Contents

Chapter 5 – Bus stop infrastructure

5.1 Introduction

5.1.1 Overview of the Bus Stop Infrastructure chapter

The Bus Stop Infrastructure chapter is a referenced component of the overarching *Public Transport Infrastructure Manual (PTIM)*. This *Bus Stop Infrastructure chapter* is to be used in conjunction with:

- ***PTIM, Background and application***, which establishes the rules for application of the entire Public Transport Infrastructure Manual
- ***PTIM, Planning and design***, which provides the overarching design guidelines and principles for public transport infrastructure across Queensland
- ***PTIM, Supporting access infrastructure***, which details the supporting access infrastructure required to support public transport stops, stations and related facilities
- ***PTIM, Branding, theming and signage***, which provides branding, theming and signage that should be used for identifying coherent public transport infrastructure throughout Queensland.

For information on further resources to support the planning and design of bus stops, please refer to the *PTIM, Reference materials and supporting information* chapter.

5.1.2 Purpose and objectives

The Bus stop infrastructure chapter will inform infrastructure design by providing a clear and consistent set of principles and guidelines for bus stops across the TransLink network.

It will ensure that a high standard of infrastructure is planned and delivered to meet the needs and objectives of the TransLink passenger transport system and passenger expectation. Ultimately, high-quality and consistent infrastructure will provide customers with a transport system that is coherent, functional and encourages passenger use.

The objectives of this chapter are to:

- ensure best practice infrastructure design is applied across the State
- outline the requirements for bus stop design
- detail requirements for compliance with relevant standards and regulations
- ensure the delivery of high-quality public transport infrastructure
- ensure the delivery of accessible infrastructure.

5.2 Application of the Bus Stop Infrastructure chapter

5.2.1 Intended audience

This chapter is intended for use by professionals in the transport planning and delivery industry. This generally involves, but is not limited to, designers, planners, engineers, architects and other professionals involved in the planning, design and delivery of public transport infrastructure in Queensland.

5.2.2 Application of this chapter

This chapter must be used in conjunction with overarching applications of the *PTIM*.

This chapter should be referred to before starting to plan new or upgrades to existing bus stops.

It details TransLink requirements for the planning and design of bus stop infrastructure across the TransLink network.

TransLink, in partnership with Local Government and in collaboration with relevant stakeholders and delivery partners, shall be consulted on the final design for new infrastructure and upgrade of existing facilities.

5.3 Principles of bus stop planning

5.3.1 What is a bus stop?

For the purposes of this chapter, a bus stop is defined as:

'a collector point for pedestrians along a public transport route that allows for boarding and alighting, that also includes a portion of the roadway for the stopping of a bus.'

A bus stop may include the following components:

- boarding point
- manoeuvring areas
- signs
- information
- tactile ground surface indicators (TGSIs)
- street furniture
- waiting areas
- allocated space
- access paths
- ramps
- surfaces
- handrails and grabrails
- stairs
- symbols
- lighting
- passing areas.

Not all components are included at all bus stops – a basic accessible bus stop may simply comprise a boarding point, signage and information (for example, hardstand including TGSI, J-pole, and timetable).

All bus stops must meet the minimum mandatory technical requirements outlined in the *Disability Standards for Accessible Public Transport 2002*, hereafter referred to as the *Transport Standards*. In addition, stops must also meet *Disability (Access to Premises—Buildings) Standards 2010* hereafter referred to as the *Premises Standards*, particularly where aspects of bus stop works requires building approval.

One aspect not listed but is consistent for all stops, is that a bus will need to park at the stop either on road or indented within a bay.

It is important that the design of infrastructure provided at bus stops is of a high quality and consistent standard so that passengers can access public transport conveniently. Additionally, the location of bus stops within the network is critical for passengers, bus operators, traffic management, fare zone boundaries and overall performance of the bus network.

While this chapter provides guidance on bus stop design standards, it is important to recognise that each bus stop site is unique with individual requirements and constraints to be taken into account.

5.3.2 Bus stop categories

The Department has established a hierarchy of transport facilities to assist with how public transport infrastructure sits within the network. Contact TransLink to assist in determining the hierarchy of facilities particular for bus stops as summarised by the four categories of bus stops according to patronage, location and key component requirements shown in Table 5.1.

Table 5.1:
Bus stop categories

Bus stop category	Description [1]	Generally located
Minimum boarding point	• Suburban, urban or rural sites with low customer demand (low/negligible boarding) • Generally outbound stops • Low frequency services • Can be used where likely patronage numbers are unknown	Constrained suburban sites Outbound stops Non urban areas
Regular stop	• Low density suburban or non-urban sites with low customer demand (low boarding) • Low frequency services	Suburban sites
Intermediate stop	• Suburban sites and near some attractors (e.g. commercial/retail uses) with moderate customer demand (moderate boarding) • Generally along main passenger transport corridors • Moderate frequency services	Main passenger transport corridors
Premium stop	• Sites near major attractors with high customer boarding demand • Corridors with high-frequency services • Used where there are interchange movements	Major attractors Interchanges Main passenger transport corridors

General minimum requirements for each stop type are outlined in the following sections. A detailed summary of the component requirements for each stop is in Table 5.9.

Should service changes occur, the stop type may need to be reviewed, triggering a bus stop upgrade in order to address changes to the bus stop function.

TransLink typical technical drawings for the bus stop types provide guidance detail on the elements of the bus stop layouts, which also address the requirements of the *Transport Standards* and are found in *Appendix 5-B* of this chapter.

[1] *The scale of patronage (low, medium, and high) can be determined on a regional basis with reference to the annual average boardings. Please refer to TransLink for guidance.*

5.3.3 Minimum boarding point

A minimum boarding point refers to a basic accessible bus stop, provided at locations with a low customer demand, or at outbound service stops (due to the majority of alighting occurring).

The minimum boarding point is typically installed in built-up suburban areas, or urban or rural sites of a low boarding customer demand. It should accord with the specifications prescribed under the *Transport Standards*, and include:

- Hardstand - Minimum Boarding point 2070 x 1540mm. TransLink's preferred minimum boarding point for manoeuvring, boarding and alighting sees a more generous hardstand of 2070 x 2070 mm
- Bus stop sign/marker (J-pole)
- Timetable information
- Tactile ground surface indicators (TGSI).

Reference should be made to the minimum level of performance of a basic bus stop given in Bus stop components section of this chapter.

Note that the installation of the minimum boarding point may be considered where new stops are installed as a result of a service change/improvement where likely patronage numbers are unknown, and where the site's context is such that significant levels of boarding are unlikely to occur.

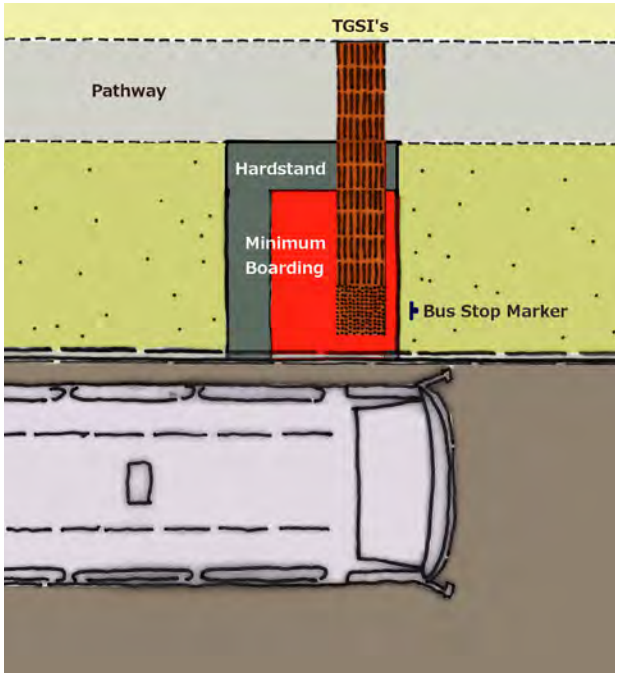


Figure 5.1 –
Minimum boarding point with existing kerb

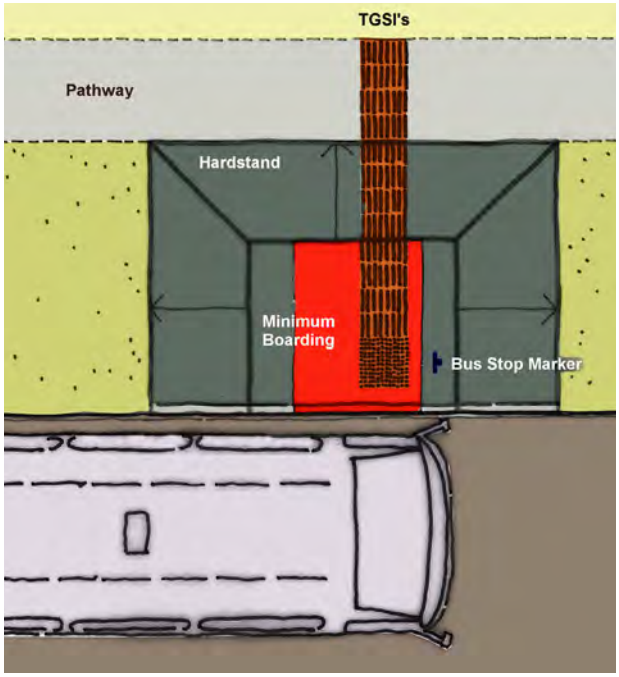


Figure 5.2 –
Minimum boarding point without existing kerb

5.3.4 Regular stop

Regular stops typically service locations with low customer demand.

These stops typically have low-frequency bus services, hence the need to provide an adequate passenger waiting area.

Generally located in low density suburban or non-urban areas, these stops will include a minimum level of supporting components, including:

- Hardstand (including Minimum Boarding Point)
- Bus stop sign/marker (J-pole)
- Timetable information
- Seating
- TGSI

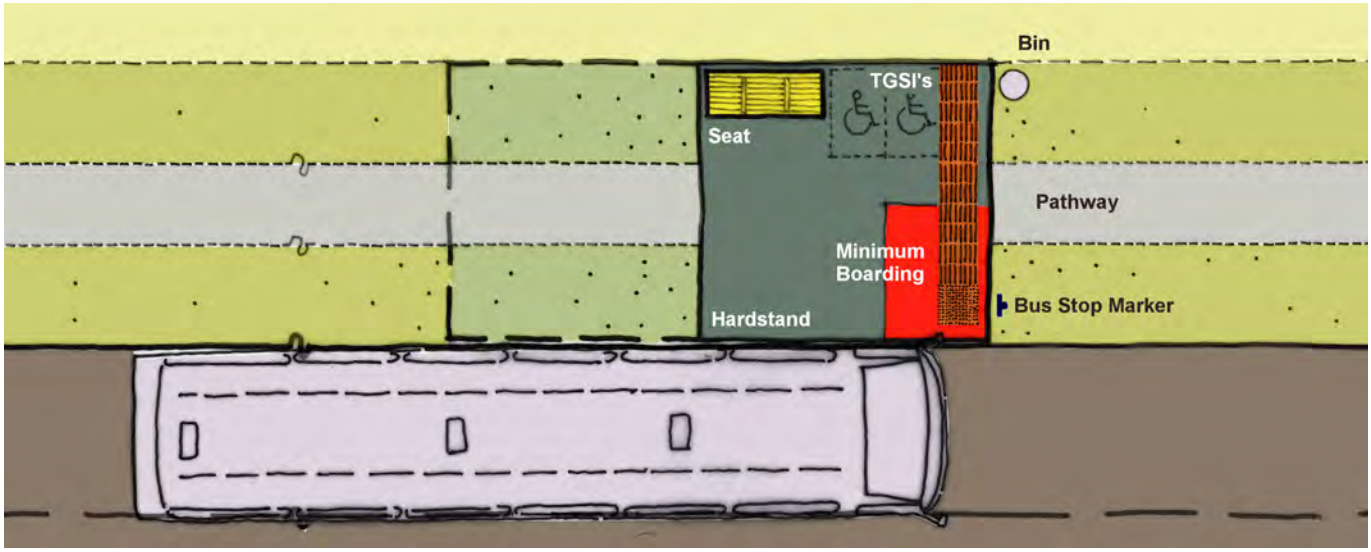


Figure 5.3 –
Regular stop

5.3.5 Intermediate stop

These stops may have moderate-frequency bus services and are predominantly located in suburban areas or along main passenger transport corridors.

Intermediate stops typically service locations where there is moderate customer demand.

These stops are also ideally located where adequate supporting access infrastructure is provided/available (for example, footpaths to/from adjacent land uses or to nearby attractors).

A moderate level of supporting components is considered for these stops, including:

- Hardstand (including Minimum Boarding Point)
- Bus stop sign/marker (J-pole)
- Timetable information
- Shelter with seating
- TGSI

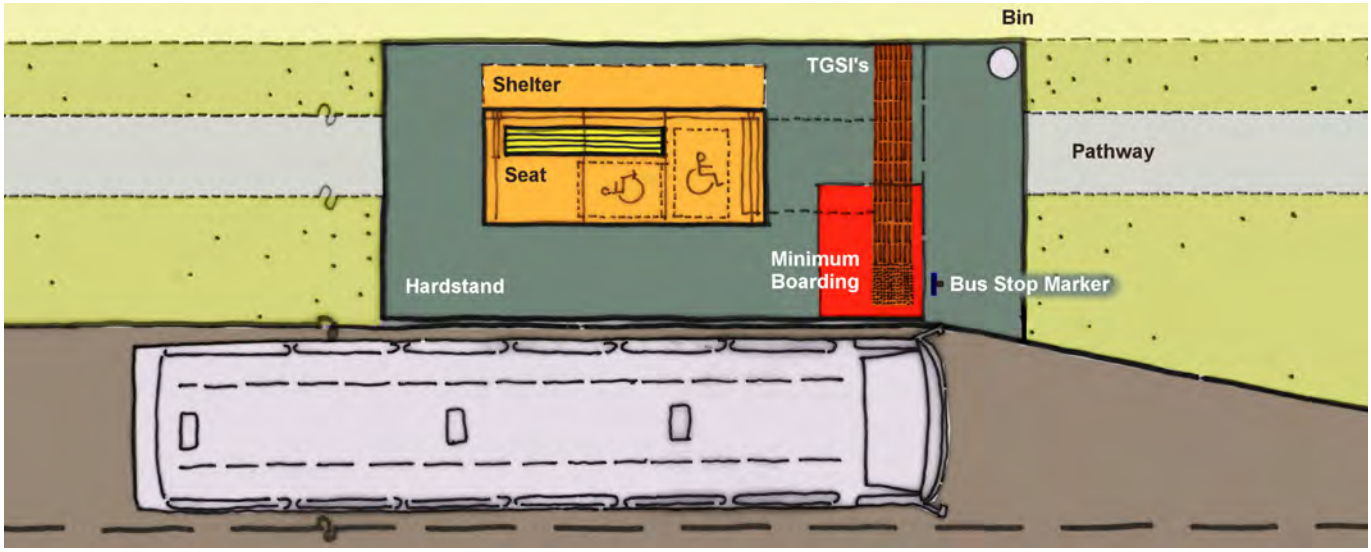


Figure 5.4 –
Intermediate stop

5.3.6 Premium stop

Premium stops are predominantly located at major attractions (such as shopping centres, places of employment, and near community or health facilities) and/or along corridors with high-frequency services. Consideration of appropriate integration with surrounding land uses is recommended where this category of bus stop is proposed. These stops require adequate supporting access infrastructure, specifically footpaths to/from adjacent land uses and to nearby attractors.

These stops can serve locations which have a high level of customer demand (boarding).

This type of stop should also be used where interchanging between services is expected to occur or where it is part of supporting access infrastructure such as park 'n' ride facilities *refer PTIM, Supporting access infrastructure*.

Premium stops can generally be supported by bus priority measures such as bus queue jumps, bus lanes or HOV lanes where these assist in supporting the high frequency service requirements within the corridor.

Premium Stops will contain a high level of supporting components, including:

- Hardstand (including minimum boarding point)
- Bus stop sign / marker (blade)
- Timetable information
- Shelter including seating
- TGSI
- Bin

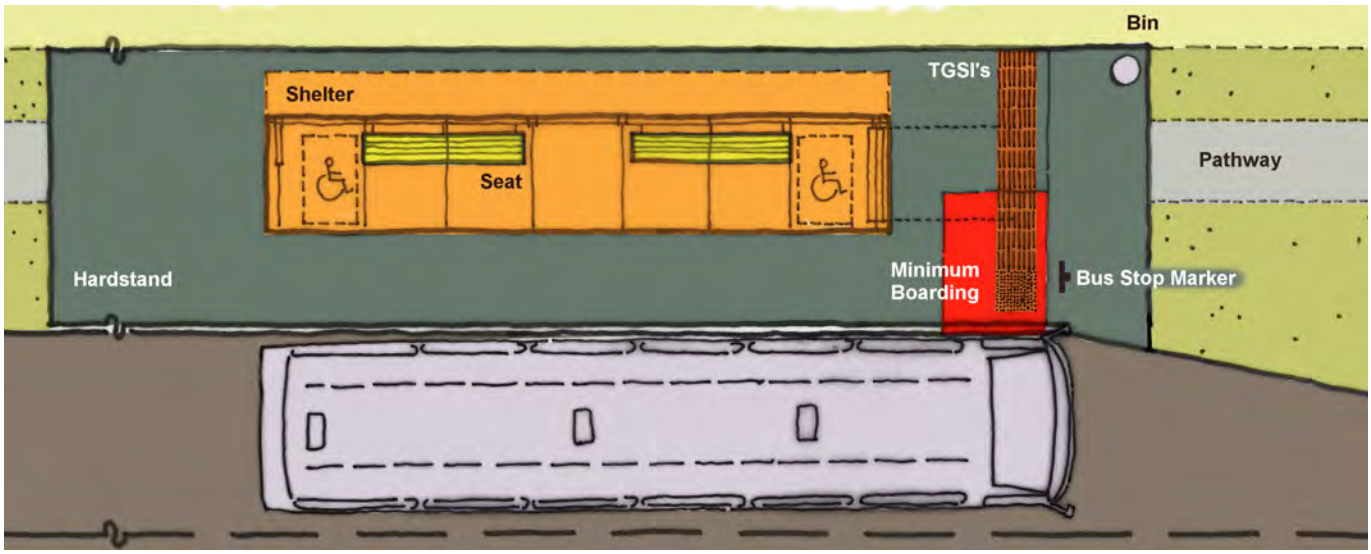


Figure 5.5 –
Premium stop

5.4 Bus stop planning and design process

The bus stop planning and design processes outlined in this section provide step-by step guides for:

- providing new bus stops
- relocation of existing bus stops to address service improvements
- upgrading existing bus stops to comply with the *Transport Standards* (and *Premises Standards* where relevant).

TransLink has developed these processes in consultation with local governments.

5.4.1 New bus stop

Figure 5.6 illustrates the steps for identifying an appropriate bus stop location for a new facility.

This process is likely to be followed in lieu of a service change/improvement or new route, or where the need to provide a bus stop 'pair' has been identified by either local government or TransLink.

5.4.2 Upgrading a bus stop

Figure 5.7 illustrates the steps for upgrading an existing bus stop facility currently in use on the network.

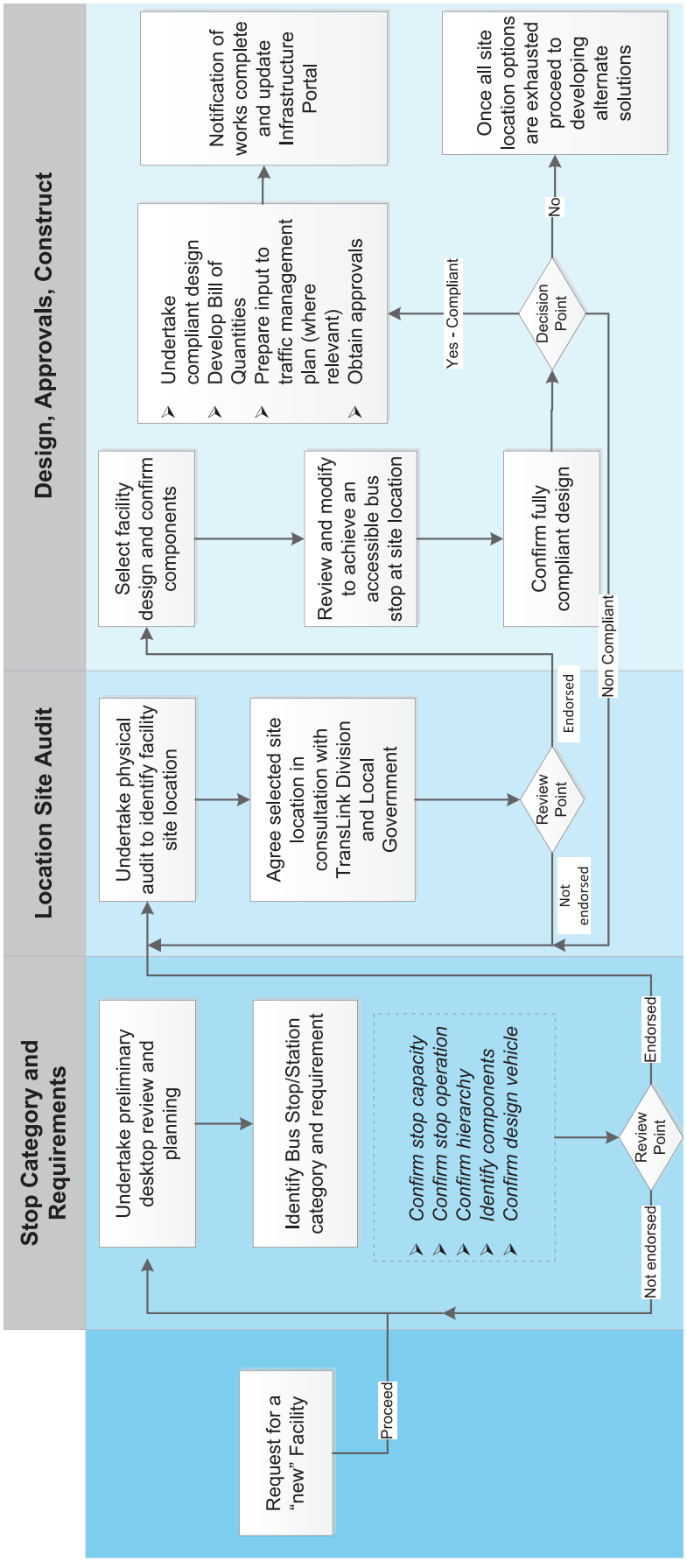
This guide recognises the need for the provider or operator to undertake a physical preliminary site assessment/audit of the bus stop facility to ascertain its current level of compliance in relation to the disability standards. This ensures the provider/operator has an appropriate level of understanding of the specific site characteristics, context and constraints. It also provides sufficient data for determining how to address the accessibility issues of the stop that is, either through equivalent access, temporary exemption, or meeting compliance to the maximum extent possible where a case for unjustifiable hardship is identified.

It is the provider's responsibility to determine the extent of the bus stop zone and passenger waiting area that is to be audited[1] and the appropriate qualification for undertaking compliance assessments and audits.

Contact TransLink for additional guidance on achieving compliance of bus stop infrastructure in the network.

[1] *An example of an appropriate extent of the bus stop zone could include an approach distance to the bus stop sign and an exit distance beyond it, as per the minimum outlined in the Queensland Road Rules for stopping prohibitions at a bus stop. A longer zone may need to be assessed subject to the hierarchy of stop being audited, length of waiting area and number of loading bays. TransLink in partnership with Local Government are available to assist with determining with the extent of the bus stop zone.*

Figure 5.6 –
TransLink flow chart 1 – New Facility



Request identified through:

1. Complaints
2. Infrastructure Portal
3. TransLink service upgrades
4. Local Government
5. Other agencies
6. Operators
7. Ministerial

TransLink to advise on the appropriate Infrastructure Hierarchy

Consider:

- Patronage/ridership
- Surrounding land use and locality context
- Service frequency
- Interchange/transfer movements

Review agreed bus stop category (refer to *Table 5.1*) with Local Government and suitability new facility is to be paired with an existing stop.

Investigate and fully document site audit opportunities and constraints.

Determine if a fully compliant stop as prescribed in the *Transport Standards* can be achieved specific to site characteristics.

Review site location, as required and modify to achieve accessibility.

Refer to this *PTIM* chapter for facility formation and relevant components. Application of Appendix 5-B for Technical Drawings and layouts by bus stop category.

Consider:

- Bus stop configuration
- Bus bay length
- Bus zone
- Bus components

Application of TransLink *Passenger Transport Guidelines on Achieving Infrastructure Accessibility*' to achieve a compliant stop within parameters of site location.

