any area that is accessible to the public and where a vehicle may be driven, although these areas may not be a public road.

Road related areas within the station precinct may include, but are not limited to:

1. kiss'n'go
2. car parks;
3. cycle paths;
4. mazes which form part of the cycle path; and
5. some access paths and other paths.

Signage in areas that are considered road related areas shall be in accordance with AS 1742.

6. Acronyms

ACRONYM	FULL NAME
AMPRN	Adelaide Metropolitan Passenger Rail Network
DPMM	DIT Operational Instruction Pub 5 Pavement Marking Manual
DIT	Department of Infrastructure and Transport

7. Traffic Control Devices

Traffic Control Devices are signs, signals, markings, structures or other devices to direct or warn motorists and the public. Traffic Control Devices are those referred to within AS 1742 and DIT's Manual of Legal Responsibilities and Technical Requirements for Traffic Control Devices Part 2 – Code of Technical Requirements.

The signage and pavement marking drawings shall comply with and shall be produced in accordance with DIT Operational Instruction Pub 5 Pavement Marking Manual (DPMM).

8. Design Requirements – Signage

8.1. Design Life

All signage elements shall have a design life as follows:

ELEMENT	DESIGN LIFE (YEARS)
Other sign support structures and other roadside furniture	30
Sign faces	10

8.2. Sign Sizing

The sizing of the signs shall be in accordance with the relevant sign detail drawing which can be identified in CS1-DRG-361816 Standard Drawing Signage Schedule Drawing Register.

8.3. Sign Material Properties

8.3.1. General

Signs shall:

1. have an adhesive backed matt vinyl printed graphic sign face;
2. be free of cracks, tears and other surface blemishes;
3. have edges which are de-burred and smoothed with corners which are rounded and have a radius of 15 mm;
4. have a raised tactile and Braille information provided where signs are located less than 1 600 mm from the finished floor level in accordance with AS 1428.1; and
5. have an anti-graffiti application on sign faces either in the form of plastic overlay / film or an approved anti-graffiti liquid application to allow for easy removal of graffiti.

8.3.2. Sign Material

Signs shall be manufactured from:

1. aluminium sheeting;
2. colorbond;
3. metal anodized plates;
4. polycarbonate;
5. steel frame; or
6. self-adhesive matte vinyl lettering

The material to be used for each sign shall be in accordance with the relevant sign detail drawing, which can be identified in CS1-DRG-361816 Standard Drawing Signage Schedule Drawing Register.

8.3.3. Backing

The backing of signs that may create glare issues for train drivers, motorists or pedestrians shall be painted to AS 2700 – G61 “Dark Green”, with long life paint compatible with the sign material or covered with an adhesive cast vinyl material.

8.3.4. Stiffeners

Stiffeners shall be continuous horizontal lengths of galvanized cold rolled steel channel with internal clamping ridges compatible with a metal strut mounted clamping system designed to withstand exposure to oils, chemicals and industrial cleaning compounds while minimizing noise and absorbing shock and vibrations.

The following signs are to be stiffened:

1. colorbond signs by fixing to a post;
2. aluminium signs with a plate thickness t = 1.6 mm and overall width > 1 200 mm;
3. aluminium signs with a plate thickness t = 2.0 mm and overall width > 1 500 mm; and
4. signs with a width to height ratio of 2.5 or greater.

The stiffening of the signs shall be undertaken in accordance with Part RD-LM-S2 Supply of Signs.

8.3.5. Punched holes

Signs that require holes for mounting purposes shall be cleanly punched during manufacture to fit the relevant fixings.

8.4. Sign Visibility

8.4.1. Illumination

Passenger Information Displays shall meet lighting levels in accordance with CS5-DOC-003511.

All other signs shall be lit sufficiently at all times for passengers, pedestrians and motorists to read the signs including:

1. by ambient light from adjacent station precinct lighting – for signs directed at passengers and local pedestrians; or
2. by retro-reflectivity – for signs directed at motorists.

8.4.2. Retro-reflective Signs

The following station precinct signs shall be retro-reflective:

1. maze related; and
2. parking related including Kiss ‘n’ Go.

No signs on the platform shall be retro-reflective.