Decision point: Compliant facility?

- **Y**-Proceed
- **N**-Proceed to develop alternate Solutions' for a partial compliant facility as per TransLink flow chart 2 - Upgrades flowchart.

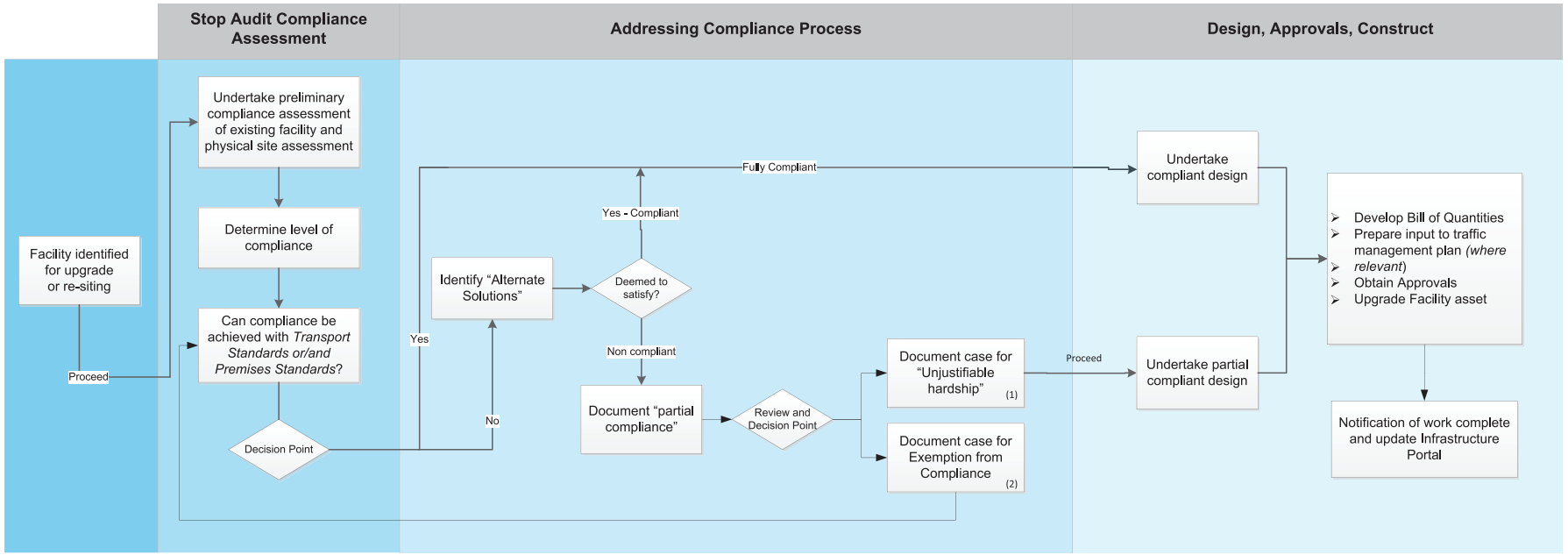


Figure 5.7 – *TransLink flow chart 2 - Upgraded facility*

Request identified through:

1. Complaints
2. Infrastructure Portal
3. Action plan program
4. Local Government
5. Other agencies
6. Operators
7. Ministerial

Preliminary compliance assessment undertaken if required. Provider to determine existing level of compliance.

Decision Point:

Assessability to achieve compliance within parameters of existing site conditions.

Refer to the Disability Standards with Regards to investigating '*Alternate Solutions*' options:

(a) Equivalent access including direct assistance Transport Standards s33.3, Premises Standards s3.2.

(b) Exemption from compliance Transport Standards s33A.1, Premises Standards s5.1.

(c) Unjustifiable Hardship Transport Standards s33.7, Premises Standards s4.1.

Application of TransLink '*Passenger Transport Guidelines on Achieving Infrastructure Accessibility*' guidelines and compliance framework.

Document '*Alternate Solutions*' and assess risk and suitability to Proceed. Refer to Local Government processes for decision making with regards to 'partial compliance'.

(1) Complete Addressing compliance of Passenger Transport Infrastructure in Queensland Form (liaise with TransLink Division).

(2) Refer to AHRC for making an application for Temporary Exemption under the DDA 1992 (Cth).

Undertake development of fully or partial compliant design of facility.

Obtain approvals and upgrade asset in accordance with design.


TRANSLink
Townsville City
bus hub
Queensland
Government

5.5 Bus stop environment

5.5.1 Integration with land use

A bus stop is not interpreted as simply a location for boarding and alighting a bus, but instead as the key connection between the surrounding land use and a public transport service (that is, as a point of interchange between a walk trip and a public transport trip).

The key considerations in the placement of a bus stop include:

- accessibility and equitable access
- proximity to surrounding services and facilities
- frequency or types of the bus service
- routing and future service expectations and network growth.

Reference should also be made to the Queensland Government's development assessment processes and systems.

In addition, other special stops such as hail 'n' ride, long distance coach and temporary facilities make up the network and facilitate access to public transport services across the community.

5.5.2 Accessibility and compliance

TransLink requires that the relevant standards and guidelines for disability access are followed, along with the engagement of relevant disability reference groups, where required.

The legislative requirements of the Commonwealth Disability Discrimination Act 1992 (DDA), sets out the responsibilities of the Department with regards to access to public transport, with the specifics and details given in the Disability Standards:

- *Disability Standards for Accessible Public Transport 2002 (Transport Standards)*
- *Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards).*

5.5.2.1 Application to bus stops

Providers and operators should generally refer to the *Transport Standards* for the planning and design of infrastructure, such as bus stops, where building approval does not apply.

Where a bus stop requires building approval (for example, provision of a bus stop shelter) the *Premises Standards* will apply to the bus stop. This is typically the case for a public transport interchange facility, or a bus stop that is provided as part of a larger building development.

Specifically, the *Premises Standards* applies to bus shelters at bus stops where the shelter is classed as either a:

- class 9b building, that is an assembly building, or
- class 10a building, that is a non-habitable building – a structure used to provide shelter.

The *Transport Standards*[2] and *Premises Standards*[3] specifically reference the *Australian Standards AS1428* 1, 2 and 4. The Australian Human Rights Commission (AHRC) Guidelines state that 'compliance with those referenced *Australian Standards* is compliance with the *Transport Standards*'.

[2] *s1.6 of the Transport Standards*

[3] *PartA3, sA3.1 Table 1 of the Premises Standards*

5.5.3 Operational considerations for the planning and design of bus stops

There are numerous issues that need to be considered when planning bus stops and their infrastructure.

Table 5.2 provides more detail on the key issues for consideration, and should be used as a checklist for the planning and design process.

Table 5.2:
Considerations for planning and designing bus stop infrastructure.

Factors influencing planning and design	What to consider
Catchment and spacing	• Stop spacing is ideally 400-800m in an urban environment (approx. 5-10 minute walk and average walking speed 5km/h). • Inner city and densely built up areas may warrant a spacing of less than 400 metres. • Express or high-frequency services may use greater than 800m spacing, similar to rail or busway station spacing. • In rural or less densely built-up areas, stop spacing will vary based on the need to maximise service coverage. • Quality and ease of access that is available through the street network (that is, permeability of the surrounding street network). • TransLink in consultation with the relevant stakeholders will determine the most appropriate locations for bus stops taking into account the present and future TransLink network requirements specific to a local government area and customer needs (that is, demographics, ridership types).

Factors influencing planning and design	What to consider
Location	• Ensure safe sightlines for vehicles, bus operators and passengers. Keep stops away from tight horizontal curves or vertical curves (road crests or sags) that create 'blind spots'. It is the responsibility of the provider to check and confirm sight lines are adequate and meet the relevant standards. • Ensure bus drivers and waiting passengers are clearly visible to each other. • Ensure buses can pull up safely on-road and have ease of manoeuvrability. In High Occupancy Vehicle (HOV) lanes, consider including indented bus bays. • Posted speed limit particularly for kerb side/on-road facilities. • Choose sites where there is sufficient pavement area for pedestrians to safely walk past the bus stop area (and shelter, if required). • Provide convenient boarding and alighting for passengers by locating stops: – close to community facilities and services that attract a high proportion of people with a disability – close to significant attractors (for example, shopping centres, commercial premises, places of employment, educational facilities) – close to other stops (and in some cases stations) to minimise walking if transferring between services. • Provide safe access for passengers by locating stops: – Close to dedicated pedestrian road crossings away from facilities with high parking turnover – away from dense foliage and other objects that hinder direct sightlines – in well-lit areas or where access to power for future lighting is possible. • Bus stops should be located in pairs so that boarding and alighting happens in close proximity, with the opposite stop clearly visible. • When locating mid-block, paired bus stops should ideally be staggered in a tail-to-tail arrangement with sufficient space between stops to ensure vehicles can pass and passengers can safely cross behind the buses at the stops. Where new infrastructure has the opportunity to do so, a reasonable attempt must be made to protect for any planned or upgraded infrastructure by local government or other state government agencies. Consideration should also be given to locations where an access path does not exist along the road/street where a bus stop is located. Discussion with local government should be undertaken on the appropriateness for customers to travel along the road carriageway (subject to the street environment and hierarchy) to access the bus stop boarding point. Provision of kerb ramps and safe crossing facilities may need to be identified to ensure the bus stop is accessible.

Factors influencing planning and design	What to consider
Intersections and pedestrian crossings	• It is preferable that a bus stop is located: – near existing pedestrian crossing facilities (for example, dropped kerbs, refuge islands, signals) – downstream of a pedestrian crossing facility – where there is minimal conflict with parking areas and other potential traffic hindrances – to provide sufficient sight distance so buses can safely re-enter/merge with the traffic lane. • Bus stops near intersections should: – generally be located on the far side of an intersecting street (to assist bus movements, reduce delays, and provide clearer sightlines of intersecting vehicles) – be located on approach to an intersection in situations where the stop will service through services and services turning at the intersection or where known future development may require a service change and in order to minimise re-siting of infrastructure – not be sited opposite to an intersection street (that is, at a T-intersection). • Locating a bus stop close to an intersection requires consideration on a case-by-case basis, particularly where a 'bus zone' is to be established. Frequency of services and dwell-time are of particular importance to ensure the stop's location causes the least interference with intersection operations. • Refer Table 5.3 Queensland Road Rules stopping prohibition.

Factors influencing planning and design	What to consider
Access	• Ideally, bus stop planning and design should be done in conjunction with planning for appropriate access infrastructure (that is, walking, cycling, and so on). See *PTIM, Supporting access infrastructure*. • When upgrading or re-siting existing stops, or providing new bus stop infrastructure, consideration should be given to: • **Pedestrian infrastructure** – interface of the stop with the wider pedestrian network (that is, consideration of desire-lines) – provision of appropriate pedestrian crossing facilities – kerb ramps – connection, quality and configuration – accessible path width, grade, continuity and alternative paths – need and placement of pedestrian infrastructure such as rest points, railings, street furniture – pedestrian walkway and waiting shade cover for sun and weather protection. • **Cycle Infrastructure** – interface of the stop with the wider cycle network (that is, consideration of cycle desire-lines) – need for dedicated or shared crossings – kerb ramps – appropriate connection, shared or dedicated provision, quality, storage space, width and configuration (wider kerb ramps are preferred when pedestrians and cyclists share crossings) – path/lane width, grade, continuity and alternatives – provision and/or placement of end-of-trip amenity components (for example, storage, water, other amenities) – connection to existing or planned shared or neighbouring Cycle amenities. Refer also to the TMR's *Road Planning and Design Manual, Technical Note 128: Selection and Design of Cycle Tracks* for guidance on the provision of cycle paths at bus stops.

Factors influencing planning and design	What to consider
Capacity	• Vehicle capacity is related to both the capacity of the individual loading areas and their design. • Consider both known and potential future numbers of bus services that are likely to serve the stop at any one time. • Bus dwell time and clearance time at the bus stop influences the stop loading area capacity and therefore the likely number of loading areas required. (Dwell time is proportional to the boarding and alighting time of customers, and is influenced by the type of fare payment.) • Nearby traffic signals can influence the number of buses into or out of a stop, and bus arrival profiles (that is, random or platoon). • When calculating the bus stop vehicle capacity of a bus stop, consult TransLink for appropriate assumptions. Where there are timetables for the operating strategy (existing or forecast), a 'clock-face' type approach to understanding how the frequency of services influence the amount of space required at a stop is suggested as the ideal methodology to assess capacity. Also consider referring to the Transit Capacity and Quality of Service Manual (3rd Edition) (TCQSM) for guidance.

Table 5.3:
Queensland Road Rules stopping prohibition

Minimum distances	Non-signalised intersection[4]	Signalised intersecton[4]	Non-signalised pedestrian crossing[5] (except at an intersection)	Signalised pedestrian crossing[6] (except at an intersection)	Children's crossing[7]
Far side	10m	20m	10m	3m	10m
Approach	10m	20m	20m	10m	20m

Refer to *Transport Operations (Road Use Management – Road Rules) Regulation 2009* for current details.

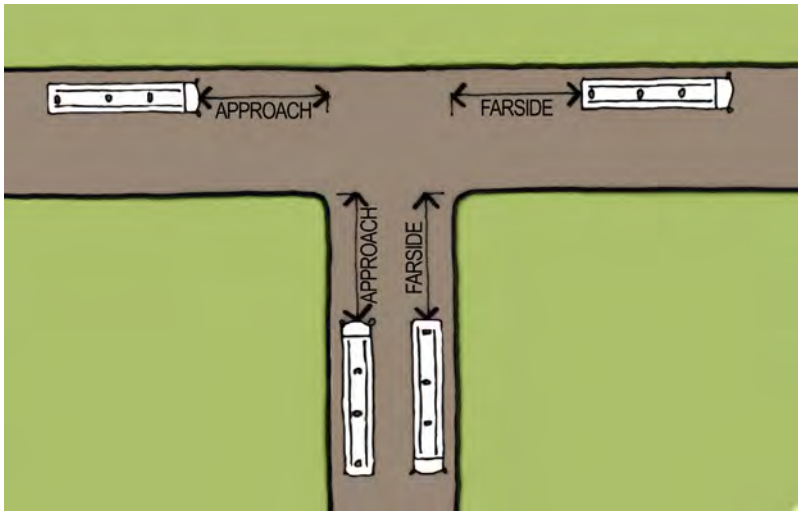


Figure 5.8 –
Signalised intersection

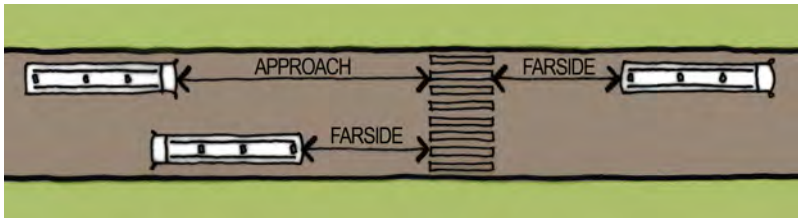


Figure 5.9 –
Non-signalised pedestrian crossing

4 *Queensland Road Rules Section 170 refers to both signalised and unsignalised intersection*

5 *Queensland Road Rules Section 172 refers to an un-signalised crossing such as a zebra crossing*

6 *Queensland Road Rules Section 173 and Section 174 refers to a midblock signalised intersection for pedestrians or bicycles respectively*

7 *Queensland Road Rules Section 171 refers to children crossing stopping prohibition distances. Refer to MUTCD Part 10, Figure 3 for a typical layout of a Children's crossing in Queensland.*

5.6 Bus stop formation

The bus stops' layout and technical drawings are designed to meet the requirements of all buses operating in the TransLink bus network and are to comply with all standards applicable to bus stop planning and design, in particular the *Transport Standards*.

5.6.1 Bus stop configuration

The appropriate configuration of bus stops is subject to site-specific requirements, operational constraints and local government requirements as the provider of the bus stop. In determining the location and appropriate bay configuration, the provider should consider:

- traffic speed
- traffic volume
- curvature of the road and sightlines
- adjoining land uses.

TransLink in partnership with Local government shall be consulted to assist in determining the most appropriate configuration.

Table 5.4 details the typical bus stop arrangements and TransLink's preference for their provision in the network.

Table 5.4:
Bus stop arrangements

Bus bay configuration	Description
Indented bus bay	• Will require sufficient pavement area for buses to stop safely and efficiently out of main traffic stream. • Will accommodate minimum of one bus for regular and intermediate stop types and two buses for premium stop type (subject to identified stop capacity requirements). • Requires buses to stop out of traffic stream. Acceptable gaps must be available in through-traffic stream to enable bus to re-enter. • May be appropriate at high-loading stops, or if the stop is used as a timing point or bus drive change-over point. • Length of bay tapers (for accelerating and braking) dependent on traffic speed (typically 60km/hr). Minimum 1:7 on approach, and minimum 1:5 on departure. Longer tapers may be required for higher traffic speed environments. • Bus bay width to be minimum 3m. • Typically considered for intermediate or premium stop types.
Kerbside bus bay	• Most common configuration. • Allows bus to conveniently pull up to stop (preferably out of main traffic stream). • Will accommodate minimum of one bus for regular and intermediate stop types and two buses for premium stop type (subject to identified stop capacity requirements). • Can be readily increased to address changing capacity of type of bus utilising stop. • Kerbside bay typically preferred for a regular bus stop type, and intermediate stop type.
Open bus bay	• Variant on the indented bus bay but is located at an intersection. • Allows buses to drive straight into or out of the stop. • Will accommodate minimum of one bus for regular and intermediate stop types and two buses for premium stop type. • Requires implementing a 'turn left only, buses excepted' lane at intersection. • This arrangement is site specific for all bus stop types. Liaison with the appropriate local road authority is recommended.

Bus bay configuration	Description
Kerb outstand[8]	• An alternative arrangement that may help provide sufficient width for boarding /alighting or to address adjacent parking abutting the bus stop. • Sees a built-out kerb line either the full or part length of bus accommodating both front and rear bus doors • Keeps bus in traffic stream. • Design to consider drainage, impact to cyclists. • Subject to local government requirements and standards.

[8] *Also known as a 'bus stop boarder', 'kerb outstand' or 'in-line bus stop'. For further details refer to: VicRoads' Bus stop guidelines 2006; Transport for London's Accessible Bus Stop design guidance 2006; or Auckland Regional Transport Authority's Bus Stop Infrastructure Design Guidelines 2009.*

The following should also be considered alongside the bus stop configuration for the site:

- If kerbside parking lanes are provided, there are few advantages to indented bays except in the case where public transport priority or HOV lane conditions are implemented
- Where on-road cycle lanes are required, refer to the current *Department of Transport and Main Roads' Road Planning and Design Manual*, *Technical Note 128: Selection and Design of Cycle Tracks* and/or the relevant local authority for guidance.

5.6.1.1 Kerb at stop

The *Transport Standards* Part 8.1(2) states that where a kerb is installed at a bus stop it must be at least 150mm higher than the road surface. This enables an operator to design its on-board ramps accordingly to ensure that the slope of the boarding ramp (that is, the interface between the bus stop infrastructure and the bus) does not exceed the maximum inclines noted in *Transport Standards* Part 6.4.

A kerb at a bus stop should therefore:

- allow for safe, efficient passenger set down and pick up
- meet the minimum *Transport Standards* height of 150mm
- be a barrier kerb (avoid semi-mountable kerb types).

5.6.2 Bus stop operation

The operation type influences the length of the bus stop zone/bay and the requirements of the bus zone and bus area. Bus stop operation types are described in Table 5.5.

Unless nose to tail operations have been specifically identified (that is, lead stop), independent stop configuration operations should be adopted for bus stop design purposes.

TransLink should be consulted on the preferred operation prior to commencing bus stop design.

Table 5.5:
Bus stop operation type

Bus Bay Operation	Description
Single bus	• Accommodate at least a single bus manoeuvring. • Typical for low or moderate frequency bus services.
Nose to tail/ platooning at lead stop	• Single boarding point for customers where buses platoon behind each other. • Typical for corridors with high-frequency services. • Minimum additional length per bus needs to be added for this type of manoeuvring to occur. • Dependent entry operation such that bus can exit behind another bus however can not pull in front or around a parked bus.
Independent stop	• Designed to address one or a pre-designated set of services. • Requires additional minimum length per bus to allow for efficient and safe independent manoeuvring.

5.6.3 Design vehicles for bus stops

The current fleet in service in the TransLink network varies by operator across the state. Subtle differences in fleet dimensions are likely and need to be considered during the design of accessible bus stops.

For design purposes, a standard rigid bus is typically 12.5 metres in length. Other buses in use include 14.5 metre long rigid buses and 18 metre articulated bus, and 12.5 metre double-decker buses. An approximate width allowance is 3 metres and height 3.5 metres (4.5 metres for double-decker).

Bus door locations must be kept free from all roadside infrastructure. Signposts, trees, tree-grates, planter boxes/landscaping, electrical poles/posts, and other street furniture must be at least 600mm from the kerb, along the length of the bus stop area.

Table 5.6 illustrates the estimated door position (metres from the front of the bus) for the different bus types. This can be used to determine the required length of hardstand, and position of other bus stop components to ensure accessible boarding and alighting of passengers.

Table 5.6:
Estimated bus door position

Typical bus and length	Estimated door position (metres)																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Rigid bus (12.5m)	■	■					■	■										
Rigid bus (14.5m)	■	■				■	■	■										
Articulated three door bus (18m)	■	■			■	■	■					■	■	■				
Rigid bus double-decker (12.5m)	■	■					■	■										

Source: Estimate based upon typical bus fleet dimensions provided by Brisbane City Council.

5.6.3.1 Bus stop length requirements

Both the design bus type and type of stop operation will influence the required bus stop length. For on-road bus stops, the length should be able to accommodate a standard or long rigid bus, or an articulated bus, and address adjacent parking abutting the bus stop so that a bus can pull up parallel to the kerb with a maximum distance of 200mm from the rear door to the kerb (ideally).

For indented stops, TransLink prefers a 1:7 approach taper and 1:5 departure taper. Other taper configurations can be considered on a site-specific basis, and should meet applicable standards or local government requirements. It should be noted that a reduction in approach or departure taper would increase the minimum required length of the indented bus stop.

Table 5.7 outlines bus bay length requirements for on-road (non-indented) and indented bus stops for a single bus allowance.

The following formula can be used to calculate an initial bus bay length when considering a multiple bus operation. Calculated lengths should be confirmed through undertaking a vehicular swept path assessment to take into consideration other site characteristics (for example, narrower adjacent lane widths).

Length of bus bay = L + (BL + a) x (n - 1)

Where:

- '*L*' is the bus bay length for a single bus
- '*BL*' is the length of bus
- '*a*' is the additional length for other bus stop operations
- '*n*' is the number of buses

Table 5.7:
Minimum bus stop length requirements

Typical bus type and length	On-road stop [9] (single bus allowance)	Indented stop [10] (single bus allowance)	Additional length for space between buses (multiple bus operation)
Rigid bus (12.5m)	Bus bay length : 25m (L) Departure length: 10m **Total: 35m**	Taper in: 21m (1:7) Bus bay length: 15m (L) Taper out: 15m (1:5) **Total: 51m**	Nose-to-tail: 5m (a) Independent: 12m (a)
Rigid bus (14.5m)	Bus bay length : 27m (L) Departure length: 10m **Total: 37m**	Taper in: 21m (1:7) Bus bay length: 17m (L) Taper out: 15m (1:5) **Total: 53m**	Nose-to-tail: 5m (a) Independent: 12m (a)
Articulated bus (18m)	Bus bay length: 30m (L) Departure length: 10m **Total: 40m**	Taper in: 21m (1:7) Bus bay length: 20m (L) Taper out: 15m (1:5) **Total: 56m**	Nose-to-tail: 5m (a) Independent: 12m (a)
Rigid bus double-decker (12.5m)	Bus bay length: 25m (L) Departure length: 10m **Total: 35m**	Taper in: 21m (1:7) Bus bay length: 15m (L) Taper out: 15m (1:5) **Total: 51m**	Nose-to-tail: 5m (a) Independent: 12m (a)

As noted in Table 5.7, additional length is required to accommodate multiple buses at the bus stop, either in nose-to-tail or independent operation.

Example:

Two 12.5m rigid buses using an independent on road stop configuration. Stop area for a 12.5m bus is 25m and additional length for independent operations is 12m. Therefore:

Length of bus bay =
25 + (12.5 + 12) x (2 – 1) = 49.5 metres.

9 *Queensland Road Rules (QRR) Section 183 and 195 set a minimum approach length of 20 metres and departure length of 10 metres, for on-road stops. However, TransLink's preferred length is 25 metres minimum for a 12.5m bus.*

10 *Refer to current Austroads and RPDM Guide to Road Design Part 3: Geometric Design, and TMR's Road Planning Design Manual: A Guide to Queensland Practice Chapter 20 for guidance for the requirements for partially or fully indented bus bays*

5.7 Bus stop components

This section details the components that need to be considered at bus stops within the TransLink network.

All building and construction components of stop design (for example, shelters) are to comply with relevant building codes and Australian Standard requirements.

TransLink should be consulted on infrastructure component inclusions for each bus stop.

Figure 5.10 illustrates the range of components to be considered in the planning and design of bus stops.

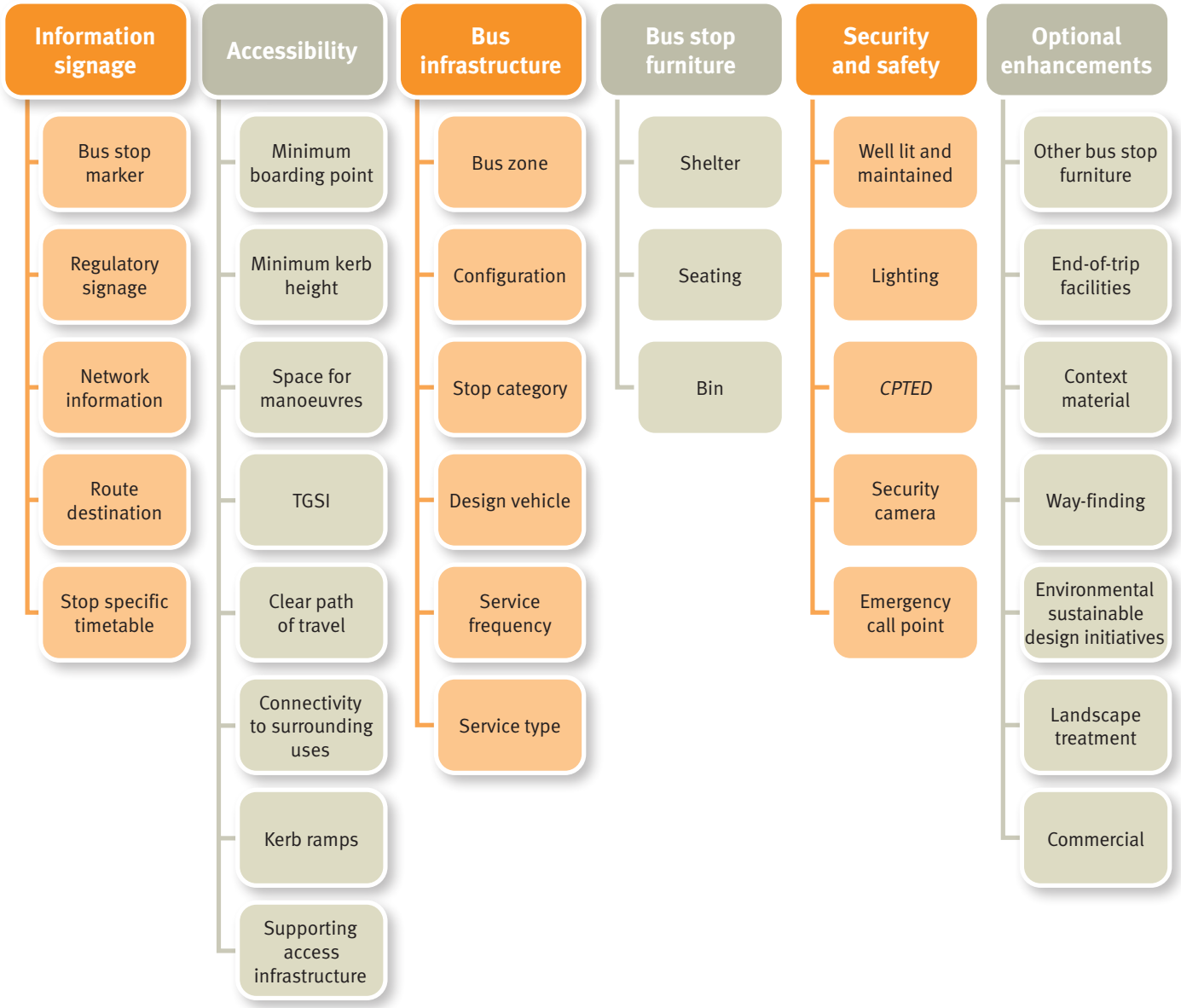


Figure 5.10 –
Key bus stop components

Required components will vary according to different bus stop types. These are detailed in Table 5.8 where:

- **M** is mandatory (component must be included, legislatively required)
- **P** is preferred (component will be included unless directed by the provider of the bus stop in response to site constraints)
- **S** is site-specific response (component may be required or desirable subject to specific stop function and/or site requirements)
- **O** is optional (component may be optional or applicable to specific regions across the state)
- **-** is not applicable (component does not apply to the stop type)

Table 5.8:
TransLink required components

Category	Stop Component	Min B. Point	Regular stop	Intermediate stop	Premium stop
Information					
Stop marker	J-Pole	M	M	M	-
	Blade	-	-	-	M
Regulatory sign and line-marking	Bus zone signs	S	S	P	M
	Marked bus zone	S	S	P	M
Network information	Network and locality map	-	-	S	M
Stop-specific information	Stop-specific timetable	P	P	M	M
	Routes serving the stop	P	P	M	M
	Route destination/diagram	P	P	M	M
	Real time passenger information	-	S	S	P
Accessibility					
Access	Minimum boarding point, including TGSIs	M	M	M	M
	Hardstand area	M	M	M	M
	Minimum kerb height 150mm	M	M	M	M
	Barrier type kerb	P	P	P	P
	Accessible clear path of travel	M	M	M	M
Local connectivity	Connecting footpath to/from bus stop (with dropped kerbs where required)	P	P	P	M
	Kerb ramp	S	S	S	S
	Pedestrian crossing /refuge	S	S	P	P

Category	Stop Component	Min B. Point	Regular stop	Intermediate stop	Premium stop
Supporting access facilities	Cycle parking/storage	-	S	S	S
	Kiss 'n' ride	-	-	S	S
	Park 'n' ride	-	-	S	S
Bus stop furniture					
	Shelter *(See Note 1)*	-	-	M	M
	Seating	-	S	M	M
	Rubbish bin	-	S	P	M
Security and safety					
	Well-lit or nearby street lighting	P	P	P	M
	Lighting in shelter	-	-	P	P
	CPTED principles	M	M	M	M
	Security cameras	-	-	-	S
	Emergency call points	-	-	-	S
Optional enhancements					
Other bus stop furniture	Drinking fountain	-	-	S	S
	Fare machine (AVVM) (and/or future provision for)	-	-	-	O
	Shopping trolley bay(s) / storage	-	-	S	S
Context material	Public art	-	-	S	S
	Historical material	-	-	S	S
Other way-finding information	Braille tactile signage	-	-	S	S
	Way-finding signage	-	-	S	S
	Public address system and hearing augmentation	-	-	-	S
Commercial	Vending Machine (third party)	-	-	-	O
	Advertising panel	-	-	-	S

Category	Stop Component	Min B. Point	Regular stop	Intermediate stop	Premium stop
Environmental sustainable design initiatives	• Sensors on light fittings, low energy LED fittings	-	-	S	S
	• Solar panels/photovoltaic cells on shelter roof and/ or bus stop marker	-	-	S	S
Landscape treatment	• Approach side (location)	S	S	S	S
	• Departure side (location)	S	S	S	S
	• Feature landscaping	-	O	O	O

Note 1 – Refer to Table 5.11, for typical bus stop type and shelter selection.

5.7.1 Component selection

Table 5.9 provides an overview of TransLink requirements in choosing bus stop components. All stop components must comply with relevant *Disability* and *Australian Standards*.

A detailed list of the standards and other references applicable to the components listed in Table 5.9 can be found in the *PTIM, Information references and resources*.

Table 5.9:
TransLink requirements for bus stop components

Element	Consideration
Stop signage/ stop marker	• The bus stop identification marker can be a J-pole or blade sign. • The stop marker: – directs passengers to where they should wait to board the bus – guides the bus driver to the optimal stop position for passengers to board and alight safely. • The bus stop marker provides the control point to set out the layout of the rest of the bus stop (for example, customer waiting area). Its position should: – line up with the front of the bus when the vehicle is at the stop and ready for boarding and alighting – preferably not be directly adjacent to the front door of a property (to maintain privacy for local residents) – preferably not cause the bus to block a property's driveway when stopped for boarding and alighting – avoid placing the bus stop zone over stormwater drains and pits – be close to street lighting. • Stop marker must comply with TransLink's signage guidelines (refer to the *PTIM, Branding, theming and signage*). It should provide highly-visible and clear information about services including (where applicable): – timetables clearly showing site-specific departure times with destination names or frequency of service(s) – route number(s) of services using the stop or station – network map identifying all services using the stop or station – stop name and number – contact details for public transport network information – fare zone number where public transport is located – unique stop identifier for bus stop location purposes. • Where appropriate to the bus stop type and site context, the stop signage should provide directional information regarding public transport and supporting components, including: – an information point explaining travel options (for example, where services go and the type of services available—where appropriate, this can include alternative transport such as taxis) – a locality map to help orientate the user – visible way-finding signage to direct customers to other public transport services and other points of interest (for example, ticketing, toilets, other end-of-trip facilities) – way-finding signage for the surrounding local area (that is, adjacent streets and places of interest) – the direction of travel for services using the stop or station.

Element	Consideration
Bus zones	• The bus stop zone will be: – formalised with barrier kerb and channelling (where possible) – kept clear of kerb ramps and kerb openings – kept clear of electricity poles and electricity pits – kept clear of tree foliage (minimum height of 4.5 metres) – kept clear of all infrastructure and plantings for at least 600 millimetres from the kerb – located where there is good drainage to prevent pooling of water or other low lying ground problems – located to avoid stormwater drains and pits, and drains where this could become an obstacle for passengers boarding the bus – located away from driveways to avoid buses restricting private property accesses • A bus zone is the length of road to which a bus zone sign applies. • Use bus zone signs where more than one bus may be required to use the bus stop, or where other competing road requirements exist (such as on-street parking). • A bus stop zone should not be less than 30 metres, and typically be located within 20 metres approaching the bus stop marker, and 10 metres on the far side of the stop marker[11]. However, TransLink's preferred approach length is 25 metres for a 12.5m bus. • The approach length should reflect the design bus utilising the stop and the proposed type of operation. • Refer to bus stop length requirements in this chapter in Table 5.7.

[11] *Bus Zones: refer to Queensland Road Rules section183 and 195*

[12] *Waiting: Where the mandatory longitudinal gradient of 1:40 is not able to be met, reference should be made to Figure 5.6 and 5.7 of this chapter for guidance on how to proceed.*

Element	Consideration
Accessibility including passenger waiting area	• Consists of the whole pavement space used by the bus stop and, importantly, the space available for waiting and boarding/alighting a bus service. • The bus stop passenger waiting area must comply with the *Transport Standards*. It should: – provide accessible and safe access to the bus stop boarding point and buses servicing the stop – allow for easy manoeuvring of wheelchairs and prams – where access paths/walkways adjoin the bus stop boarding point, provide a compliant access ramp not exceeding maximum gradient and length – be maintained with at least 1.2 metres (preferably 1.5 metres) of clear access, around and between all infrastructure and obstructions – be maintained with bus stop boarding points that are flat and stable with a maximum gradient of 1:40 across both longitudinal and cross-fall direction – address the longitudinal gradient of the adjacent road/street to ensure safe boarding and alighting at the bus stop[12]. – where possible, be kept free from clutter produced from other street furniture—especially in the spaces used for waiting, access and/or boarding and alighting – allow passengers to easily access and view timetables and public transport information without being obstructed by other objects (for example, bin) – allow for sufficient pedestrian through-flow and not clash with waiting passengers – be located to minimise exposure to direct sunlight and other environmental conditions (that is, wind and weather) for waiting passengers – be free from drainage pits, to prevent buses from splashing pooled water when approaching the stop – be able to allow for efficient runoff and drainage to prevent water from pooling on the bus stop boarding and alighting areas and waiting areas (where applicable). • TGSIs are mandatory for the minimum boarding point. TGSIs should: – guide customers with vision impairment to the boarding point and warn of hazards – be perpendicular to the kerb and across the full width of the access path to the shore line – have a minimum 30% contrast between the TGSI and surrounding ground surface. – be kept clear of furniture and hazards (minimum 300mm clearance). • When not located near a pedestrian-accessible intersection, a pedestrian refuge (or similar) should be located nearby for safe and convenient access. • Kerb ramps are to be provided as required, facilitating access to a crossing or boarding point. • Minimum kerb height of 150mm is to be provided to meet the slope requirements when a bus ramp is deployed (that is, gradient of less than 1 in 8, enabling wheelchair users to board without assistance or 1:4 where assisted) • Where no kerb is provided along a verge/street, a barrier type kerb (upright kerb) should be provided at the minimum boarding point.

Element	Consideration
Bus stop furniture	• All street furniture should: – comply with the *Transport Standards* and, where applicable, the *Premises Standards* – be located clear of the bus stop boarding area and access path – be set back from the length of the corresponding bus zone (i.e. a minimum of 600mm from kerb face) – ensure minimum 30% luminance contrast against background (for example, flooring) where it abuts a continuous accessible path of travel **Shelters** • Shelters are typically required for intermediate and premium stops. • TransLink and most local government providers have standing offer arrangements for the supply and installation of shelters at bus stops across the network. A suite of shelters is available with detailed drawings of each shelter type and guidance on shelter selection are provided in this chapter's 'Technical details' section and *Appendix 5-A & B*. • Shelters do not typically need to be provided at stops that are at the end-point/ outbound routes. • Shelters should: – not protrude/encroach on the minimum boarding point or manoeuvring and circulation area – not obstruct an accessible path of travel/footpath – define the bus stop and provide protection from environmental conditions – maintain clear sightlines to the bus stop for passive surveillance (*CPTED*) – maintain clear sightlines to allow customers to easily hail approaching buses – incorporate seating and allocated spaces for wheelchair users – incorporate overhead lighting to maximum personal security. **Seating** • Seating should be placed at least 500mm clear of the accessible path of travel, and preferably located at the rear of the stop. • It is preferable to orient seating so that passengers face towards the street when seated. • Seating should: – not intrude or encroach on the minimum boarding point or manoeuvring and circulation area – be easily maintained, durable and vandal resistant – be able to be bolted to hardstand (concrete) areas – include backrests and armrests as per the Transport Standards.

Element	Consideration
Bus stop furniture	**Bins** • The location of bins should be clear of the minimum boarding point (a minimum 1.2m clear of other bus stop infrastructure). • If placed at the kerb, a minimum clearance of 600mm is required from the face of the kerb to the bin surface/face. • Bins should: – not obstruct boarding, alighting or an accessible path/footpath (500mm clear of access paths) – ensure minimum 30% luminance contrast against surrounding ground surface where it abuts a continuous accessible path of travel – be easily maintained, durable and vandal resistant – feature a bird-proof design – be mounted on a concrete hardstand. • TGSI should not lead to a bin.
Lighting	• Utilise street lighting where possible – street lights should be a minimum 2.5m on the departure side of the bus marker to ensure buses avoid collision when exiting the stop. • Ensure vegetation does not obstruct lighting. • Incorporate additional *CPTED* principles. • Where lighting is required at a bus stop shelter, requirements will be dependent on the site-specific location of infrastructure. • Lighting at bus shelters must comply with the applicable requirements of lighting subcategory P6 within *AS/NZ 1158.3.1 – Lighting for roads and public spaces.* • Consider known or future users of the bus stop, particularly for elderly, vision impaired and its location adjacent to key attractors.
Other bus stop furniture and enhancements	**Optional enhancements should:** • comply with the Transport Standards and Australian Standards • be located clear of the bus stop boarding area and access path • ensure minimum 30% luminance contrast against background (for example, flooring) where it abuts a continuous accessible path of travel. **Ticket/fare machine (or future provision)** • Ensure physical housing is recessed from accessible path of travel/footpath. **Drinking fountain** • Ideally located adjacent to shelters. • Must be accessible for all users.

Element	Consideration
Other bus stop furniture and enhancements	**Shopping trolley bay(s)** • Considered the provision of bays when stops are located near shopping centre entries or exits. • Consultation with the shopping centre operator/owner is required to determine need and trolley collection management. • Locate bays so that their use does not conflict with pedestrian movements. • Consider *CPTED* principles. • Provide adequate capacity.
Supporting access infrastructure	**Cycle parking/storage** • Provide adequate capacity to meet known or anticipated future demand. • Refer to the *PTIM, Supporting access infrastructure*, for planning and design guidance for cycle facilities, including end-of-trip facilities at bus stops. **Kiss 'n' ride and Park 'n' ride** • Refer to the *PTIM, Supporting access infrastructure*, for additional guidance for these facilities at bus stops.
Environmentally sustainable design initiatives	**Solar panel** • If used, attached to shelter for powering lighting, including any associated hardware. • Should be located to maximise solar exposure and minimise visual impact. **Recycled materials** • Where possible, incorporate a recycling bin at bus stop. • Placement as per requirements of standard bins. • Arrange maintenance schedules /contracts.
Public art/context material	• Should be located within the bus stop extent (within hardstand area). • Must not obstruct access and movement of passengers. • Must not obstruct sightlines. • Should be developed in coordination with the relevant local authority. • Incorporate into furniture, if consistent with current TransLink and/or local authority standards, subject to approval.
Way-finding information	• Way-finding information should be included where appropriate to bus stop type, surrounding land uses, and context. • Braille tactile signage should be considered, where possible, as part of signage at a bus stop (must comply with the *Transport Standards*.) • Consider inclusion of a public address system and hearing augmentation, subject to bus stop requirements and customer needs.

Element	Consideration
Commercial	**Commercial vending machine** • Liaise with TransLink on the requirements, and appropriate placement at the bus stop. • Maximum of one commercial vending machine. • Locate adjacent to shelter, but clear of the minimum boarding point and any allocated spaces at the bus stop. **Advertising Panels** • Advertising panels can be considered, subject to road owner and/or local government approval, to offset the maintenance of the stop. Advertising panels should be coordinated and integrated into the shelter, where possible. • The amenity must be addressed as a first priority.
Landscape treatment	• Landscape treatment specifically encompasses vegetation (trees, shrubs, and ground covers), footpaths and street furnishings. • Vegetation must not: – obstruct sightlines between approaching bus and waiting passengers, shelters or seats – enter into the kinetic envelope of bus vehicle and bus stop area – obstruct passive surveillance at stop (*CPTED*) • Should be in accordance with local government requirements • Shrub and groundcover planting must be maintained at less than 500mm in physical height. • Tree trunks must be clear of vegetation for a minimum of 4.5m from underside of the tree canopy. • Trees are to be set back a minimum 600mm from face of kerb, and clear of the waiting area on both the approach and departure sides of the bus stop (particularly where seating/shelter is provided). • Where a shelter structure is not required, trees can be provided at bus stops for shade, in accordance with local authority standards.

5.8 Other bus stop types

5.8.1 Signature bus stop

Signature stops are distinct from TransLink's bus stop categories and components. These stops are typified by their distinguishable infrastructure design (such as shelters and platforms), and include a high level of supporting components.

Signature stops are typically located on specifically identified on corridors with high-frequency services and are generally supported by public transport priority measures (such as dedicated public transport corridors).

These stops are intended to service the network where there is a high customer demand and high-frequency services. They may be located, and provide key connections, between significant attractors (such as commercial and business districts).

As a minimum, signature bus stops should address the components and layout requirements for a premium bus stop.

TransLink should be approached with regards to the provision of this type and scale of bus stop infrastructure.

5.8.2 'Hail and ride' services

Parts of the TransLink network, including Sunshine Coast, Gold Coast, and Regional Queensland, operate on a 'hail and ride' basis. Typically no specific bus stop boarding point is provided, allowing a patron to signal the driver to stop the bus to board the service.

Experience in Australia and overseas has indicated that a 'hail and ride' service can benefit areas where there is sporadic customer demand along a route, and also assist with reducing the walking distance for accessing a service. 'Hail and ride' for a service, or sections of a route, is therefore considered appropriate where:

- services are lightly used (low patronage)
- patronage is scattered across the route/service
- local conditions are such that the installation of a fixed bus stop is considered difficult or sensitive (for example, environmental factors, or narrow pavements).

Under the *Transport Standards* section 8.4:

1. If a 'hail and ride' service is offered, passengers must be able to hail the service at nominated accessible boarding points where boarding devices can be deployed.
2. The boarding points must offer equal access to public transport services.

TransLink acknowledges the need to provide accessible infrastructure for patrons of such a service and recommends the following:

- The provision of accessible point needs to consider identified community need, adjacent land uses, and reasonable passenger catchment and permeability.
- An accessible point should provide sufficient width for passengers to load and unload and for boarding devices to be deployed.
- Identified accessible points must comply with the Transport Standards Part 33.
- Suitable information (for example, timetable, route map identifying accessible points) should be provided at identified locations along the route to reassure passengers of the 'hail and ride' service.
- A bus stop J-pole is not required.
- Placement of accessible points should be cognisant of the general requirements for locating a bus stop as discussed earlier in this chapter (that is, proximity and relationship to intersections, potential traffic hindrances, unobstructed waiting areas, good visibility and so on)
- The provider of the bus stop will need to ensure the identified accessible points have been considered with respect to determining compliance alongside the Equivalent Access or Unjustifiable Hardship routes.

5.8.3 Temporary bus stops

A bus stop is considered 'temporary' if that bus stop is designed and constructed with the intention that it will be removed, or otherwise not used, at a point in time after installation and commissioning.

Temporary bus stops may be required for:

- upgrading of an existing bus stop
- construction or disruption to the use of the footpath
- an event (for example, sporting event and concerts)
- rail replacement services
- bus service diversion.

The *Transport Standards* draw no distinction between permanent and temporary bus stops. Moreover, the *Transport Standards* do not make any explicit allowance for a bus stop to be exempt from accessibility compliance merely on the basis that the bus stop is temporary. *Appendix 5-A* provides a number of scenarios to assist with understanding the application of the *Transport Standards*.

Where temporary stops are proposed, TransLink would encourage consultation with relevant stakeholders to determine level of patronage, location and duration the temporary facility will be required.

5.8.4 School bus stops

There is no specific requirement for dedicated school bus stops to be fully compliant with the *Transport Standards*. Dedicated school bus services are exempt from having to provide wheelchair access[13] and it would follow that the bus stops that solely serve a dedicated school bus service also would be exempt. However, should urban bus services use the same bus stop, full compliance would be required.

Where new school stops are being developed, it is TransLink's preference that they comply with the disability access standards.

TransLink should be consulted regarding the requirements for the provision of services for existing or new schools, and particularly where bus stop provision proposes to serve both school and urban services. *Appendix 5-A* provides a number of scenarios to assist with understanding the application of the *Transport Standards* in relation to school bus stops.

Further information on design requirements for school bus stops can be found in:

- *TMR Road Planning and Design Manual: A Guide to Queensland Practice*
- *TMR Planning for Safe Transport Infrastructure at Schools – Technical Guidance for the provision of effective and safe transport infrastructure at schools (April 2011).*

13 *The Transport Standards Parts 3, 6, 8, 9-12, 14, and s1.13 for definition*

5.8.5 Long-distance coach

A long-distance coach stop must comply with the *Transport Standards* and should use the same planning and design principles detailed in this chapter. More significant long-distance coach stops, for example a terminus or high patronage interchange, should refer to TransLink's *PTIM, Bus station infrastructure chapter*.

Table 5.10 details the key criteria to consider in planning and designing long-distance coach stops.

Table 5.10:
Long-distance coach planning and design criteria.

Criteria	Factors for consideration
Locality guidance	Placement of the stop should consider: • the external road network (determines the direction of vehicle flow within the interchange) • trip destinations (for example, shops, workplaces, educational institutions, hospitals and health clinics), which indicate likely pedestrian movement/desire lines • proximity and access to other passenger transport modes
Planning environment	A long-distance coach stop should be well organised and deliver: • passenger transport stops integrated into a surrounding activity centre (where applicable) • waiting areas that are clearly visible from the surrounding road network and adjacent buildings, and which provide clear views of passenger transport vehicle arrivals and departures • direct routes including high visibility, activity and surveillance along those routes • active frontages along pedestrian paths to the stop • appropriate kiss 'n' ride and park 'n' ride facilities • passenger transport information about the range of services provided • directional signage that is informative and not confusing • lighting that is well integrated with signage and passenger information and which maximises safety, especially at night.

Criteria	Factors for consideration
Operational environment	Location of the stop should consider the broader context of service planning and the coach companies' operational environment. For example: • the location of the stop in relation to subsidised long distance coach routes • co-location with other passenger transport modes, particularly urban buses, to facilitate passenger transfer and distribution • future coach service growth • assisting the bus industry to reduce the inefficiencies of dead-running • facilitating adherence to driving-hour requirements (fatigue management).