The retro-reflective signs shall be “Class 400” and shall conform with AS 1906.1 and AS 1742.2. The retro-reflective material shall be applied to the sign blank in one continuous piece and in accordance with the retro-reflective sheeting manufacturer’s recommendations.

The reflectivity requirements for each sign shall be in accordance with Part RD-LM-S2 Supply of Signs.

8.4.3. Contrast

The sign shall be placed in a position where the surrounding (mounting) surface provides a minimum 30% luminance contrast to the sign.

Where this 30% minimum luminance contrast cannot be provided, and the sign cannot be relocated to an alternative site a 40 mm wide suitably contrasting border (>30% minimum luminance contrast to the sign) shall be provided on the sign. This constitutes a non-standard sign.

8.5. Sign Installation Details

Signs shall be installed in accordance with this clause and Part RD-LM-C4 Sign Installation.

8.5.1. Sign Fixing Mediums

Signs shall typically be fixed to:

1. fences / railings;
2. light poles;
3. vertical flat surfaces including platform faces, canopy support columns, walls, overpass structures; or
4. individual posts.

There shall be one station identification sign made of folded aluminium or an approved polycarbonate equivalent located on each platform. This sign shall be fixed onto the shelter structure so that it is readable from the relevant platform.

8.5.2. Sign Mounting Heights

The sign mounting height is the distance from the underside of any signs to the finished floor level. Table 8.5.2 indicates the minimum mounting height according to the sign functions / locations.

1. *Table 8.5.2 – Minimum Sign Mounting Heights*

FUNCTION / LOCATION	MINIMUM HEIGHT (MM)
Flush against a vertical flat surface e.g. a wall, canopy support columns, overpass structure	1400 – 1600
Temporarily obscured e.g. behind regular crowds and flush against a vertical flat surface	2000
Areas accessible by pedestrians within public areas	2400
Areas non trafficable or not accessible by pedestrians (where site conditions dictate e.g. on an embankment)	1500

8.5.3. Posts

Sign posts shall be circular hollow sections and shall be in accordance with Part RD-LM-S2 Supply of Signs.

A post shall not protrude above the top edge of a sign. Sign supports shall be placed within 1° of vertical. The posts shall be installed in accordance with Part RD-LM-C4 Sign Installation.

The post shall have a minimum 30% luminance contrast to the surroundings in both daylight and night conditions to assist patrons with vision impairments.

8.5.4. Footings

Sign post footings shall be designed in accordance with Part RD-LM-C4 Sign Installation. All sign posts footing shall be recessed flushed with the surrounding surface and fixings shall be countersunk.

8.5.5. Sign Fixings

Fixing mechanisms for the various fixing mediums shall include:

2. *Table 9.5.5 – Sign Fixings Matrix*

FIXING MEDIUMS / FIXING	FENCES / RAILINGS	LIGHT POLES	VERTICAL FLAT SURFACES	INDIVIDUAL POSTS	LETTERING
Vandal Resistant Screws	✓		✓		
Vandal Resistant Bolts / Tek Screws	✓		✓	✓	
Rivets	✓		✓	✓	
Stainless Steel Banding	✓	✓			
Channel Supports (Unistrut)	✓	✓		✓	
Silicone Adhesive			✓		
Acrylic Foam Tapes			✓		
Wire	Existing chain mesh fences ONLY				
Vinyl Lettering					✓

All steel fixing mechanisms except stainless steel shall be galvanized to 125 g/m^2 in accordance with AS/NZS 4680.

The following requirements shall apply for each fixing mechanism:

1. <u>Bolts / Screws:</u>
    a. the thread of the bolt shall protrude no less than 5 mm beyond the nut and no more than 12 mm beyond the nut;
    b. the bolts or screws shall be galvanized to a minimum of 125g/m^2 in accordance with AS/NZS 4680;
    c. all screw and bolt fittings shall be anti-vandal type to prevent tampering; and
    d. self-tapping screws shall be used where possible.

2. Rivets:

   Fixing of rivets shall be in accordance with Part RD-LM-S2 Supply of Signs.

3. Stainless Steel Banding:

   Signs attached to street furniture by means of banding shall not damage the support asset.

4. Channel Supports:

   The spacing of signs supported by two channel supports shall be 0.6 times the width of the sign between the supports.