In general the stops should align with the component requirements of premium stops, including bus boarding areas and infrastructure. However, special consideration should be given to additional space/pavement requirements on the platform to allow for coach wheel chair lift deployment and access/storage of luggage.

Long-distance coach signage, including blade stop marker signs, should be compliant with the long distance coach signage criteria and colour scheme. Contact TransLink for relevant signage information and details.

5.8.5.1 Coach layover facilities

Determining the adequate number and design of coach layover spaces should consider:

- the number of coach operators and routes using the stop or interchange
- the larger size of coaches (12.5m and 14.5m length coaches)
- the ability of coaches to move independently of each other
- easy manoeuvring of vehicles into coach loading bays
- providing authorised access only
- operational timetables of coach routes which indicate driver rest breaks and recovery times.

Facilities for staff should take into consideration the following principles:

- separate male and female toilet and/or shower facilities accessible by a key, proximity card or combination lock (accessible from a separate door to the meal area)
- kitchen area with sufficient bench space, sink /wash-up area, heated and chilled water dispenser and at least four power outlets along the bench area
- provision for the installation of a refrigerator
- air conditioning
- safe pedestrian paths of travel to and from buses for drivers using the driver facility building
- provision for transport security requirements including security camera connectivity, on-site recording and potential connection to off-site operations centres
- internal duress alarm
- appropriate lighting outside and around the facility
- after hours security alarm
- lighting design cognisant of impact on commercial or residential properties.

5.9 Technical details

Appendix 5-B provides a series of technical drawings to assist bus stop planners and designers to meet the requirements detailed in this chapter. This section identifies the key drawings and supplies additional technical notes to assist with the planning and design process.

As previously noted, each bus stop facility will warrant site-specific treatment, depending on the individual site characteristics and constraints. The fundamental layout and design principles illustrated in the technical drawings should be adopted at all locations.

TransLink advises that specialist access personnel, as well as appropriate user groups, review the designs and layouts to achieve the most suitable outcome for each location. Where this is not possible, seek advice from TransLink.

5.9.1 Bus stop layouts

Minimum boarding point:

Technical drawings 5-0011 to 5-0012 address the general requirements of this type of stop.

There may be cases where there is no existing kerb at the identified site for a bus stop. In this instance, drawing 5-0012 provides guidance on the requirements for providing a raised minimum boarding point (that is, suitable ramps for customers to access the stop from existing/available access paths).

Note that level area of the minimum boarding point is arranged to include the bus stop sign. A bus stop sign installed on a ramp would result in its height and height of information not conforming with the *Transport Standards*.

Regular stops:

Technical drawings 5-0013 to 5-0015 address the general requirements of this type of stop. Note this drawing illustrates additional hardstand to the upstream of the bus stop sign. This is to allow access to information (for example timetable) where it is provided on both sides of the bus stop marker.

Drawing 5-0015 demonstrates variations to the layout and design of a regular bus stop to address various verge widths and constrained site situations.

Intermediate and premium stops:

Technical drawings 5-0021 to 5-0032 illustrate additional hardstand to the upstream of the bus stop sign. This is to allow access to information (for example, timetable) where it is provided on both sides of the bus stop marker.

Where such information is provided only on one side of the bus stop sign, then this additional width of hardstand does not need to be provided for.

TransLink will advise on the requirements for timetables (i.e. on one or both sides) for new and upgraded bus stops such that appropriate access can be provided.

Drawing 5-0025 illustrates variations to the layout and design of an intermediate bus stop to address various verge widths and constrained site situations.

Allocated space at bus stops:

The *Transport Standards* provides guidance on the provision of appropriate allocated space at a bus stop. Where a 'waiting area' exists at a bus stop, a provider is to provide the maximum achievable area for allocated spaces under the particular circumstances.

The *Transport Standards* s1.11 defines an allocated space as a three dimensional space that can accommodate a wheelchair or similar mobility aid.

Section 7.2 of the *Transport Standards* requires allocated space for a minimum of two wheelchairs to be available for passengers – a minimum 800mm x 1300mm[5] per space .

TransLink's technical drawings outline appropriate positions and locations for allocated spaces at a bus stop. These clearly demonstrate that the allocated space:

- must not encroach on the minimum boarding point
- be positioned such that customers using wheelchairs or mobility aids are able to enter/exit a bus and readily position themselves and their aids in the allocated space.

Note that the wheelchair icon marking shown on the drawings is not a requirement. It is shown on the drawings to ensure allowance for the space is made in the design of the stop.

5 *Transport Standards s7.2, s9.1, AS1428.2-1992 Clause 6.2. AHRC Guidelines s5.10, s5.11 and s4.14.*

6 *Transport Standards s3.2*


bus
queensland
Grand Centre
Stop A
SUSHI

5.9.2 Bus stop signage and shelters

Bus stop identification markers:

All bus stop signage within the TransLink network must adhere to the requirements set out in the *PTIM, Branding, theming and signage*, and comply with the relevant standards.

TransLink will supply the required bus stop marker for stops that form part of its network. Figure 5.11 contains examples of TransLink bus stop markers.

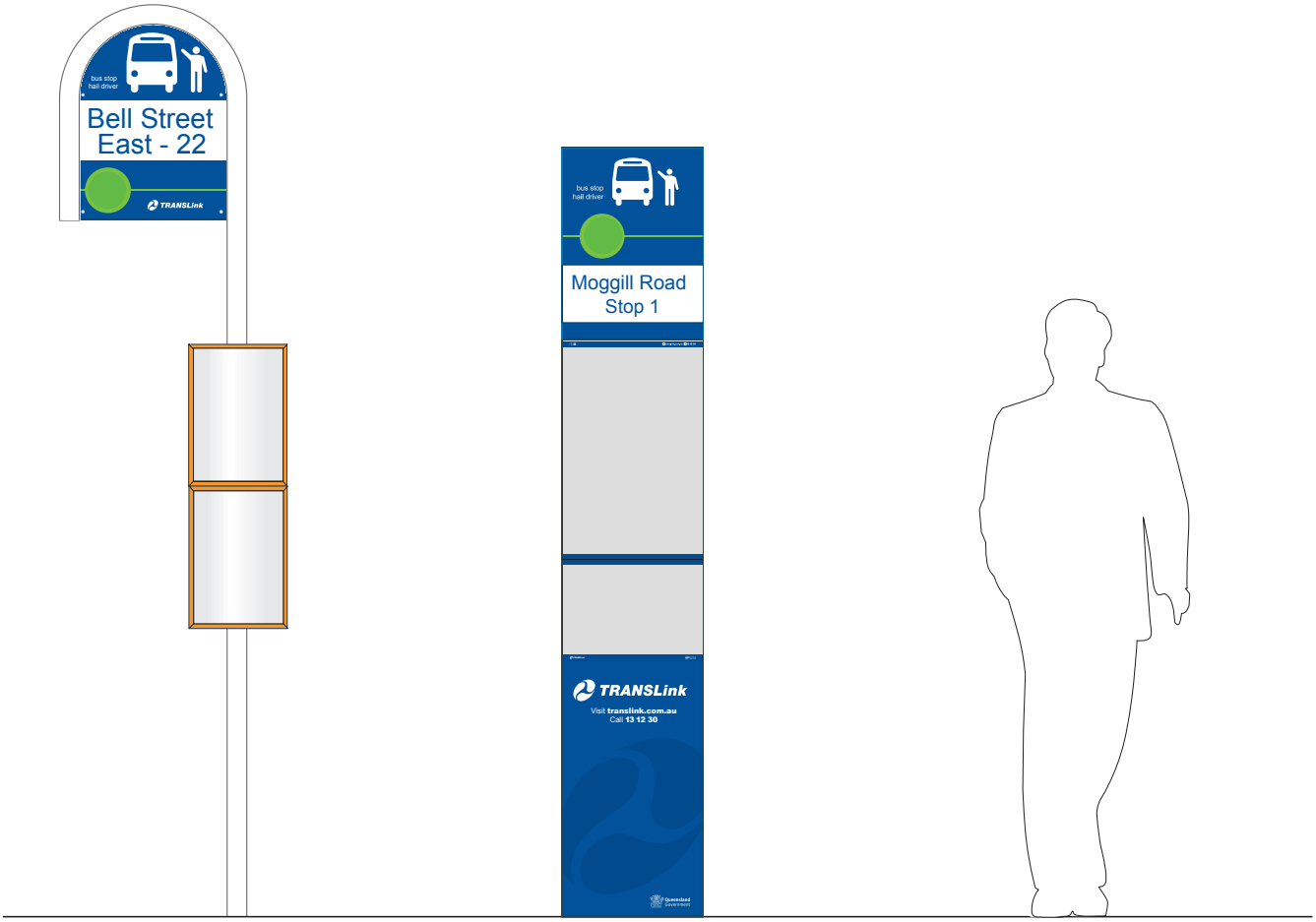


Figure 5.11 –
Bus stop identification markers

Bus stop shelters:

Drawing 5-0100 outlines the suite of shelters available and currently in use across the TransLink network. The selection of the appropriate shelter type and drawing references are indicated in Table 5.11 according to bus stop type.

Table 5.11:
Typical bus stop type and shelter selection.

TransLink bus stop type	TransLink shelter suite	Description of shelter	Drawing reference
Intermediate	Type 1A	Single module	5-0101
	Type 2A	Single module with rear lean rail	5-0201
	Type 3A	Single module with rear seat	5-0301
	Suburban	Single module with advertising panel	5-0401
		Single module without advertising panel	5-0402
Premium	Type 1B	Double module	5-0102
	Type 2B	Double module with rear lean rail	5-0202
	Type 3B	Double module with rear seat	5-0302

5.9.3 Cyclist Facilities

The movement of bike riders in and around bus stops must be considered during the design of any bus stop infrastructure. The first priority in relation to bicycle movements, when considering bus stop layout, is to avoid cross-over conflict points between buses and bicycles. To achieve this, the preferred bus stop layout transitions any on-road cycle facility to a cycle track/shared path on the approach to the bus stop. The cycle facility then runs behind the bus stop area. Drawing DRG 5-0041 illustrates the preferred layout for both non-indented and indented stops where the cycle facility which approaches the bus stop consists of a cycle track or on-road cycle lane. Drawing DRG 5-0043 illustrates the preferred layout for both non-indented and indented stops where the cycle facility which approaches the bus stop consists of a shared path.

As it is often quite difficult to provide preferred widths in brownfield sites, these drawings indicate the priority order of infrastructure element reductions which could be considered.

If the preferred layouts shown in the drawings mentioned above cannot be achieved, the layouts shown in Drawing DRG 5-0042 and DRG 5-0044 can be considered. These layouts position the cycle facility behind the boarding point hardstand. An alternative location for the shelter should be considered to optimise the available space while considering distance and ease of access to the boarding point.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Appendix 5-A

Example scenarios for the application of the Transport Standards

Temporary bus stops

Scenario 1: Temporary bus stops during major upgrading of permanent bus stop

Example:

A permanent public bus stop is being demolished and rebuilt.

A temporary bus stop in lieu of the permanent one is provided elsewhere for the duration of the construction works.

Response:

Given that the temporary bus stop will function as an ordinary, regular bus stop for the duration of its life, it would require full compliance with the *Transport Standards*. This includes a j-pole, level hardstand boarding point, tactile ground surface indicators etc. Publicly available, up-to-date information on the location of the bus stop would also be required.

Scenario 2: Temporary bus stops at a large event

Example:

A temporary bus stop is provided to serve large volumes of buses for a large, one-off sporting event. The bus stop will be removed after the conclusion of the event.

Response:

Particular attention needs to be given to providing an accessible boarding point, accessible waiting area and accessible paths of travel at such a bus stop. Given the high likelihood of long wait times, and possibly also long travelling distances between venues, it would be strongly recommended that the bus stop include seating and shelter for waiting passengers. This is the case even if removal of the bus stops is intended after the event in question. The service level identified for the event would influence these requirements.

The provision of both ample travel information in accessible formats and suitably trained staff/volunteers on-site would typically be essential to manage the volume of users (i.e. estimated event demand), and achieve compliance with the *Transport Standards*.

Scenario 3: Temporary bus stops during railway track-work over weekend

Example:

A railway line is shut down over the weekend for track work maintenance. The replacement buses only stop at the rail stations in lieu of regular rail services, and do not run along the regular bus routes. A temporary bus stop is provided at each rail station specifically for track-work service purposes only.

Response:

The *Transport Standards* apply, even though the track-work bus stops will only exist for the duration of the weekend work.

This particular scenario could potentially be quite disorienting or confusing for many users, particularly for a user with a vision-impairment. Such a user would need to, firstly, be cognisant that the trains are not operating and buses are being provided instead and, secondly, ascertain the location of the temporary bus stop that serves those buses. This could be made more difficult by the fact that, often, there will already be a permanent bus stop at the rail station that serves regular bus routes/services, but not the replacement buses.

In this scenario, particular attention would need to be given to providing:

- an accessible board point and accessible waiting area at each track-work bus stop
- seating and shelter for waiting
- suitably trained staff at the rail station and the temporary bus stop
- ample information in accessible formats.

Scenario 4: A permanent bus stop that is only used occasionally

Example:

There is a permanent bus stop located at a local sports stadium. The bus stop is within the grounds that surround the stadium, and is set back from the main road. The buses travelling to and from the stadium will stop at the bus stop when an event is held at the stadium. However, the stadium typically only hosts one public event a week. At all other times, the bus stop is not used by any regular public bus services.

Response:

The *Transport Standards* s1.23 captures this scenario. The fact that the bus stop is used only on an irregular basis does not exempt it from the application of the *Transport Standards*.

However, a key factor in this particular scenario is that the bus stop is not located on a public footpath but, rather, is within the grounds of the local sports stadium. This means that people (that is, potential customers) are unlikely to simply approach the bus stop and expect a bus to arrive.

Compliance via 'Equivalent Access' may require co-operation between the bus service provider and the operators of the stadium during the times when an event is held at the stadium. Otherwise, the specified design requirements of the *Transport Standards* will remain applicable at this bus stop.

Scenario 5: Shuttle service for a retirement village

Example:

A private mini-bus serves residents in a retirement village, taking them to and from local facilities (for example, shops and clubs). This bus service operates regularly. The mini-bus has the capability of stopping directly outside a particular village resident's house if necessary.

The retirement village operators own the shuttle bus vehicle.

Response:

If this shuttle service is solely for the use of retirement village residents, and a member of the public is not permitted to use the shuttle, the *Transport Standards* would not be applicable.

School bus stops

Scenario 6: School bus stops adjacent to school grounds

Example:

There is a bus stop on the footpath adjacent to a secondary school that only serves school students. The stopping pattern is such that buses set-down only in the morning and pick-up only in the afternoon. There is a written sign at the bus stop stating that it is for school use.

There are no other facilities at this bus stop.

Response:

A bus stop that is solely for the use of school students queries whether this is a public bus stop for the purposes of the *Transport Standards* s1.23.

The *Transport Standards* specifically exempts dedicated school buses from the provision of wheelchair access. It would seem to follow from this that a bus stop that solely serves a dedicated school bus service would also be exempt from wheelchair access compliance.

Full design compliance with the *Transport Standards* at a bus stop that solely serves school buses could possibly be misleading for a non-student user, particularly someone with a vision impairment. Full design compliance would typically entail provision of TGSIs on the footpath. A non-student user, that relies on TGSIs, would assume that the TGSIs lead to a bus stop that has regular services, yet no regular services would stop at this stop.

Please note however previous comments with regards to facilitating an accessible bus stop facility to address individual school needs.

Scenario 7: School bus run picking up/setting down school students near their homes

Example:

A bus picks up school students at specific locations near their individual homes. The pickup point is not signed. Locations may vary from year to year depending on the particular school catchment, enrolments and operator.

Response:

This scenario has similar issues as bus stops outside schools serving only school students. Query once again whether this is a public service, or whether it is more akin to a shuttle bus service.

Appendix 5-B

Layout and technical drawings

NOTES:

HARDSTAND

1 THE MANDATORY (COMPLIANT TO DSAPT) MINIMUM BOARDING POINT HARDSTAND AREA IS 1540MM X 2070MM, POSITIONED AS SHOWN ON THE TRANSLINK DRAWINGS. A LARGER HARDSTAND AREA IS PREFERRED AND IS DEPENDENT ON SITE SPECIFIC CONDITIONS.

2 THE MANDATORY LONGITUDINAL AND CROSS FALL GRADIENT AT BOARDING POINT IS MAXIMUM 1:40 FALL ACROSS THE BOARDING POINT AREA (SHOWN HATCHED). ALL OTHER HARDSTAND AND ADJACENT AREAS TO THE BUS STOP SHALL MEET APPLICABLE STANDARDS IN RELATION TO THE ADJACENT SITE CONDITIONS, AND TO PREFERABLY ACHIEVE A LONGITUDINAL AND CROSS FALL GRADIENT OF MAXIMUM 1:40 FALL.

3 HARDSTANDS SHALL BE MINIMUM 125MM THICK BROOM FINISHED (FOR SLIP RESISTANCE) GRADE N25 CONCRETE SL72 MESH PLACED CENTRALLY, OR, AS REQUIRED BY THE RELEVANT STATUTORY AUTHORITY. FOR SLAB THICKENING AT FURNITURE LOCATIONS, AND JOINT LAYOUT AND SPECIFICATIONS REFER TO LOCAL GOVERNMENT SPECIFIC REQUIREMENTS.

4 A CLEAR HARDSTAND ACCESS SPACE OF 1200MM MINIMUM IS REQUIRED BETWEEN AND AROUND ALL BUS STOP INFRASTRUCTURE (1500MM DESIRABLE).

ACCESS

5 WHERE BUS STOPS ARE LOCATED ALONG BICYCLE ROUTES, SHARED ACCESS PATHS SHOULD BE APPLIED AS PER LOCAL GOVERNMENT REQUIREMENTS OR WITH REFERENCE TO RELEVANT GUIDELINE DIMENSIONS GIVEN IN THE APPLICABLE STANDARDS, TMR GUIDELINES, AND AUSTROADS.

6 CIRCULATION OF WHEELCHAIRS SHOULD BE CONSIDERED AT EACH BUS STOP BASED ON SITE SPECIFIC CONDITIONS AND TO ADDRESS COMPLIANCE WITH DSAPT. LINE-MARKING OF THE 2No. ALLOCATED SPACES (PWD WAITING ZONES) IS NOT REQUIRED.

7 TACTILE GROUND SURFACE INDICATORS (TGSI) SHOULD PREFERABLY BE INSTALLED AS SHOWN ON THE TRANSLINK DRAWINGS. WHERE THERE IS A PATHWAY ACCESSING A BUS STOP, DIRECTIONAL TGSI SHALL BE INSTALLED FOR THE FULL WIDTH OF THE PATH OF TRAVEL OVER A MINIMUM 600MM DEPTH AND PERPENDICULAR TO THE DIRECTION OF TRAVEL WHEN APPROACHING. DIRECTIONAL TGSI SHALL BE USED ACROSS THE OPEN SPACE FROM THE ACCESS PATHWAY DIRECTIONAL TGSI TO THE BOARDING POINT WARNING TGSI. TGSI TO EXTEND TO THE SHORELINE - I.E. BUILDING LINE, WALL, A FENCE, A KERB, OR A GRASS VERGE WHERE APPLICABLE.

8 THE COLOUR OF TGSI SHALL BE SELECTED BASED ON SITE SPECIFIC REQUIREMENTS. INTEGRATED TGSI SHALL HAVE A MINIMUM COLOUR CONTRAST OF 30% COMPARED TO THE AMOUNT OF LIGHT REFLECTED FROM THE SURFACE OF THE ADJACENT PATH OF TRAVEL. FOR EXAMPLE; FOR A LIGHT CONCRETE COLOURED PATH OF TRAVEL, DARK COLOURED (E.G. BLACK) TGSI MAY BE APPROPRIATE. FOR A BLACK BITUMEN PATH OF TRAVEL LIGHT COLOURED (E.G. WHITE OR YELLOW) TGSI MAY BE APPROPRIATE. THIS CONTRAST MUST BE MAINTAINED IN BOTH WET AND DRY CONDITIONS.

SHELTER

9 FOR OPTIONS OF SHELTER TYPES FOR INTERMEDIATE AND PREMIUM STOPS REFER TO TRANSLINK DRAWINGS. WHERE A SHELTER ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

FURNITURE & SIGNAGE

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12 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

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ADDITIONAL REQUIREMENTS

14 ALL BUS STOPS TO BE DSAPT COMPLIANT. FOR FURTHER GUIDANCE REFER TO THE RELEVANT STANDARDS, TRANSLINK GUIDANCE AND RELEVANT LOCAL GOVERNMENT REQUIREMENTS.

15 ALL BUS STOP COMPONENTS SHOULD BE POSITIONED IN CONSIDERATION OF RELEVANT ONSITE CONDITIONS WITH REFERENCE TO THE GUIDANCE CONTAINED WITHIN THE PTIM, AND FOR ADDITIONAL REQUIREMENTS AND DESIGN ALTERNATIVES REFER TO THE COMPONENTS TABLE CONTAINED IN THE PTIM.

16 REFER TO PTIM GLOSSARY FOR DEFINITIONS OF TERMS AND PTIM ABBREVIATIONS FOR DEFINITIONS OF ACRONYMS.

17 ALL DRAWING DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

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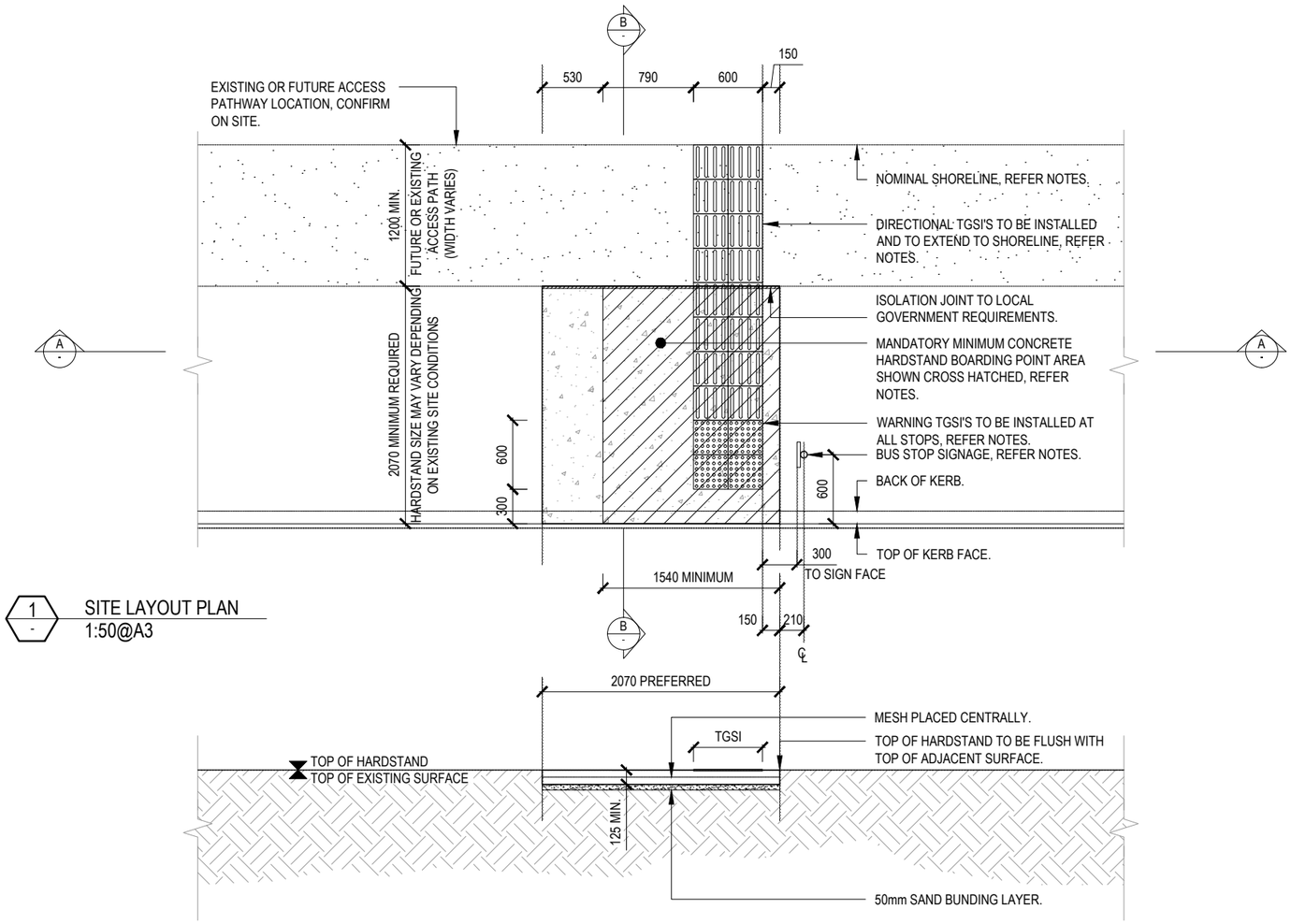

1 - SITE LAYOUT PLAN
1:50@A3

A - SECTION A
1:50@A3

B - SECTION B
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TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
REGULAR STOP - MINIMUM BOARDING POINT - WITH EXISTING KERB

SCALE : AS SHOWN		DRG 5-0011
DRAWN : -	DATE : JULY 2013	A

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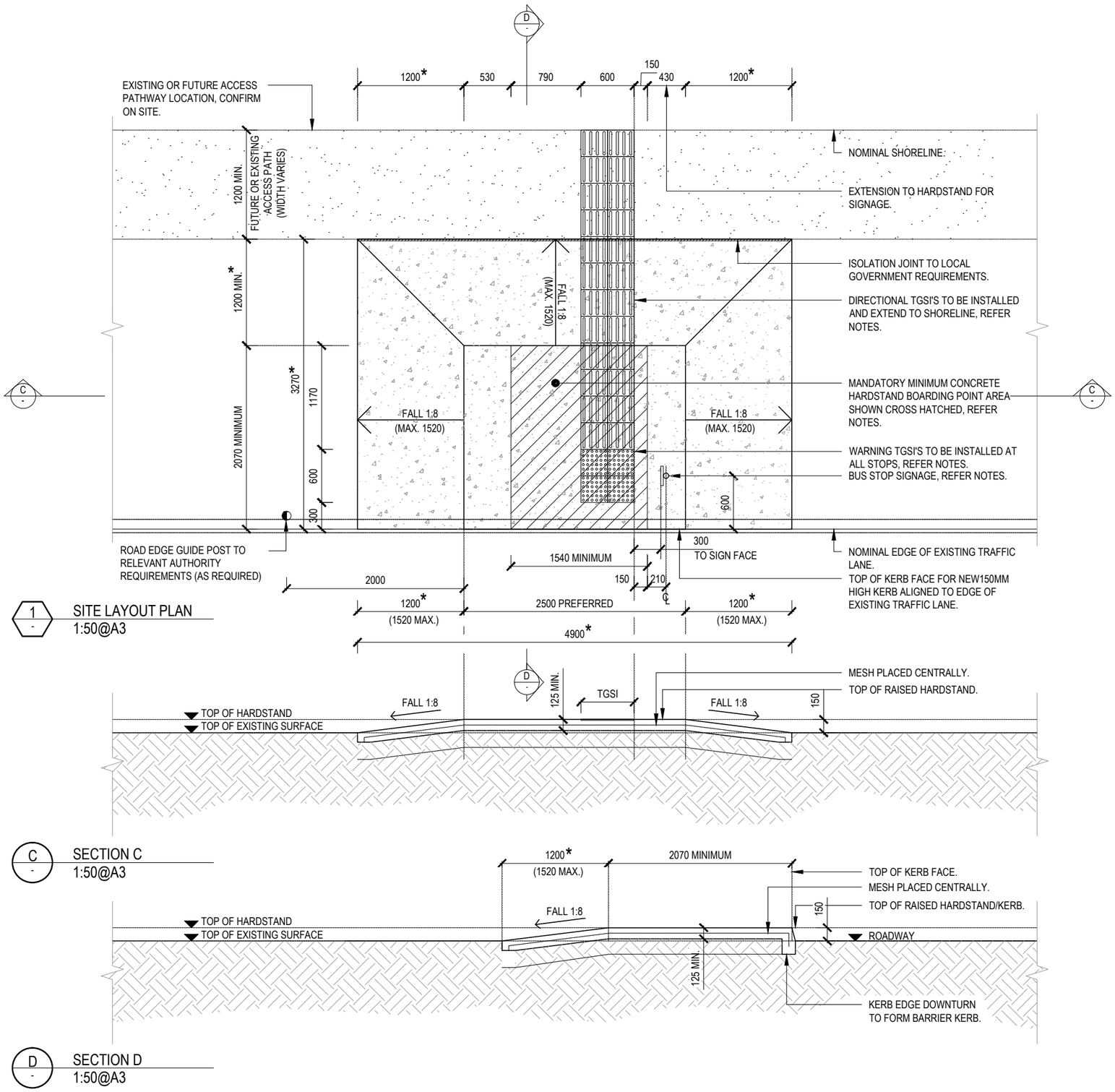

1 - SITE LAYOUT PLAN
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C - SECTION C
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D - SECTION D
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TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
REGULAR STOP - MINIMUM BOARDING POINT - WITHOUT EXISTING KERB

SCALE : AS SHOWN		DRG 5-0012
DRAWN : -	DATE : JULY 2013	A

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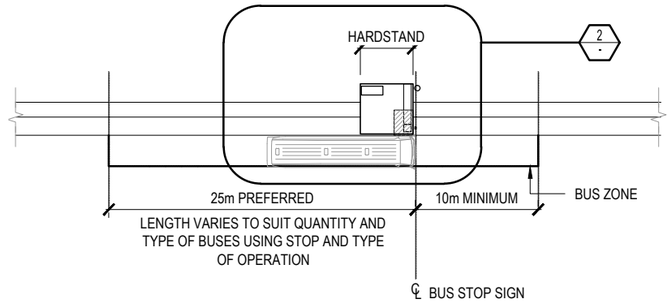

1 - KEY PLAN
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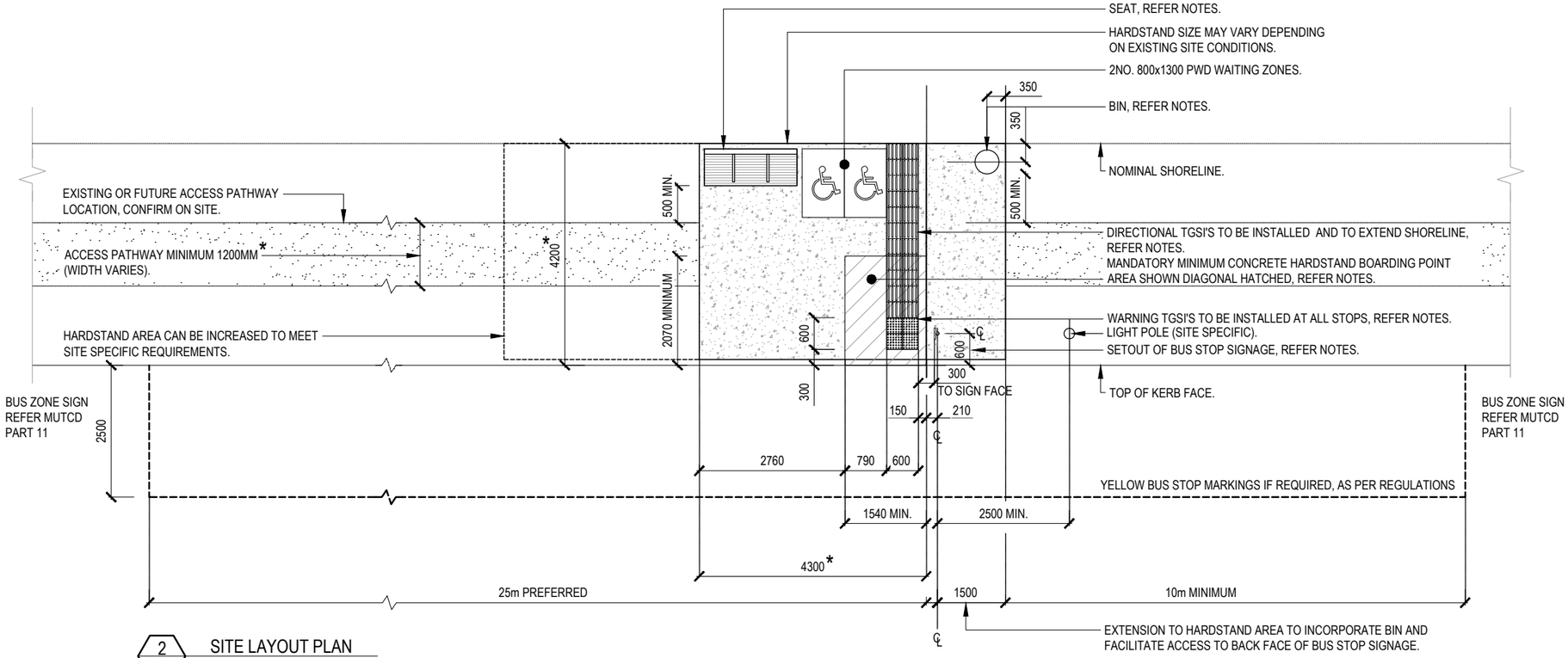

2 - SITE LAYOUT PLAN
1:100@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
REGULAR STOP - SITE LAYOUT - WITHOUT INDENTED BUS BAY

SCALE : AS SHOWN			DRG 5-0013
DRAWN : -	DATE : JULY 2013	A	

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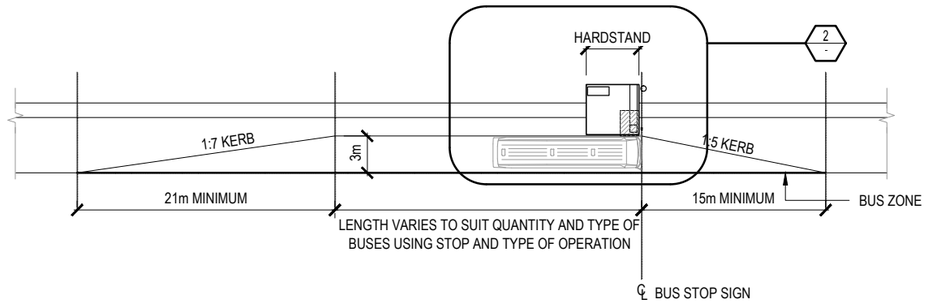

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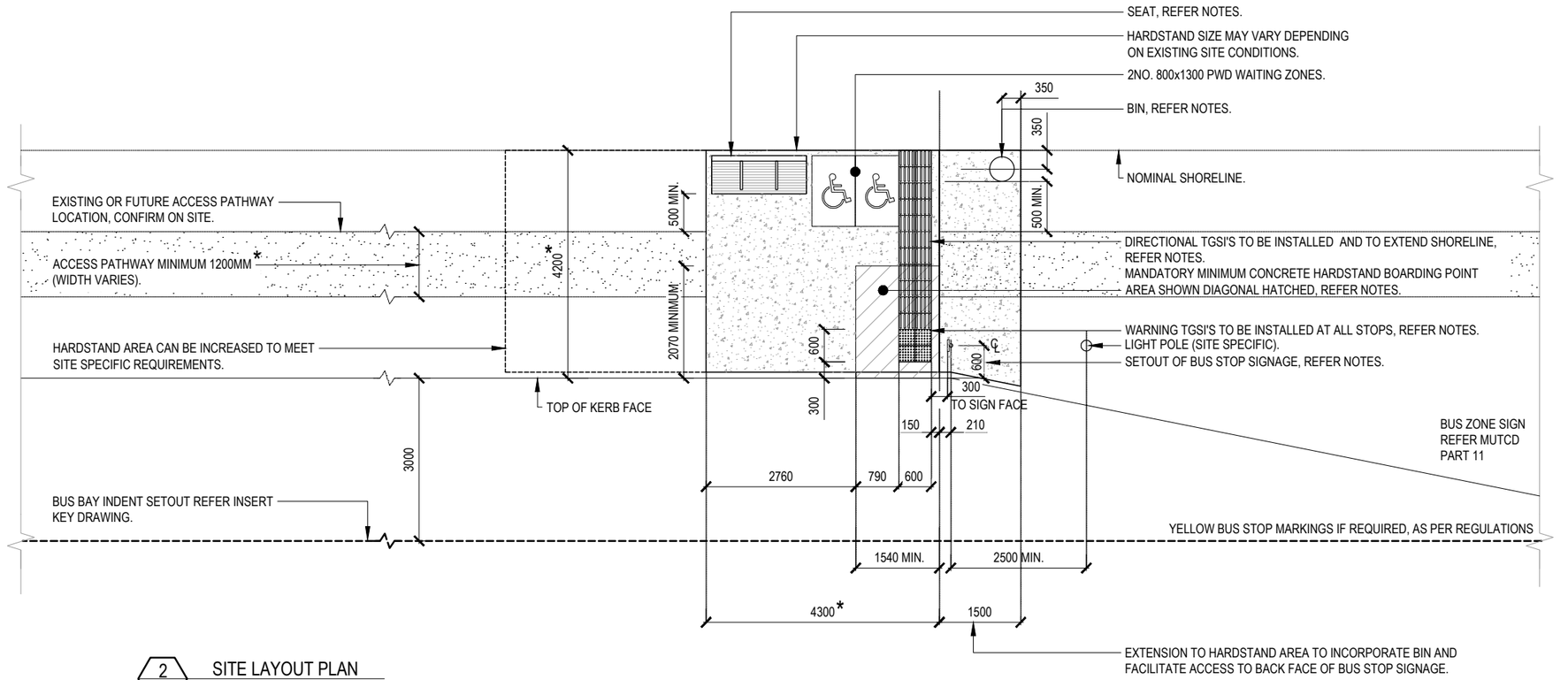

2 - SITE LAYOUT PLAN
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TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
REGULAR STOP - SITE LAYOUT - WITH INDENTED BUS BAY

SCALE : AS SHOWN		DRG 5-0014
DRAWN : -	DATE : JULY 2013	A

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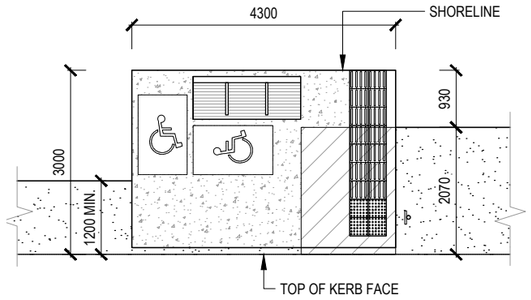

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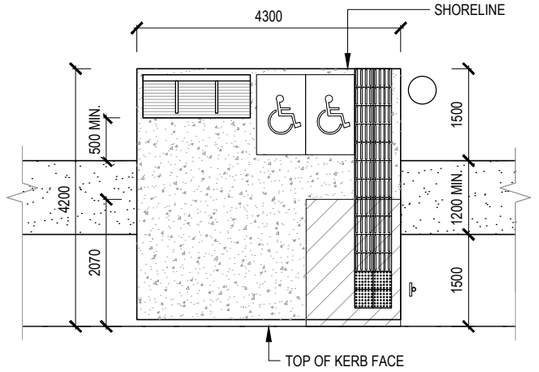
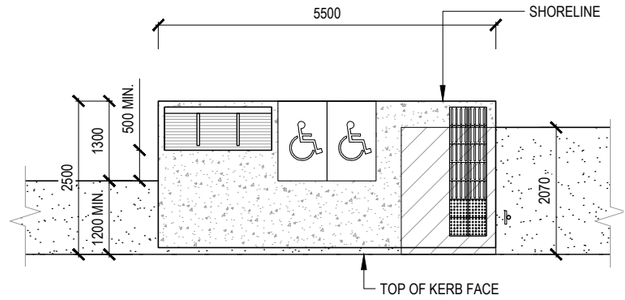


3 - HARDSTAND - MID/BACK FOOTPATH
1:100@A3



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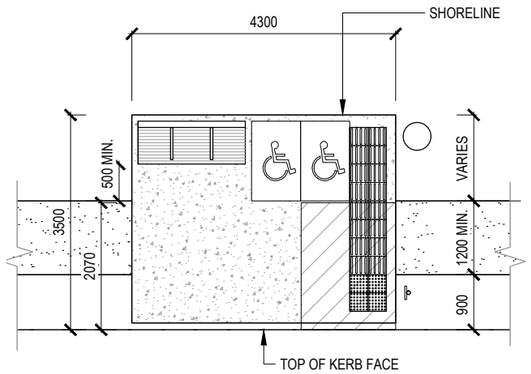

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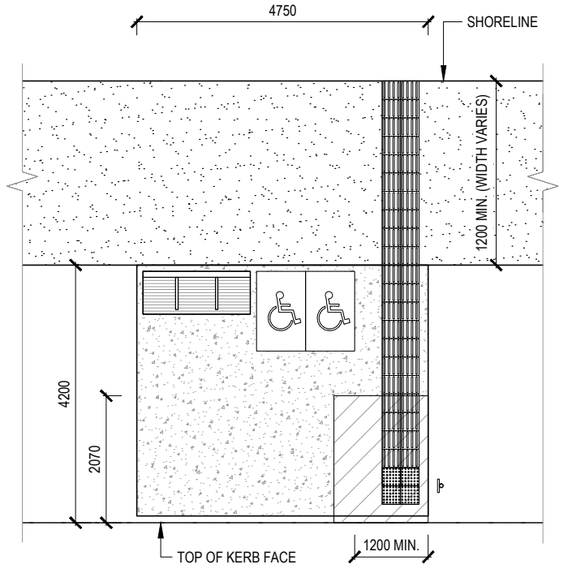

4 - HARDSTAND - SHARED ACCESS PATH BEHIND
1:100@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
REGULAR STOP - SITE LAYOUT - ACCESS EXAMPLES

SCALE : AS SHOWN		DRG 5-0015
DRAWN : -	DATE : JULY 2013	A

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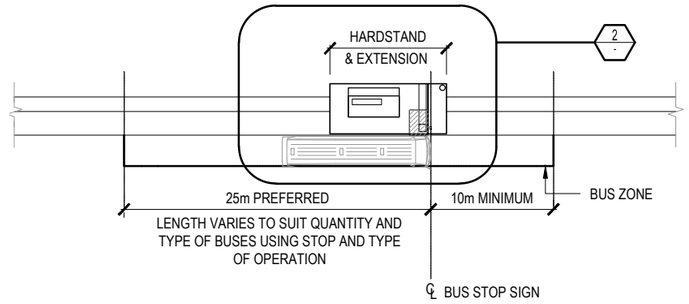

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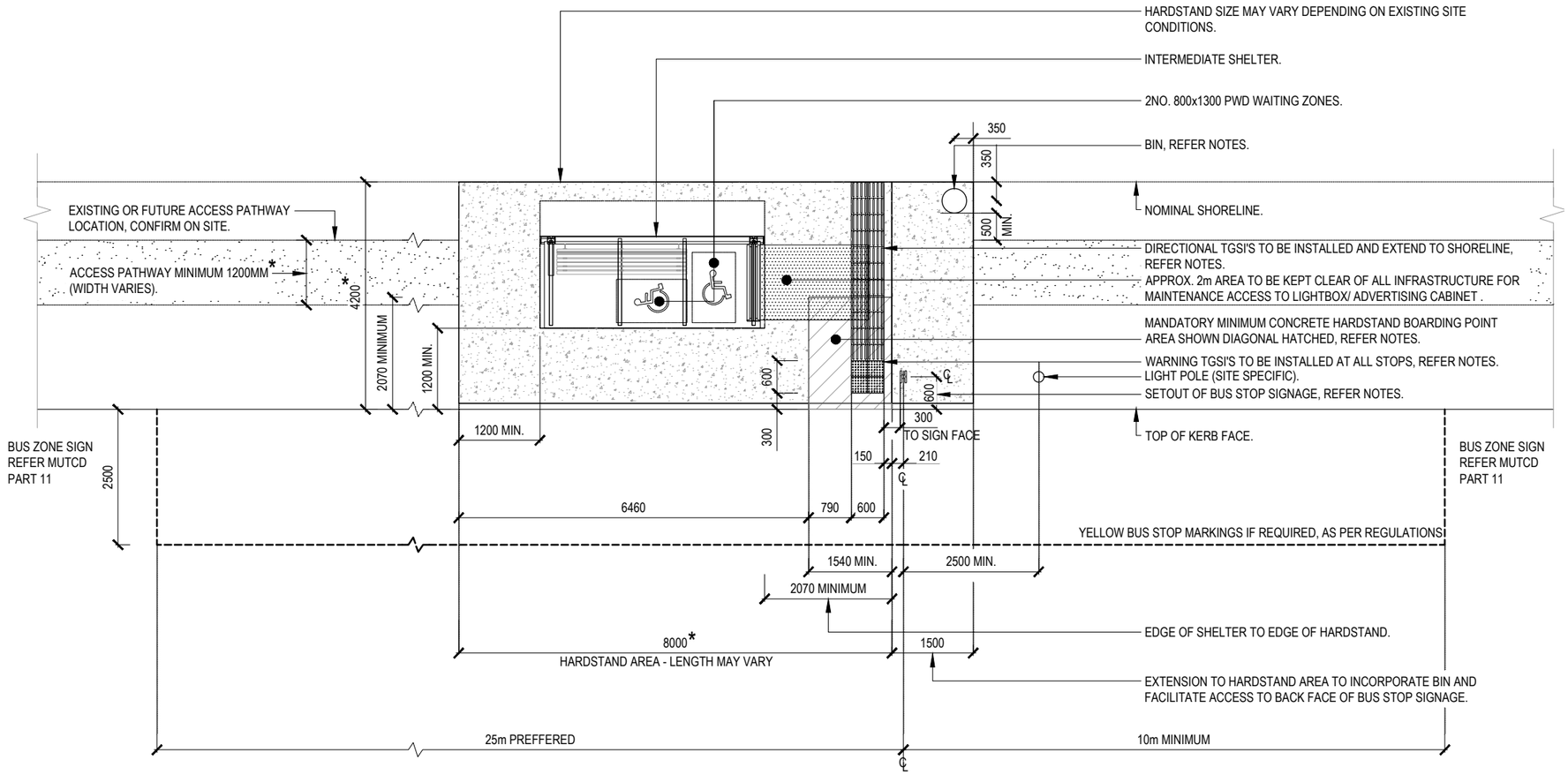

2 - SITE LAYOUT PLAN
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TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
INTERMEDIATE STOP - SITE LAYOUT - WITHOUT INDENTED BUS BAY

SCALE : AS SHOWN		DRG 5-0021
DRAWN : -	DATE : JULY 2013	A

NOTES:

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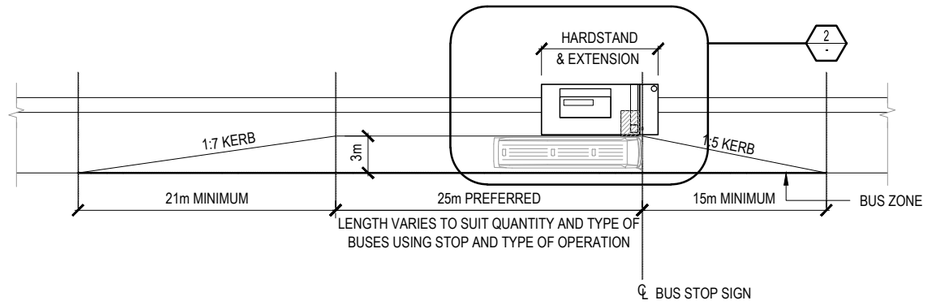