5. Silicone Adhesive and Double Coated Acrylic Foam Tapes:

   Signs which are to be attached to a wall or other suitably flat surface can be fixed using a quick drying industrial grade clear or translucent silicone adhesive that is highly resistant to ultraviolet light and environmental elements.

   Foam tapes shall be double coated, medium firm, acrylic pressure sensitive adhesives that have high initial adhesion, good shear holding power and a demonstrated long-term holding strength.

   Adhesives and tapes shall also be capable of withstanding high or low ambient temperatures found in the Adelaide region.

6. Base Plates:

   Base Plate assemblies which form part of the sign may be used to affix sign posts directly onto platforms and other appropriate concrete surfaces.

   The base plate shall be designed to minimize both vertical and horizontal protrusions which may cause a trip hazard. The thread of the bolt shall protrude no less than 4 mm and no more than 6 mm beyond the nut. The overall vertical height shall be no more than 18 mm above the concrete footing.

   The base plate shall have a minimum 30% luminance contrast, similar to the requirement for the posts, vide Clause 8.5.3 Posts, to the surroundings in both daylight and night conditions to assist passengers with vision impairments.

9. Sign Designs and Placement

9.1. General

Signage to be provided in station precincts is detailed in the table below:

3. *Table 10.1 – Station Signage Requirements*

SIGN TYPE	DESCRIPTION	EXAMPLE APPLICATIONS

Regulatory	Enforceable messages and Traffic Control Devices	“Stop”, “Give Way”, “No Entry”, Bus Lanes, Bicycle Lanes
Warning	Alerts to dangers, hazards and points of conflicts	“No Trespassing”, Stand Behind the White Line”, “Do Not Cross the Tracks”, “Look Both Ways for Trains”
Guide	Assists navigation to accesses and facilities	Wayfinding signs identifying Primary Access Path and location of facilities including buses, lift and stairs
Information	Facility specific information	Station identification, platform numbers, “Declared Area”, CCTV surveillance, Exit, toilet facility, lift, voice annunciator, Emergency Help Phone, Metropolitan Quad Frames (bus stops)

9.2. Sign Locations

Signs shall be provided to enable all user groups to safely navigate their way to and from the main platform access points via:

1. bus / rail interchange areas;
2. bus stops – if located on an adjacent or nearby road that services passengers at the station;
3. station parking facilities;
4. kiss ‘n’ go pick up / drop off points;
5. maze crossings; or
6. the local road and pedestrian network

The sign details can be found in DIT Non Operational Signage Drawing Register. The quantity to be provided and typical locations within the station precinct can be found in drawings CS1-DRG-361813, CS1-DRG-361814, CS1-DRG-361815 and S7071 sheet 10. For pedestrian crossings, see drawings CS4-DRG-350290 to CS4-DRG-350293.

Sign posts shall not be located within the primary access path, other paths or clear circulation zones, vide AR-PW-PM-SPE-00129003 Station Platforms.

The number of signs shall be limited to the minimum number consistent with this specification. Installation of superfluous signs shall be avoided.

9.2.1. Sight Lines

Signs shall be located so that their message is clearly visible to all passengers and pedestrians for whom the message is intended. Signs shall not be installed in a location where they will:

1. obstruct sight lines of train drivers or the public,
2. obstruct other traffic or road users (including pedestrians);
3. obscure, or be obscured by, other signs;
4. be obscured by vegetation of landscaping; or
5. introduce or pose a road safety hazard to road users, including errant vehicles.

9.2.2. Non DIT Property

Where there is a requirement for a sign to be placed on land not in the ownership / management of DIT, written consent from the relevant land owner(s) for installation and subsequent access permissions (for maintenance) shall be obtained.

9.2.3. ARTC

Where ARTC tracks are adjacent to the station precinct, no signs shall be installed on ARTC infrastructure or land including mazes.

9.3. Standard Signs

Standard signs for installation within station precincts include:

1. standard station signs as specified inDIT Non Operational Signage Drawing Register;
2. standard traffic control devices in accordance with AS 1742 and DIT's Code of Technical Requirements for the Legal Use of Traffic Control Devices; and
3. "No smoking" signs in accordance with AS 1319

In accordance with the Tobacco and E-Cigarette Products Act 1997, smoking is banned under all covered public transport waiting areas and other areas used to board or alight form public transport that are covered by a roof. No smoking signs shall be provided at all train stations located on the station shelter structure.