1 - KEY PLAN
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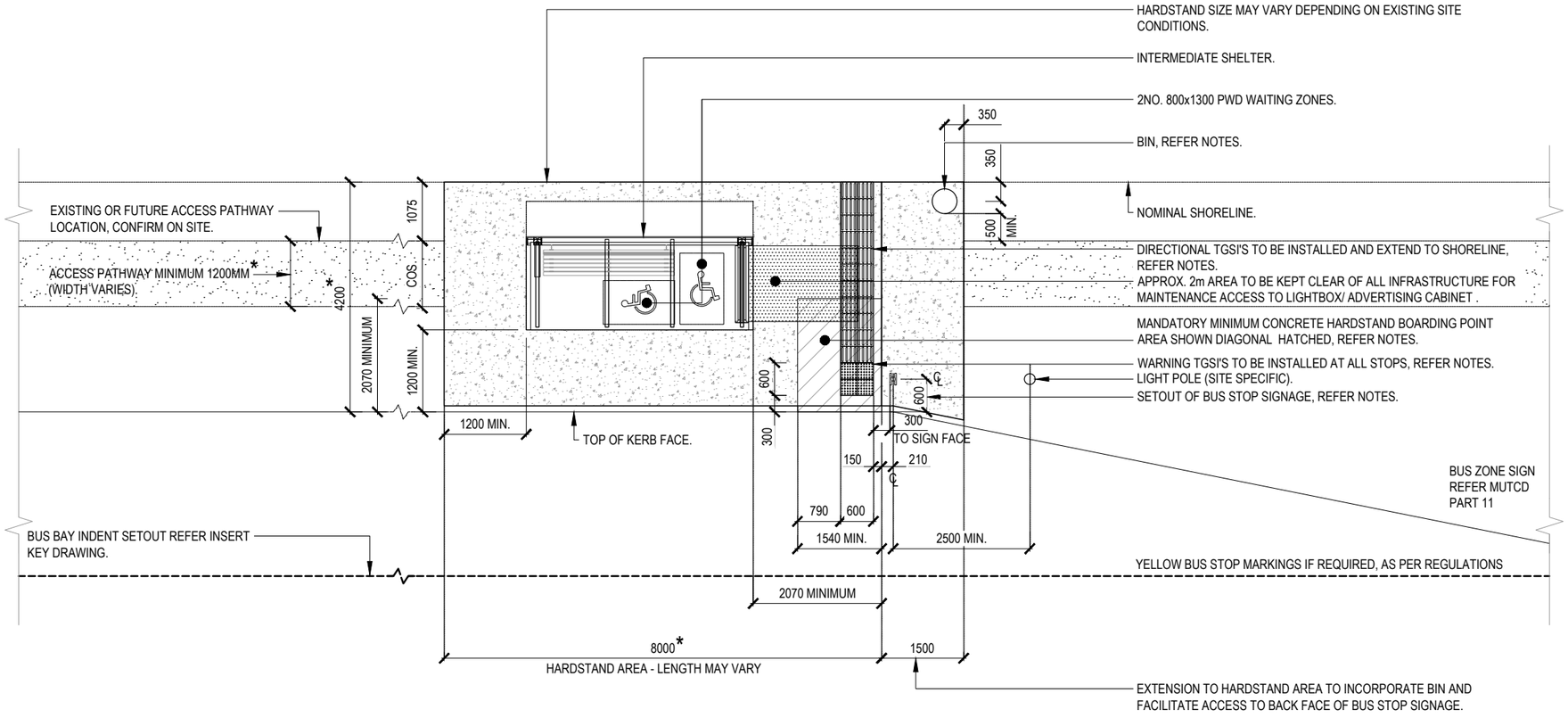

2 - SITE LAYOUT PLAN
1:100@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
INTERMEDIATE STOP - SITE LAYOUT - WITH INDENTED BUS BAY

SCALE : AS SHOWN		DRG 5-0022
DRAWN : -	DATE : JULY 2013	A

NOTES:

HARDSTAND

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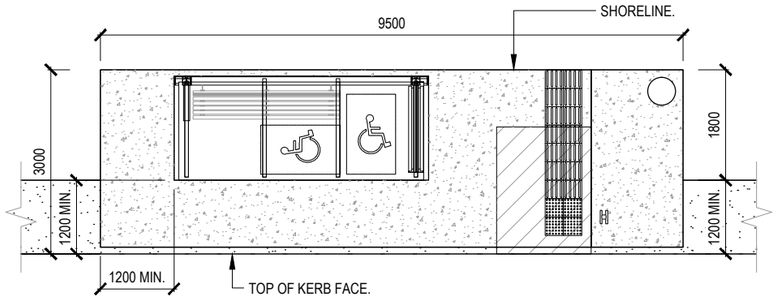

1 - CONSTRAINED SITE - FRONT/MID FOOTPATH
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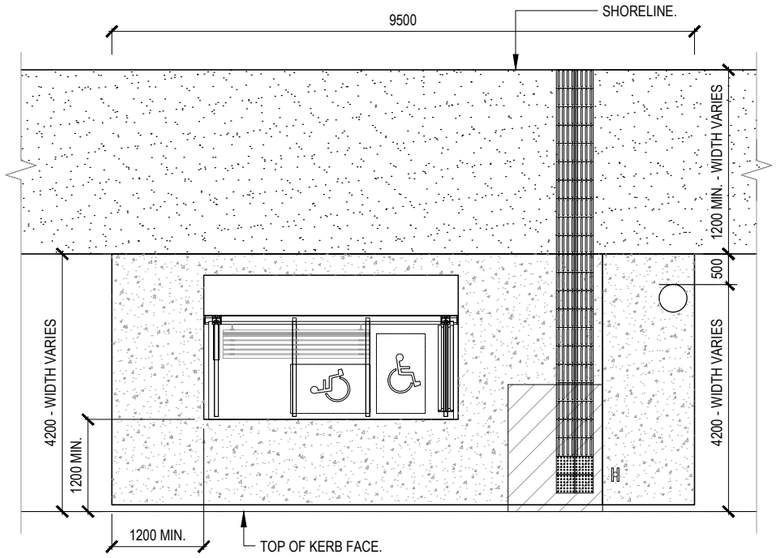
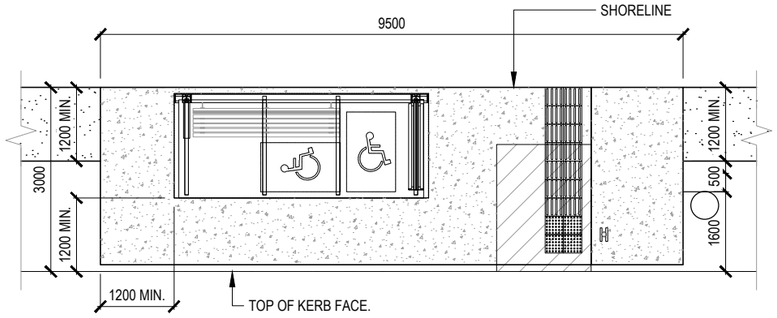
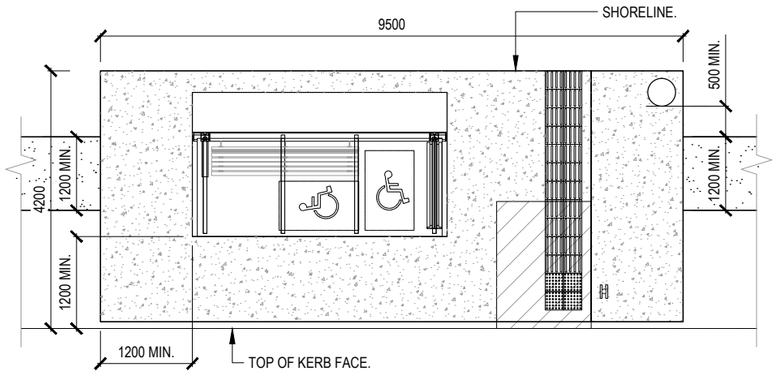


3 - HARDSTAND - SHARED ACCESS PATH BEHIND/ TYPE 2 SHELTER
1:100@A3



2 - CONSTRAINED SITE - MID/BACK FOOTPATH/ TYPE 1 SHELTER
1:100@A3



4 - HARDSTAND - MID/BACK FOOTPATH/ TYPE 2 SHELTER
1:100@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
INTERMEDIATE STOP - SITE LAYOUT - ACCESS EXAMPLES

SCALE : AS SHOWN		DRG 5-0025
DRAWN : -	DATE : JULY 2013	A

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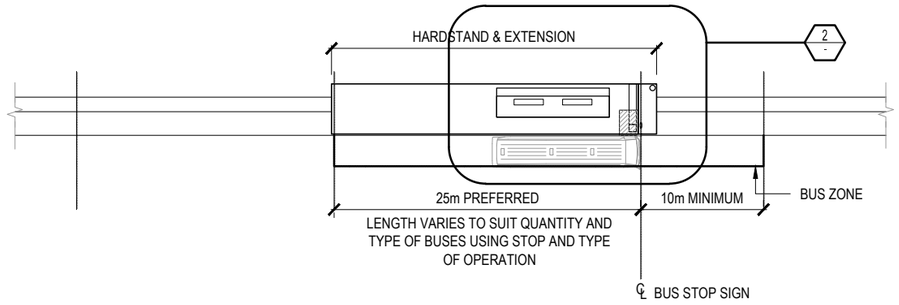

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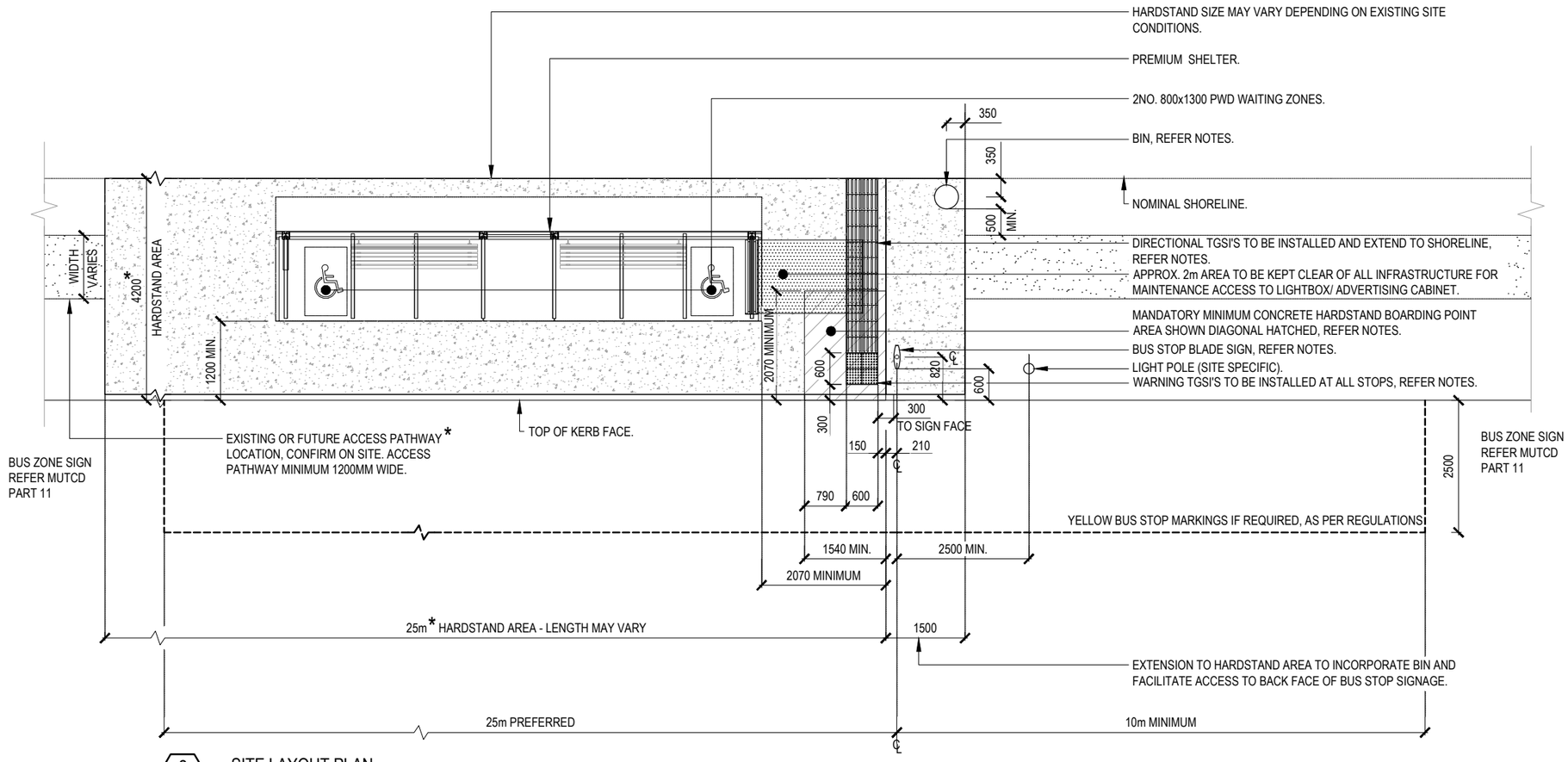

2 - SITE LAYOUT PLAN
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TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
PREMIUM STOP - SITE LAYOUT - WITHOUT INDENTED BUS BAY

SCALE : AS SHOWN		DRG 5-0031
DRAWN : -	DATE : JULY 2013	A

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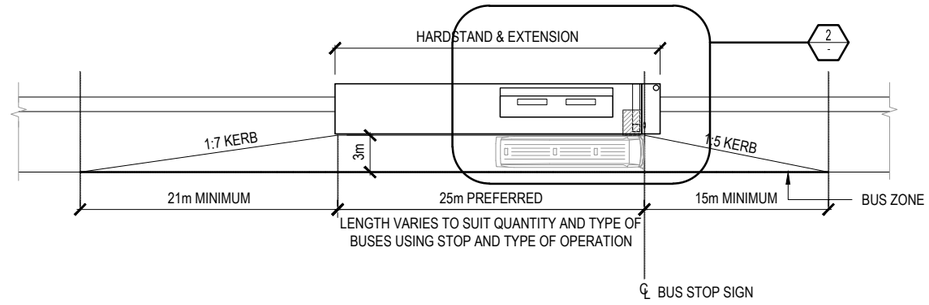

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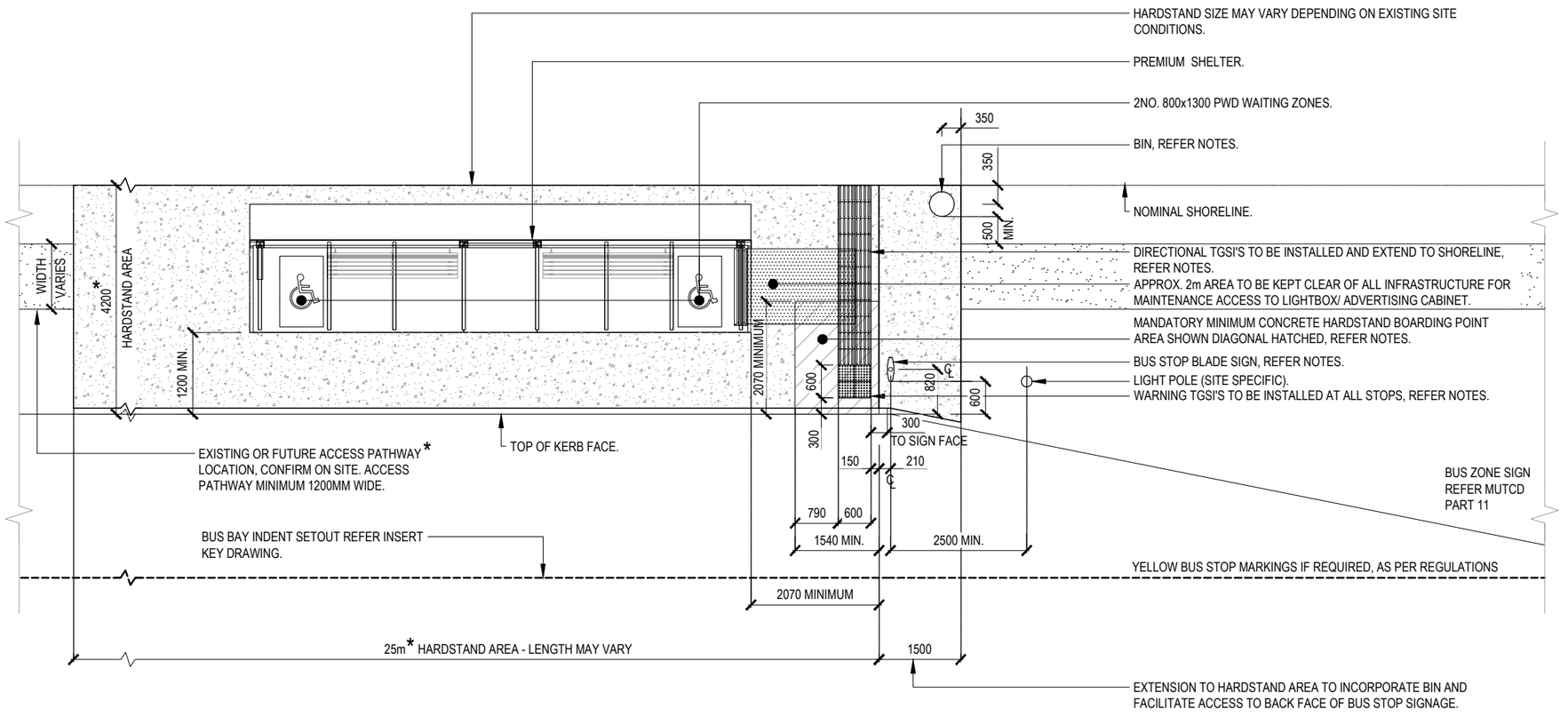

2 - SITE LAYOUT PLAN
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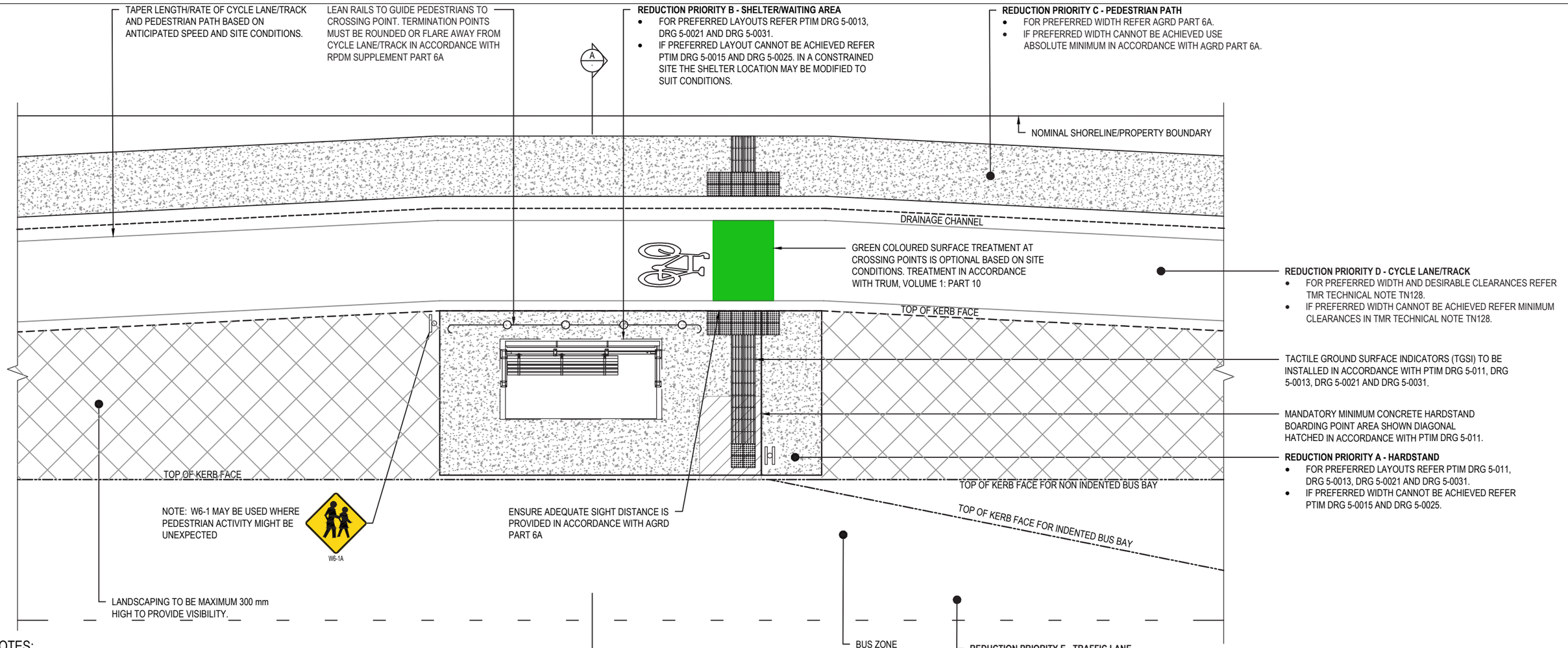
TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
PREMIUM STOP - SITE LAYOUT - WITH INDENTED BUS BAY

SCALE : AS SHOWN		DRG 5-0032
DRAWN : -	DATE : JULY 2013	A



NOTES:

GENERAL

1. ANY REDUCTION OF INFRASTRUCTURE ELEMENTS SHOULD BE CONSIDERED IN THE FOLLOWING ORDER
   - A) ALTERNATIVE HARDSTAND CONFIGURATION
   - B) ALTERNATIVE POSITION OF SHELTER/WAITING AREA
   - C) REDUCTION IN WIDTH OF PEDESTRIAN PATH
   - D) REDUCTION IN WIDTH OF CYCLE LANE/TRACK
   - E) REDUCTION IN WIDTH OF TRAFFIC LANE
2. ANY REDUCTION IN INFRASTRUCTURE ELEMENTS MUST NOT COMPROMISE ACCESS REQUIREMENTS AS DETAILED IN THE COMMONWEALTH DISABILITY STANDARDS FOR ACCESSIBLE PUBLIC TRANSPORT 2002.
3. ALL COMPONENTS SHALL COMPLY TO RELEVANT LOCAL COUNCIL STANDARDS.
4. IF THE LAYOUT SHOWN ON THIS DRAWING CANNOT BE ACHIEVED DUE TO SITE CONSTRAINTS REFER PTIM DRG SK 0403.
5. ONE-WAY CYCLE TRACKS ON EACH SIDE OF THE ROAD IS PREFERRED. IF THIS CANNOT BE ACHIEVED, THIS LAYOUT CAN BE MODIFIED TO SUIT A TWO-WAY CYCLE TRACK IN ACCORDANCE WITH CURRENT STANDARDS.

SHELTER/WAITING AREA

6. FOR OPTIONS OF SHELTER/WAITING AREA TYPES REFER PTIM DRG 5-0100.
7. SHELTER MUST NOT IMPEDE SIGHT LINES THROUGH BUS STOP AREA. CONSIDER SHELTER TYPES SIMILAR TO THE SUBURBAN SHELTER SHOWN IN PTIM DRG 5-0402.

CYCLE LANE/TRACK

8. CYCLE LANE/TRACK TO BE CONSTRUCTED WITH AC WEARING COURSE.

PEDESTRIAN PATH

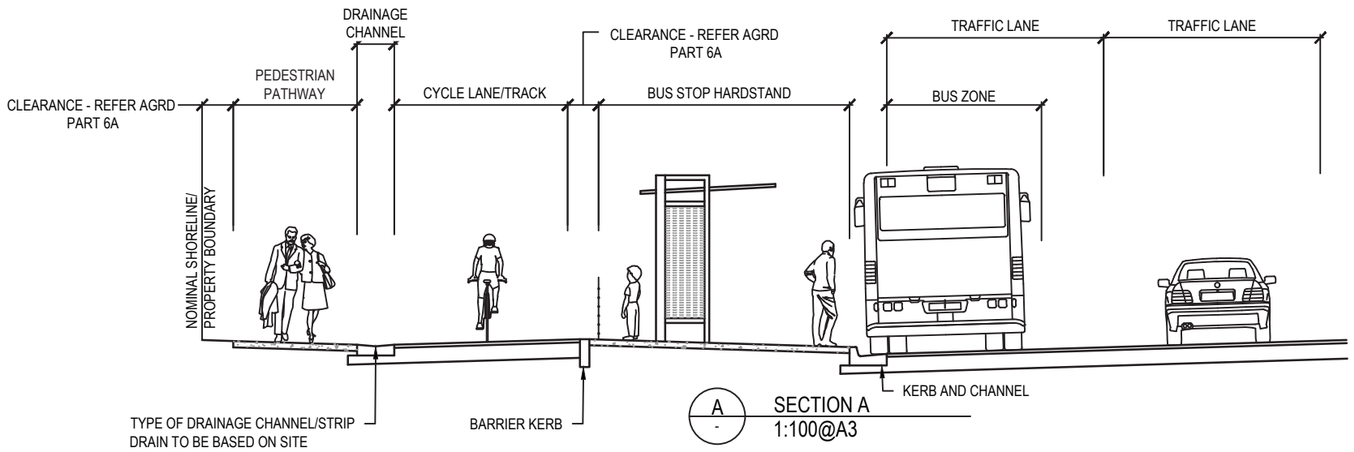
9. PEDESTRIAN PATH TO BE CONCRETE AND CONSTRUCTED IN ACCORDANCE WITH TMR/LOCAL COUNCIL REQUIREMENT.

DRAINAGE

10. DRAINAGE PITS ARE TO BE LOCATED BASED ON SITE CONDITIONS TO MINIMISE FLOW WIDTHS AT CROSSING POINTS.
11. DRAINAGE TO BE CONSIDERED TO ENSURE FLOW WIDTHS ARE NOT EXCEEDED AND FLOWS ARE NOT CONCENTRATED ACROSS CYCLE LANE.

A -

1 - SITE LAYOUT PLAN
1:100@A3



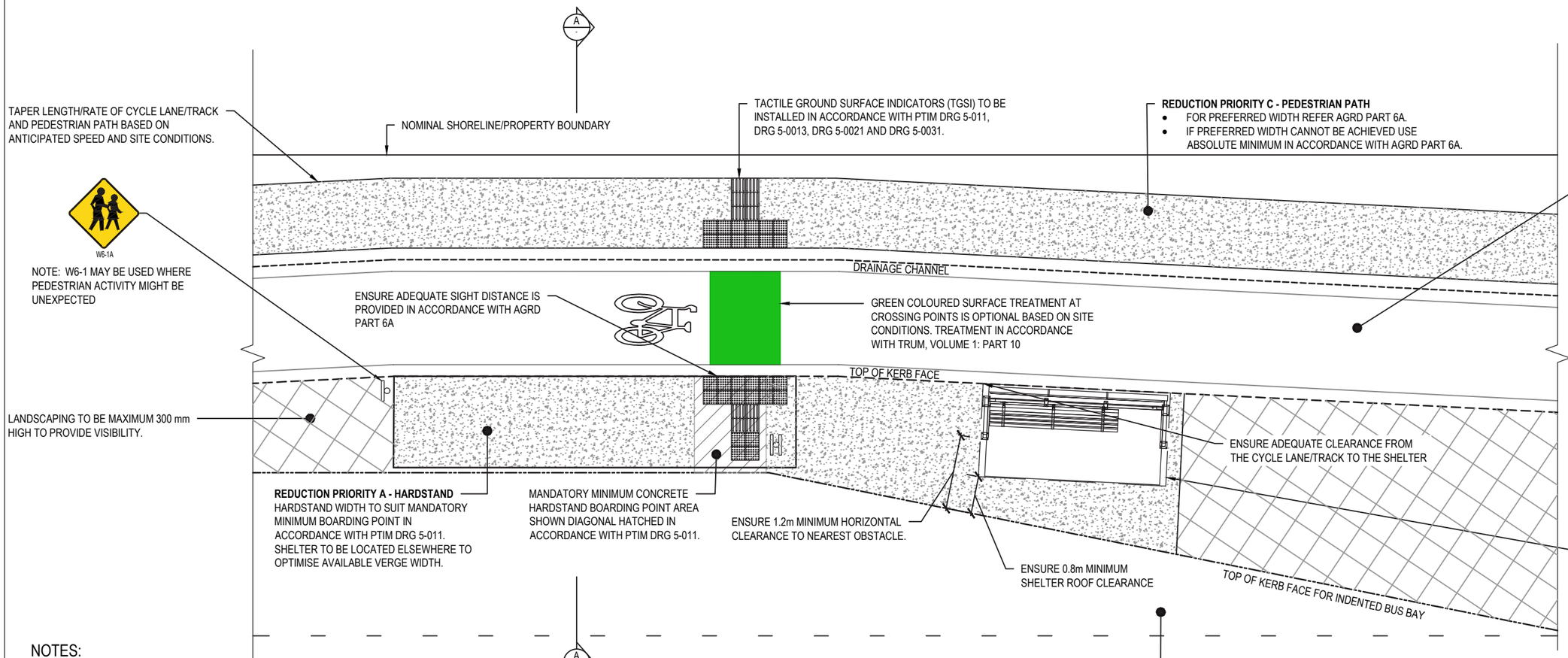
A - SECTION A
1:100@A3

TRANSLink

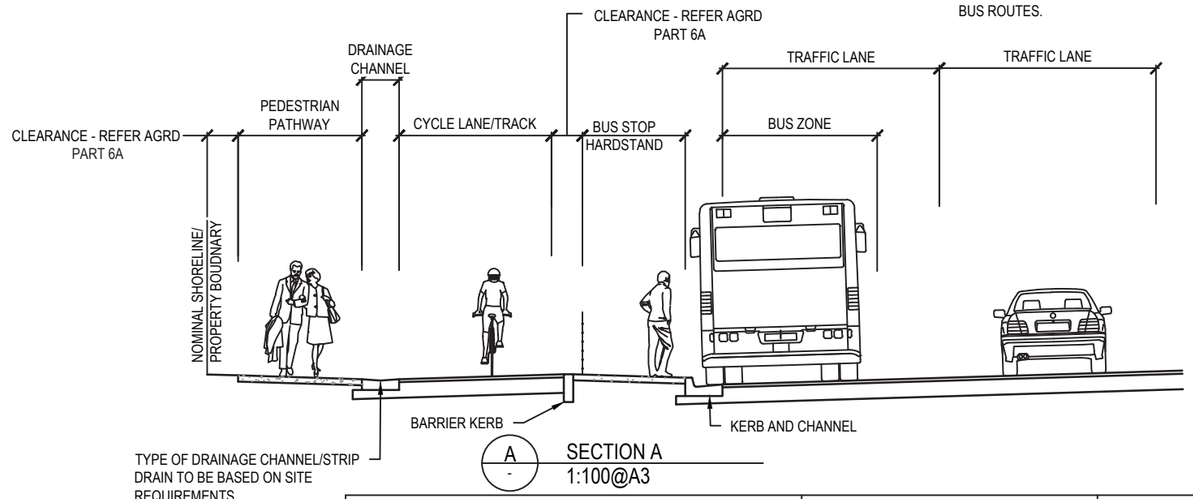
Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
CYCLE LANE/TRACK BEHIND BUS STOP

SCALE : AS SHOWN			DRG 5-0041
DRAWN : -	DATE : SEPTEMBER 2019	A	



1 - CONSTRAINED SITE - ALTERNATIVE SHELTER LOCATION
1:100@A3



A - SECTION A
1:100@A3

NOTES:

GENERAL

1. THIS LAYOUT SHOULD ONLY BE CONSIDERED IF THE LAYOUT SHOWN ON PTIM DRG SK 0401 CANNOT BE ACHIEVED DUE TO SITE CONSTRAINTS.
2. ANY REDUCTION OF INFRASTRUCTURE ELEMENTS SHOULD BE CONSIDERED IN THE FOLLOWING ORDER
   - A) ALTERNATIVE HARDSTAND CONFIGURATION
   - B) ALTERNATIVE POSITION OF SHELTER/WAITING AREA
   - C) REDUCTION IN WIDTH OF PEDESTRIAN PATH
   - D) REDUCTION IN WIDTH OF CYCLE LANE/TRACK
   - E) REDUCTION IN WIDTH OF TRAFFIC LANE
3. ANY REDUCTION IN INFRASTRUCTURE ELEMENTS MUST NOT COMPROMISE ACCESS REQUIREMENTS AS DETAILED IN THE COMMONWEALTH DISABILITY STANDARDS FOR ACCESSIBLE PUBLIC TRANSPORT 2002.
4. ALL COMPONENTS SHALL COMPLY TO RELEVANT LOCAL COUNCIL STANDARDS.
5. ONE-WAY CYCLE TRACKS ON EACH SIDE OF THE ROAD IS PREFERRED. IF THIS CANNOT BE ACHIEVED, THIS LAYOUT CAN BE MODIFIED TO SUIT A TWO-WAY CYCLE TRACK IN ACCORDANCE WITH CURRENT STANDARDS.

SHELTER/WAITING AREA

6. FOR OPTIONS OF SHELTER/WAITING AREA TYPES REFER PTIM DRG 5-0100.
7. SHELTER MUST NOT IMPEDE SIGHT LINES THROUGH BUS STOP AREA. CONSIDER SHELTER TYPES SIMILAR TO THE SUBURBAN SHELTER SHOWN IN PTIM DRG 5-0402.
8. LEAN RAILS TO GUIDE PEDESTRIANS TO CROSSING POINT MAY BE ADDED ALONG THE HARDSTAND IF HIGH VOLUMES OF PEDESTRIANS ARE EXPECTED. TERMINATION POINTS MUST BE ROUNDED OR FLARE AWAY FROM SHARED PATH IN ACCORDANCE WITH RPDM SUPPLEMENT PART 6A.

CYCLE LANE/TRACK

9. CYCLE LANE/TRACK TO BE CONSTRUCTED WITH AC WEARING COURSE.

PEDESTRIAN PATH

10. PEDESTRIAN PATH TO BE CONCRETE AND CONSTRUCTED IN ACCORDANCE WITH TMR/LOCAL COUNCIL REQUIREMENT.

DRAINAGE

11. DRAINAGE PITS ARE TO BE LOCATED BASED ON SITE CONDITIONS TO MINIMISE FLOW WIDTHS AT CROSSING POINTS.
12. DRAINAGE TO BE CONSIDERED TO ENSURE FLOW WIDTHS ARE NOT EXCEEDED AND FLOWS ARE NOT CONCENTRATED ACROSS CYCLE LANE.

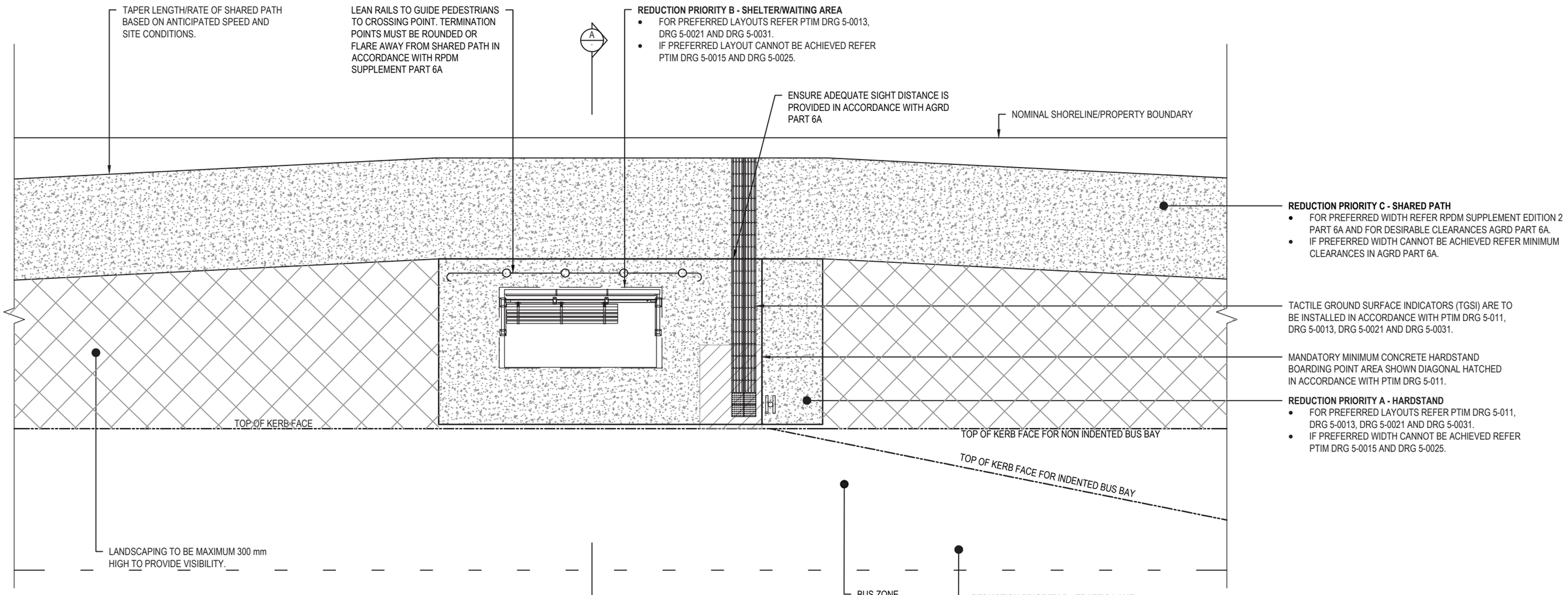
TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER

CYCLE LANE/TRACK BEHIND BOARDING HARDSTAND - ALTERNATE SHELTER LOCATION EXAMPLE

SCALE : AS SHOWN		DRG 5-0042				
DRAWN : -	DATE : SEPTEMBER 2019	A				



1 - SITE LAYOUT PLAN
1:100@A3

NOTES:

GENERAL

1. ANY REDUCTION OF INFRASTRUCTURE ELEMENTS SHOULD BE CONSIDERED IN THE FOLLOWING ORDER
   - A) ALTERNATIVE HARDSTAND CONFIGURATION
   - B) ALTERNATIVE POSITION OF SHELTER/WAITING AREA
   - C) REDUCTION IN WIDTH OF SHARED PATH
   - D) REDUCTION IN WIDTH OF TRAFFIC LANE
2. ANY REDUCTION IN INFRASTRUCTURE ELEMENTS MUST NOT COMPROMISE ACCESS REQUIREMENTS AS DETAILED IN THE COMMONWEALTH DISABILITY STANDARDS FOR ACCESSIBLE PUBLIC TRANSPORT 2002.
3. ALL COMPONENTS SHALL COMPLY TO RELEVANT LOCAL COUNCIL STANDARDS.
4. IF THE LAYOUT SHOWN ON THIS DRAWING CANNOT BE ACHIEVED DUE TO SITE CONSTRAINTS REFER PTIM DRG SKT 0803.
5. ONE-WAY CYCLE TRACKS ON EACH SIDE OF THE ROAD IS PREFERRED. IF THIS CANNOT BE ACHIEVED, THIS LAYOUT CAN BE MODIFIED TO SUIT A TWO-WAY CYCLE TRACK IN ACCORDANCE WITH CURRENT STANDARDS.

SHELTER/WAITING AREA

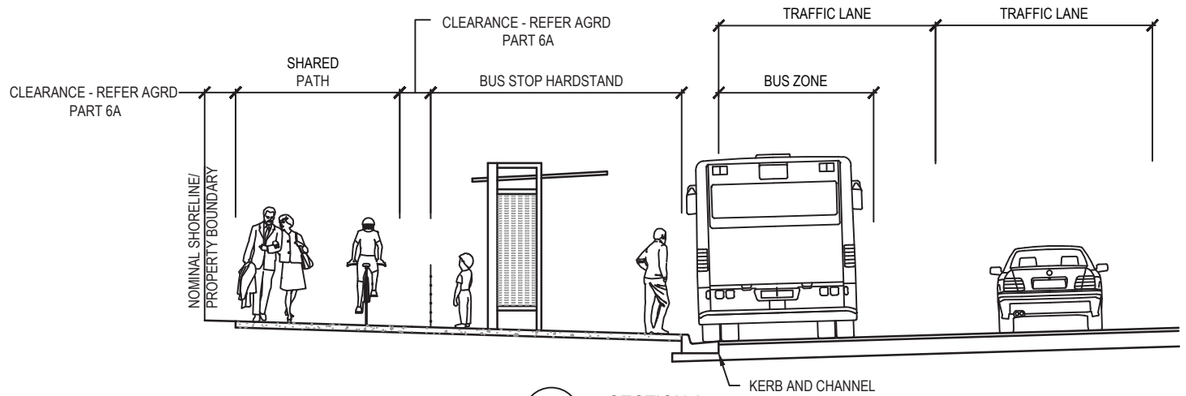
6. FOR OPTIONS OF SHELTER/WAITING AREA TYPES REFER PTIM DRG 5-0100.
7. SHELTER USED MUST NOT IMPEDE SIGHT LINES THROUGH BUS STOP AREA. CONSIDER SHELTER TYPES SIMILAR TO THE SUBURBAN SHELTER SHOWN IN PTIM DRG 5-0402.

SHARED PATH

8. SHARED PATH TO BE CONCRETE AND CONSTRUCTED IN ACCORDANCE WITH TMR/LOCAL COUNCIL REQUIREMENT.

DRAINAGE

9. DRAINAGE PITS ARE TO BE LOCATED BASED ON SITE CONDITIONS TO MINIMISE FLOW WIDTHS AT CROSSING POINTS.



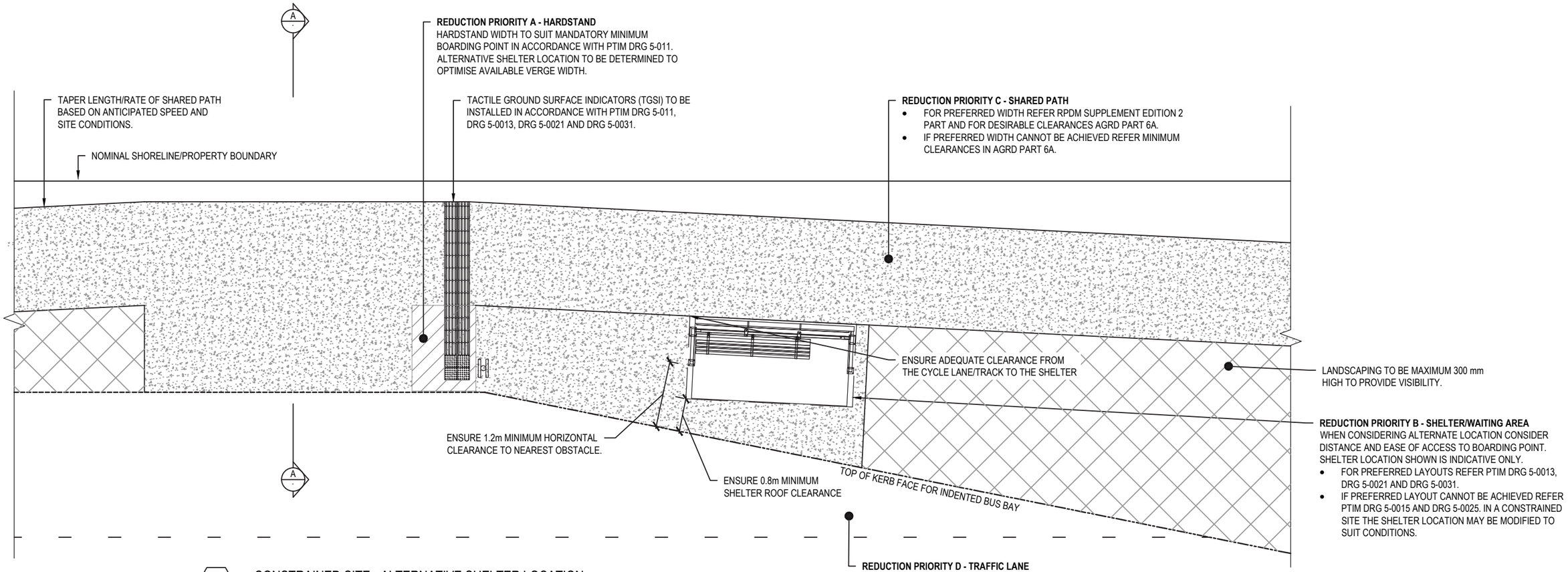
A - SECTION A
1:100@A3

TRANSLink

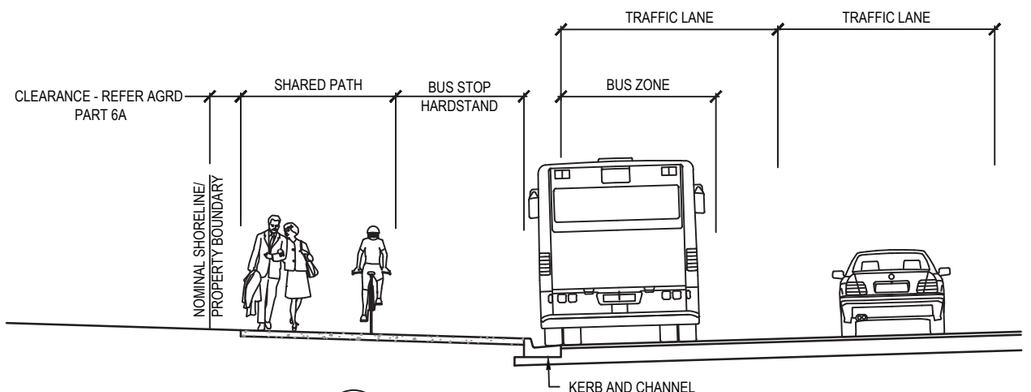
Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
SHARED PATH BEHIND BUS STOP

SCALE : AS SHOWN		DRG 5-0043				
DRAWN : -	DATE : SEPTEMBER 2019	A				



1 - CONSTRAINED SITE - ALTERNATIVE SHELTER LOCATION
1:100@A3



A - SECTION A
1:100@A3

NOTES:

GENERAL

1. THIS LAYOUT SHOULD ONLY BE CONSIDERED IF THE LAYOUT SHOWN ON PTIM DRG SK 0801 CANNOT BE ACHIEVED DUE TO SITE CONSTRAINTS.
2. ANY REDUCTION OF INFRASTRUCTURE ELEMENTS SHOULD BE CONSIDERED IN THE FOLLOWING ORDER
   - A) ALTERNATIVE HARDSTAND CONFIGURATION
   - B) ALTERNATIVE POSITION OF SHELTER/WAITING AREA
   - C) REDUCTION IN WIDTH OF SHARED PATH
   - D) REDUCTION IN WIDTH OF TRAFFIC LANE
3. ANY REDUCTION IN INFRASTRUCTURE ELEMENTS MUST NOT COMPROMISE ACCESS REQUIREMENTS AS DETAILED IN THE COMMONWEALTH DISABILITY STANDARDS FOR ACCESSIBLE PUBLIC TRANSPORT 2002.
4. ALL COMPONENTS SHALL COMPLY TO RELEVANT LOCAL COUNCIL STANDARDS.

SHELTER/WAITING AREA

5. FOR OPTIONS OF SHELTER/WAITING AREA TYPES REFER PTIM DRG 5-0100.
6. SHELTER MUST NOT IMPEDE SIGHT LINES THROUGH BUS STOP AREA. CONSIDER SHELTER TYPES SIMILAR TO THE SUBURBAN SHELTER SHOWN IN PTIM DRG 5-0402.

SHARED PATH

7. SHARED PATH TO BE CONCRETE AND CONSTRUCTED IN ACCORDANCE WITH TMR/LOCAL COUNCIL REQUIREMENT.

DRAINAGE

8. DRAINAGE PITS ARE TO BE LOCATED BASED ON SITE CONDITIONS TO MINIMISE FLOW WIDTHS AT CROSSING POINTS.

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
SHARED PATH BEHIND BOARDING HARDSTAND - ALTERNATE SHELTER LOCATION EXAMPLE

SCALE : AS SHOWN			DRG 5-0044				
DRAWN : -	DATE : AUGUST 2019	A					

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

7 FOR DETAILS OF BUS STOP SIGNAGE REFER TO TRANSLINK SIGNAGE MANUAL.

8 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

9 LIGHTING DESIGN TO COMPLY WITH THE RELEVANT STANDARDS AND BE COMPLIANT WITH DSAPT.

ADDITIONAL REQUIREMENTS

10 ALL MEASUREMENTS AND DIMENSIONS SHALL HAVE AN APPLIED TOLERANCE OF 3MM.

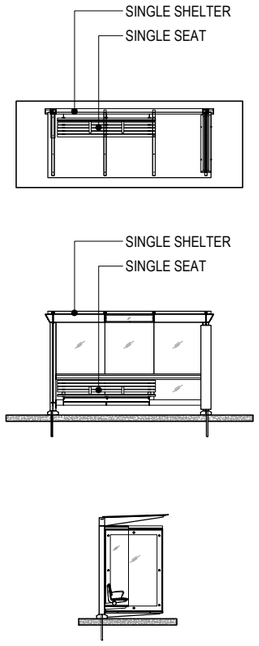
11 SHELTER MANUFACTURER TO PROVIDE ENGINEERING CERTIFICATION FOR SHELTER CONSTRUCTION

12 ALL BUS STOPS TO BE DSAPT COMPLIANT, FOR FURTHER GUIDANCE REFER TO THE RELEVANT STANDARDS, TRANSLINK GUIDANCE AND RELEVANT LOCAL GOVERNMENT REQUIREMENTS.

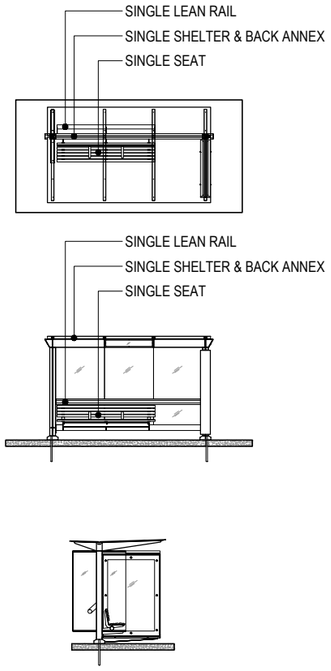
13 ALL BUS STOP COMPONENTS SHOULD BE POSITIONED IN CONSIDERATION OF RELEVANT ONSITE CONDITIONS WITH REFERENCE TO THE GUIDANCE CONTAINED WITHIN THE PTIM, AND FOR ADDITIONAL REQUIREMENTS AND DESIGN ALTERNATIVES REFER TO THE COMPONENTS TABLE CONTAINED IN THE PTIM.