9.4. Non Standard Signs

The design for any non-standard signs that are required or proposed shall be approved by the Facilities Engineering Lead.

9.5. Sign Designs

Station signage shall be provided in accordance with drawings CS1-DRG-361813, CS1-DRG-361814, CS1-DRG-361815, CS1-DRG-361816 and S7071 sheet 10.

9.5.1. Station Name Signage

The name of the station shall be depicted on the platform(s) as follows:

1. Standard Amenity Station – folded aluminium sign backing with white matte vinyl lettering along the length of the shelter structure and individual station identification signs on light poles either side of the shelter; and
2. Enhanced Amenity Station – folded aluminium sign backing with white matte vinyl lettering along the length of the shelter structure.

9.5.2. Lettering

The station name shall be white matte vinyl lettering in sentence case using FHWA Series D2000 font in accordance with AS 1743. Each word shall begin with a 150 mm high capital first letter. The lettering shall be placed 300 mm from the left hand side of each sign section and located centrally on the vertical plane of 340 mm deep sign unit.

9.5.3. Colour

The colour of the folded station identification sign backing and individual station identification signs shall be the same as the line branding colours as specified in Table 9.5.3.

4. *Table 9.5.3– Line Brand Colours*

RAIL LINE	COLOUR
Belair	Green – PMS 360c
Gawler	Red – PMS 180c
Grange	Blue – PMS 285c
Outer Harbour	Blue – PMS 285c
Seaford	Orange – PMS 1575c
Tonsley	Orange – PMS 1575c

9.5.4. Folded Station Identification Sign Backing

The folded station identification sign backing shall be aluminium or approved polycarbonate equivalent and shall be installed in one continuous length for the extent of the shelter(s) in accordance with drawings CS1-DRG-361816 and S7071 sheet 22.

The white matte vinyl lettering adhered to the station identification sign backing shall comply with the following:

1. train on track logo (CS1-DRG-361816 sign #3017) – all stations and every bay;
2. station name and platform number (CS1-DRG-361816 sign #3013-1) – all stations and every bay;
3. line direction (CS1-DRG-361816 sign #3001-1) – all stations and every second bay;
4. buses – with direction – (see Drawing CS4-DRG-352562) – Enhanced stations and every second bay where buses are not in close proximity (or obvious location) to platform; and
5. exit – with direction – (see Drawing CS4-DRG-352563) Enhanced stations and every second bay where exit is not in close proximity (or obvious location) to platform.

The folded station identification sign backing shall be designed so as to minimise roosting opportunities for vermin. The folded sign shall have a removable cover directly over any parts of the folded sign not fixed directly on to the shelter structure, so as to minimise roosting opportunities for vermin and prevent vandalism. This cover shall be fixed to the folded sign with Tek screws or approved equivalent so that the cover can be easily removed for maintenance and access to cables and lights located within the sign.

9.5.5. Line Direction

The line direction on the folded sign backing under the shelter shall be in accordance with:

1. the line in which the station is located; and
2. the direction the train is travelling.

The line direction to be used on the folded sign backing on down platforms include:

1. “Seaford”;
2. “Gawler” – for all stations on the Up (Adelaide) side of Gawler;
3. “Gawler Central” – for Gawler and Gawler Oval;
4. “Belair”;
5. “Outer Harbour”;
6. “Grange”; and
7. “Tonsley”.

The line direction to be used on the folded sign backing on up platforms shall be “Adelaide”.

9.5.6. Station Identification Signage

The station identification signs (see Drawing CS1-DRG-352549) shall be provided at Standard Amenity Stations, on each platform, approximately equidistant from the end of the platform and the end of the shelter structure as follows:

1. attached to two light poles, on the approach side of the shelter; and
2. attached to one light pole, on the departure side of the shelter.

9.5.7. Platform Identification Signage

Platform identification signs, displaying the platform number shall be installed on the approach to the platform each platform and overpass structure. Refer Drawing No. S7071, sheet 10 for location guidance.

9.5.8. Declared Stations

Declared Area signs shall only be provided at Declared Stations in accordance with drawing CS1-DRG-361816 and Appendix 129010.1 Declared Stations.

9.5.9. Emergency Exit Signage

Emergency Exit signs shall be provided in accordance with AS/NZS 2293, the National Construction Code (NCC) and in accordance with drawing CS1-DRG-361816

Enhanced Amenity stations which have a full (enclosed) shelter structure and have individual or limited points of access along the platform shall have Emergency Exit Signage (including battery backup) provided on the platform(s).

Open platforms that do not have individual points of access do not require Emergency Exit signage.

Emergency Exit signage for an overpass shall direct passengers to the stairs, ramps of any other alternative designates emergency access point. The signs shall not direct passengers to the lifts and shall advise not to use lifts during emergency.

9.5.10. Facility Signage

Information signage shall be provided to inform passengers of the facilities at stations including lifts, stairs, toilet facilities, voice annunciators and emergency help phones in accordance with drawing CS1-DRG-361816.

Where these facilities and other facilities such as bicycle parking facilities are not clearly visible to passengers from the primary access path and/or platform, guide signs (with arrows) may be required.

These guide and information signs shall also include Braille for people with vision impairment.

9.5.11. Bicycle Facilities

The contractor shall provide signage for bicycle facilities including cycle lanes / paths in accordance with AS 1742.9 and DIT Operational Instruction 9.2.

9.5.12. Railway Level Crossings

Railway Level crossing signage shall be provided in accordance with DIT Pavement and Marking Manual and AS 1742.7: Manual of Uniform Traffic Control Devices – Railway Crossings.

10. Design Requirements – Pavement Marking

10.1. General

Pavement Markings and paint shall be provided in accordance with the DPMM Clause 2.1.2 Messages & Symbols and 2.1.7 Transverse lines, AS 1742, AS/NZS 2890.1 and AS 4049.3 where no other information is available.

Refer to Clause 7 “Traffic Control Devices” of this standard for details on Traffic Control Devices and Traffic Control Layout Standards for pavement markings.

10.2. Application Details

10.2.1. Paint Type

All pavement marking paint in the station precinct shall be self-cleaning waterborne road marking paint, applied in accordance with AS 4049.3. Other types of paint shall be approved by the Facilities Engineering Lead.

The pavement marking paint shall comply with the non-slip characteristics in accordance with AS 1428, AS 4586 and HB 197. All surface materials shall be classified as “R10” or “R11” resistant, as defined in Table 5 of AS 4586. This shall be read in conjunction with HB 197.

The application of pavement marking paint shall be in accordance with Part RD-LM-S1 Materials for Pavement Marking and Part RD-LM-C1 Application of Pavement Marking.

Paint and finish type for shelter columns shall be in accordance with AR-PW-PM-SPE-00129005 Shelters.

10.2.2. Colour and Luminance

The colour of the paint shall comply with Table 11.2.2

5. *Table 11.2.2 – Paint Colour and Luminance*

USE	COLOUR	AS 2700S REFERENCE	LUMINANCE FACTOR (%) *
Paint	White	N14 "White"	> 80
Paint	Yellow	Y14 "Golden Yellow"	45 – 50
Paint	Blue	B21 "Ultramarine"	12 – 15
Cold applied plastic	Red	R13 "Signal Red"	13 - 17

* Luminance factor when measured in accordance with AS 4049.3

10.3. Pavement Marking Locations

Pavement markings shall be provided to delineate and identify the following:

1. platform edge hazard line;
2. platform 'wait behind' line;
3. platform "stand behind the white line" advisory warning;
4. accessible boarding indicator patch;
5. maze 'wait behind' lines (passive control only);
6. maze yellow indicator lines;
7. car parking spaces;
8. disability parking;
9. motor cycle spaces;
10. restricted access / parking areas;
11. pedestrian kerb ramp access (off street);
12. dedicated bus lanes:
13. cycle lanes; and
14. yellow box markings at level crossings.

10.4. Provision of Pavement Marking

The minimum pavement marking that is required to be installed prior to any area in the station precinct being opened to the public shall be in accordance with Station Master Spec RW-STS-D1.

10.4.1. Platforms

The platform edge hazard line, platform 'stand behind' line and accessible boarding indicator patch shall be provided in accordance with the DPMM and Drawings CS1-DRG-361819, CS1-DRG-361820, and CS1-DRG-361821.

The advisory warning "STAND BEHIND THE WHITE LINE" shall be located behind the white 'stand behind' line in accordance with CS1-DOC-001196 Stand Behind the White Line – Engineering Instruction.

The accessible boarding indicator patch shall be painted on the platform surface immediately out from the designated accessible waiting area, under the platform shelter and directly behind the white Platform 'stand behind' line. The wheelchair symbol shall face the direction of the oncoming train and shall be in accordance with DPMM. Refer to drawings CS1-DRG-361819, CS1-DRG-361820, and CS1-DRG-361821 for positioning and orientation, and document CS1-DOC-000883 Design Requirements for Platform Stopping Markers for Rail Cars.

10.4.2. Mazes

Maze 'stand behind' lines and yellow indicator lines shall be provided in accordance with the following drawings:

- CS4-DRG-350290 Passive Pedestrian Crossing – Single or Multiple tracks – Signage & Pavement Marking Layout;
- CS4-DRG-350291 Passive Pedestrian Crossing – Unidirectional Track – Signage & Pavement Marking;
- CS4-DRG-350292 Passive Pedestrian Crossing – Adjacent Level Crossing – Signage & Pavement Marking Layout; and
- CS4-DRG-350293 Active Control / Autogates – Signage & Pavement Marking Layout.

10.4.3. Bus Only Areas

Bus Only Areas shall be coloured red in accordance with Drawing No. CS1-DRG-361815 and shall be in accordance with the DPMM.

1. Bus Lane Colour

   The red colouring within the bus lane shall be provided using product which:

   a. conforms to the performance requirements set out in AS 4049.4 for a L5, SK1, SL2, C5 product;

   b. is performance warranted for a period of not less than 5 years.

   Bus lane colour treatments shall be applied in accordance with the manufacturer's recommendations, by a contractor approved by the manufacturer.

2. "Bus Only" Lettering

   Products used for the "BUS ONLY" lettering shall be compatible with the bus lane colour substrate and also be performance warranted for a period of not less than five years. The lettering shall maintain a skid resistance of > 45BPN for the life of the lettering.

10.4.4. Parking

Car parking and motorcycle spaces shall be marked using white continuous lines 100 mm wide to both long sides of the space in accordance with AS/NZS 2890.1 and DPMM.

The disability car parking spaces shall be marked using yellow continuous lines 100 mm wide to all side of the space excepting any side delineated by a

kerb, barrier or wall and have a painted one metre blue square with the white international symbol of access located within the designated bay as per DPMM and AS/NZS 2890.6.

The shared zone adjacent to the disability car parking, where there are more than one accessible parks, shall be marked in yellow diagonals in accordance with DPMM and shall have quartz applied in accordance with Part RD-LM-S1 Materials for Pavement Marking.

The pedestrian kerb ramp access areas shall have quartz applied in accordance with Part RD-LM-S1 Materials for Pavement Marking.

Non parking areas throughout the station shall be denoted by a continuous yellow no-stopping line which shall be 100 mm wide and placed not less than 150 mm from the kerb face and parallel to the edge of the roadway.

10.4.5. Bicycle Facilities

Where cycle lanes are provided they shall be clearly marked in accordance with DIT Operational Instruction 9.2.

10.4.6. Railway Level Crossings

Railway Level Crossing pavement marking shall be provided in accordance with DIT Pavement Marking Manual and AS 1742.7.

Yellow box marking at a road / rail level crossing shall only be provided when warranted in accordance with the DPMM and AS 1742.7.

When required the yellow box markings shall be marked in accordance with the DPMM. When repainting existing box markings the existing lines shall be repainted.

10.4.7. Other Pavement Markings

Where other road markings are to be included in a station design, they shall be specified and designed in accordance with the DPMM and AS 1742.

APPENDIX 129010.1

Signage – Declared Stations

Belair
Blackwood
Brighton
Broadmeadows
Eden Hills
Elizabeth
Ethelton
Evanston
Gawler
Gawler Central
Glanville
Marion
Mitcham
Noarlunga Centre
North Haven
Ovingham
Salisbury
Smithfield
Taperoo
Woodville