14 REFER TO PTIM GLOSSARY FOR DEFINITIONS OF TERMS, AND, PTIM ABBREVIATIONS FOR DEFINITIONS OF ACRONYMS.

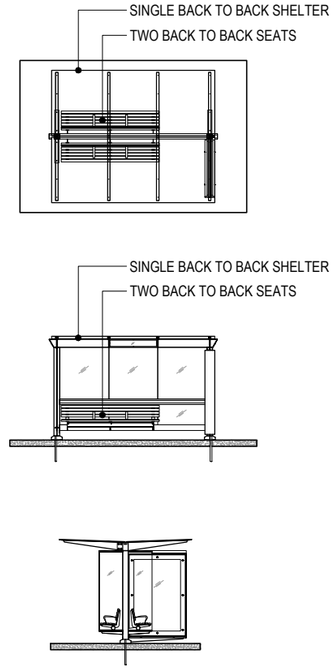
15 ALL DRAWING DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



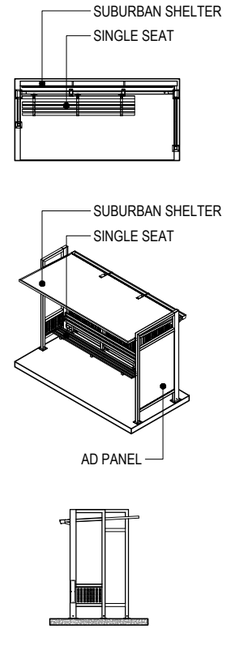
SHELTER TYPE 1A
REFER DRAWING 5-0101



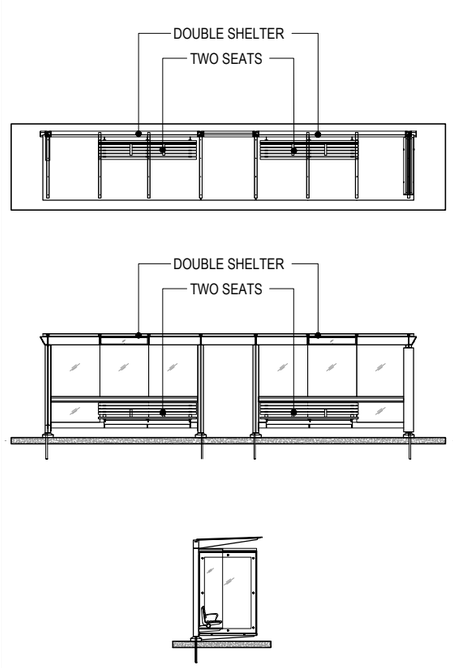
SHELTER TYPE 2A
REFER DRAWING 5-0201



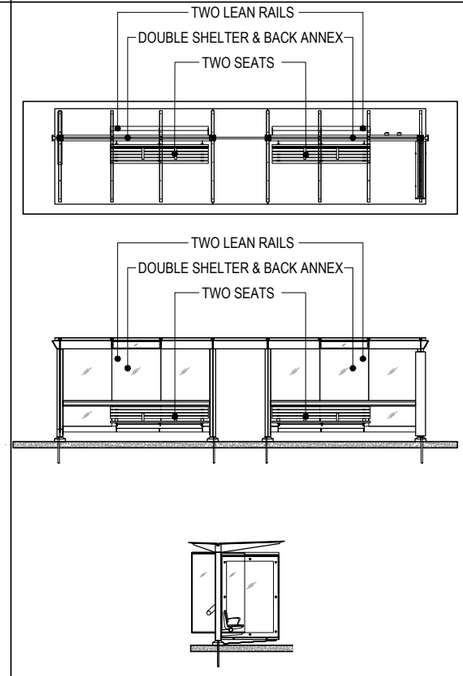
SHELTER TYPE 3A
REFER DRAWING 5-0301



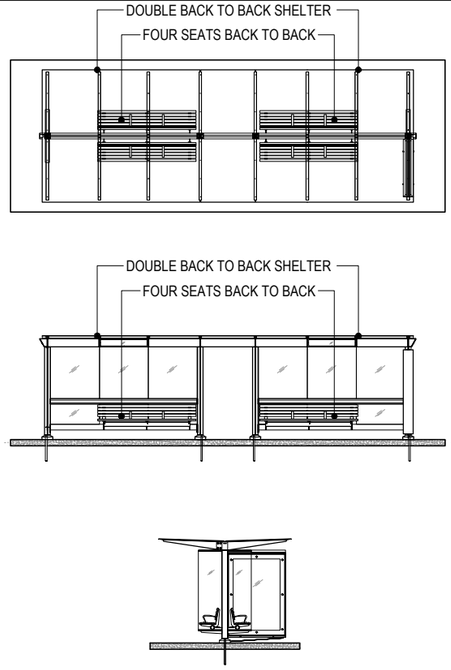
SUBURBAN SHELTER
REFER DRAWING 5-0401



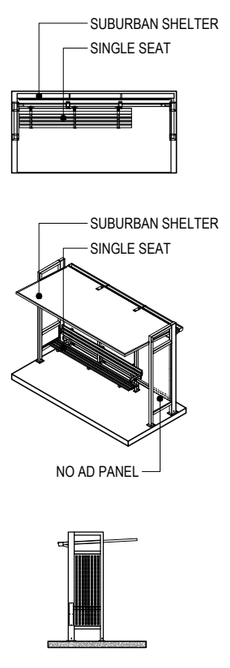
SHELTER TYPE 1B
REFER DRAWING 5-0102



SHELTER TYPE 2B
REFER DRAWING 5-0202



SHELTER TYPE 3B
REFER DRAWING 5-0302



SUBURBAN SHELTER
REFER DRAWING 5-0402

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - OVERVIEW

SCALE : AS SHOWN	NTS	DRG 5-0100
DRAWN : -	DATE : JULY 2013	A

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

7 FOR DETAILS OF BUS STOP SIGNAGE REFER TO TRANSLINK SIGNAGE MANUAL.

8 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

9 LIGHTING DESIGN TO COMPLY WITH THE RELEVANT STANDARDS AND BE COMPLIANT WITH DSAPT.

ADDITIONAL REQUIREMENTS

10 ALL MEASUREMENTS AND DIMENSIONS SHALL HAVE AN APPLIED TOLERANCE OF 3MM.

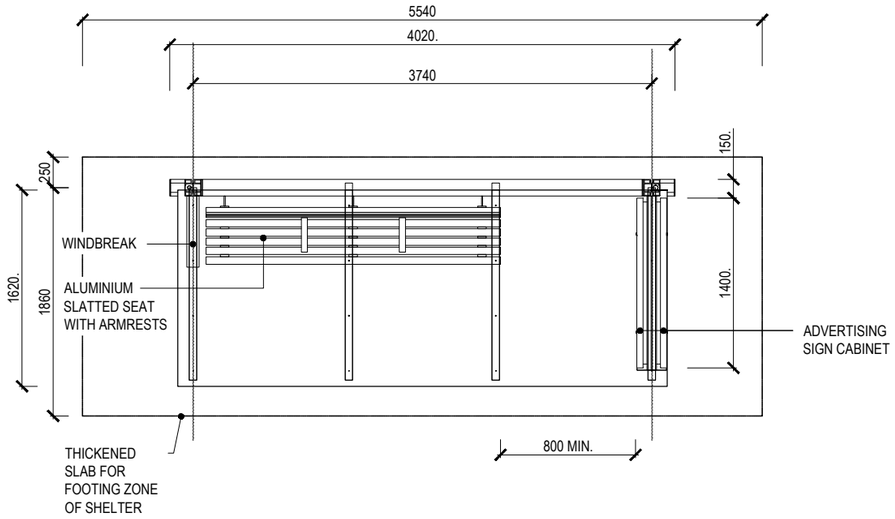
11 SHELTER MANUFACTURER TO PROVIDE ENGINEERING CERTIFICATION FOR SHELTER CONSTRUCTION

12 ALL BUS STOPS TO BE DSAPT COMPLIANT, FOR FURTHER GUIDANCE REFER TO THE RELEVANT STANDARDS, TRANSLINK GUIDANCE AND RELEVANT LOCAL GOVERNMENT REQUIREMENTS.

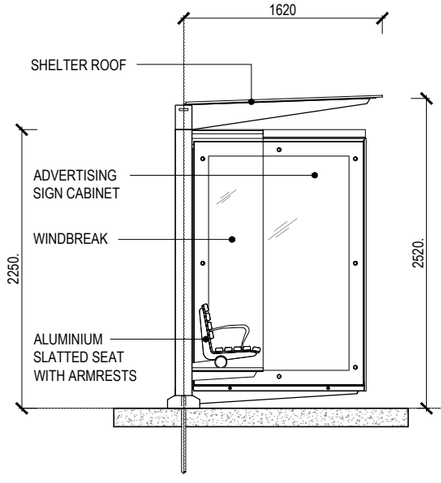
13 ALL BUS STOP COMPONENTS SHOULD BE POSITIONED IN CONSIDERATION OF RELEVANT ONSITE CONDITIONS WITH REFERENCE TO THE GUIDANCE CONTAINED WITHIN THE PTIM, AND FOR ADDITIONAL REQUIREMENTS AND DESIGN ALTERNATIVES REFER TO THE COMPONENTS TABLE CONTAINED IN THE PTIM.

14 REFER TO PTIM GLOSSARY FOR DEFINITIONS OF TERMS, AND, PTIM ABBREVIATIONS FOR DEFINITIONS OF ACRONYMS.

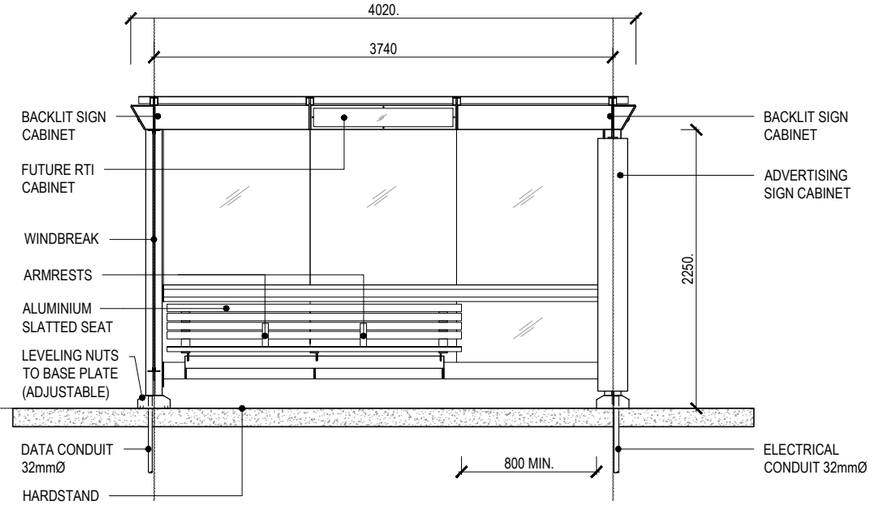
15 ALL DRAWING DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



1 - SHELTER PLAN
1:50@A3



2 - SIDE ELEVATION
1:50@A3



3 - FRONT ELEVATION
1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 1A

SCALE : AS SHOWN		DRG 5-0101
DRAWN : -	DATE : JULY 2013	A

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

7 FOR DETAILS OF BUS STOP SIGNAGE REFER TO TRANSLINK SIGNAGE MANUAL.

8 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

9 LIGHTING DESIGN TO COMPLY WITH THE RELEVANT STANDARDS AND BE COMPLIANT WITH DSAPT.

ADDITIONAL REQUIREMENTS

10 ALL MEASUREMENTS AND DIMENSIONS SHALL HAVE AN APPLIED TOLERANCE OF 3MM.

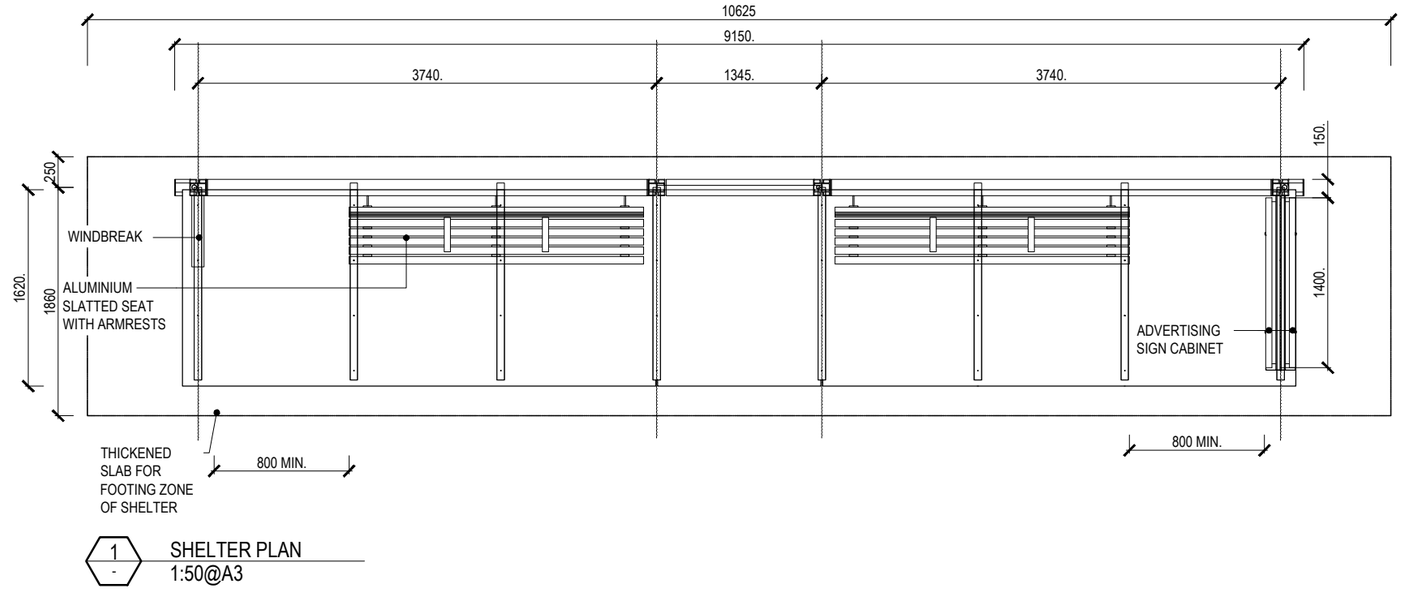
11 SHELTER MANUFACTURER TO PROVIDE ENGINEERING CERTIFICATION FOR SHELTER CONSTRUCTION

12 ALL BUS STOPS TO BE DSAPT COMPLIANT, FOR FURTHER GUIDANCE REFER TO THE RELEVANT STANDARDS, TRANSLINK GUIDANCE AND RELEVANT LOCAL GOVERNMENT REQUIREMENTS.

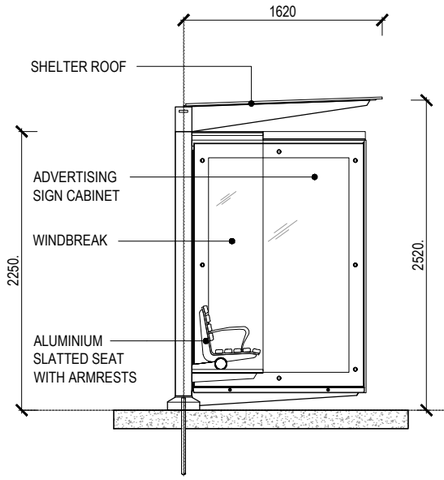
13 ALL BUS STOP COMPONENTS SHOULD BE POSITIONED IN CONSIDERATION OF RELEVANT ONSITE CONDITIONS WITH REFERENCE TO THE GUIDANCE CONTAINED WITHIN THE PTIM, AND FOR ADDITIONAL REQUIREMENTS AND DESIGN ALTERNATIVES REFER TO THE COMPONENTS TABLE CONTAINED IN THE PTIM.

14 REFER TO PTIM GLOSSARY FOR DEFINITIONS OF TERMS, AND, PTIM ABBREVIATIONS FOR DEFINITIONS OF ACRONYMS.

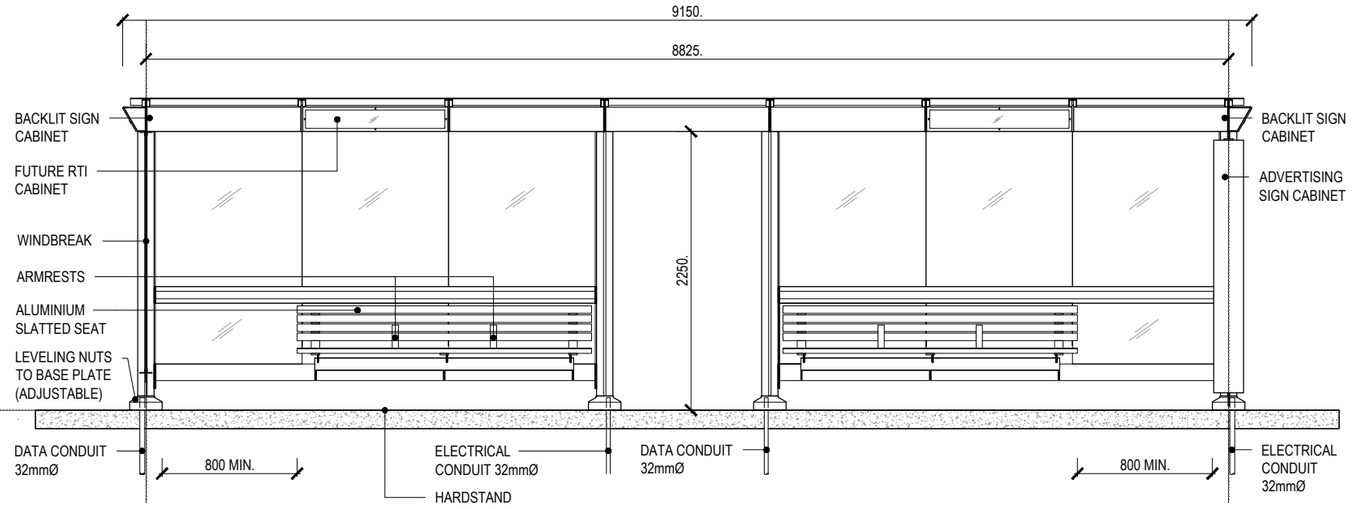
15 ALL DRAWING DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



1 - SHELTER PLAN 1:50@A3



2 - SIDE ELEVATION 1:50@A3



3 - FRONT ELEVATION 1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 1B

SCALE : AS SHOWN			DRG 5-0102
DRAWN : -	DATE : JULY 2013	A	

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

7 FOR DETAILS OF BUS STOP SIGNAGE REFER TO TRANSLINK SIGNAGE MANUAL.

8 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

9 LIGHTING DESIGN TO COMPLY WITH THE RELEVANT STANDARDS AND BE COMPLIANT WITH DSAPT.

ADDITIONAL REQUIREMENTS

10 ALL MEASUREMENTS AND DIMENSIONS SHALL HAVE AN APPLIED TOLERANCE OF 3MM.

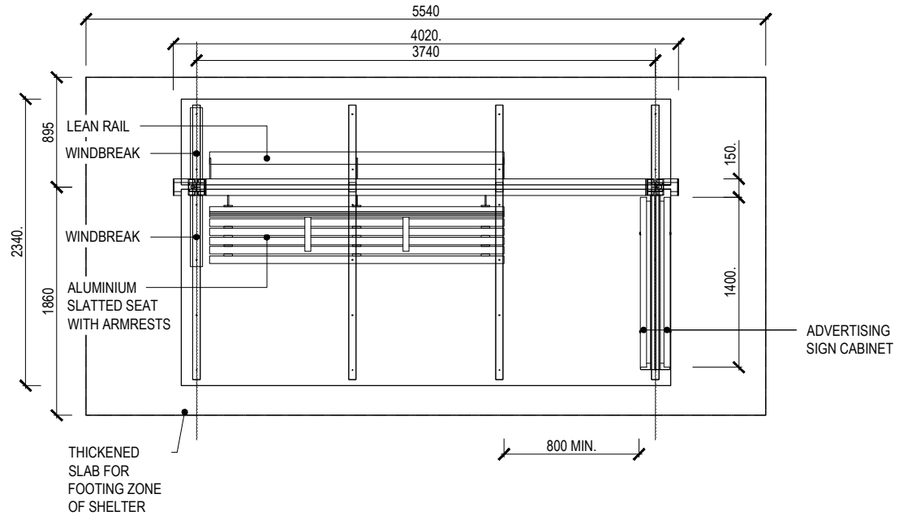
11 SHELTER MANUFACTURER TO PROVIDE ENGINEERING CERTIFICATION FOR SHELTER CONSTRUCTION

12 ALL BUS STOPS TO BE DSAPT COMPLIANT, FOR FURTHER GUIDANCE REFER TO THE RELEVANT STANDARDS, TRANSLINK GUIDANCE AND RELEVANT LOCAL GOVERNMENT REQUIREMENTS.

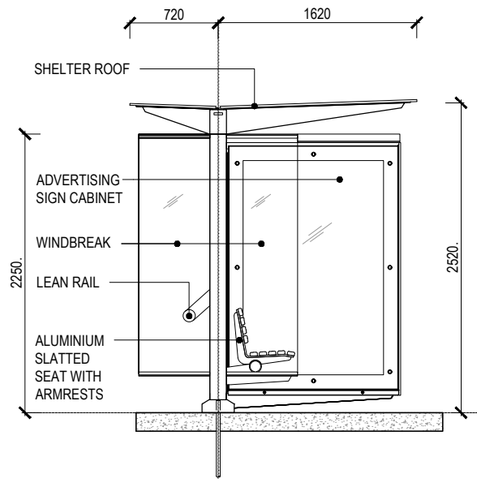
13 ALL BUS STOP COMPONENTS SHOULD BE POSITIONED IN CONSIDERATION OF RELEVANT ONSITE CONDITIONS WITH REFERENCE TO THE GUIDANCE CONTAINED WITHIN THE PTIM, AND FOR ADDITIONAL REQUIREMENTS AND DESIGN ALTERNATIVES REFER TO THE COMPONENTS TABLE CONTAINED IN THE PTIM.

14 REFER TO PTIM GLOSSARY FOR DEFINITIONS OF TERMS, AND, PTIM ABBREVIATIONS FOR DEFINITIONS OF ACRONYMS.

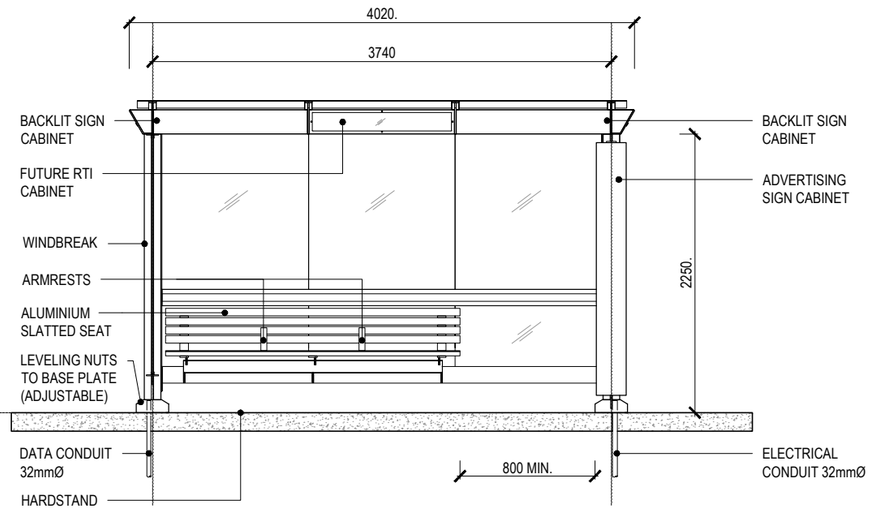
15 ALL DRAWING DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



1 - SHELTER PLAN
1:50@A3



2 - SIDE ELEVATION
1:50@A3



3 - FRONT ELEVATION
1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 2A

SCALE : AS SHOWN		DRG 5-0201
DRAWN : -	DATE : JULY 2013	A

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

7 FOR DETAILS OF BUS STOP SIGNAGE REFER TO TRANSLINK SIGNAGE MANUAL.

8 BUS STOP SEAT SHOULD INCLUDE ANODISED ALUMINIUM BATTENS WITH ARMRESTS ALONG THE SEAT. SEATS SHOULD BE BOLTED TO HARDSTAND AREA, AND MADE FROM EASILY MAINTAINED MATERIALS. SEATS TO BE COMPLIANT WITH DSAPT. WHERE A SEAT ABUTS A CONTINUOUS ACCESSIBLE PATH OF TRAVEL, ENSURE MINIMUM 30% LUMINANCE CONTRAST AGAINST BACKGROUND (E.G. FLOORING).

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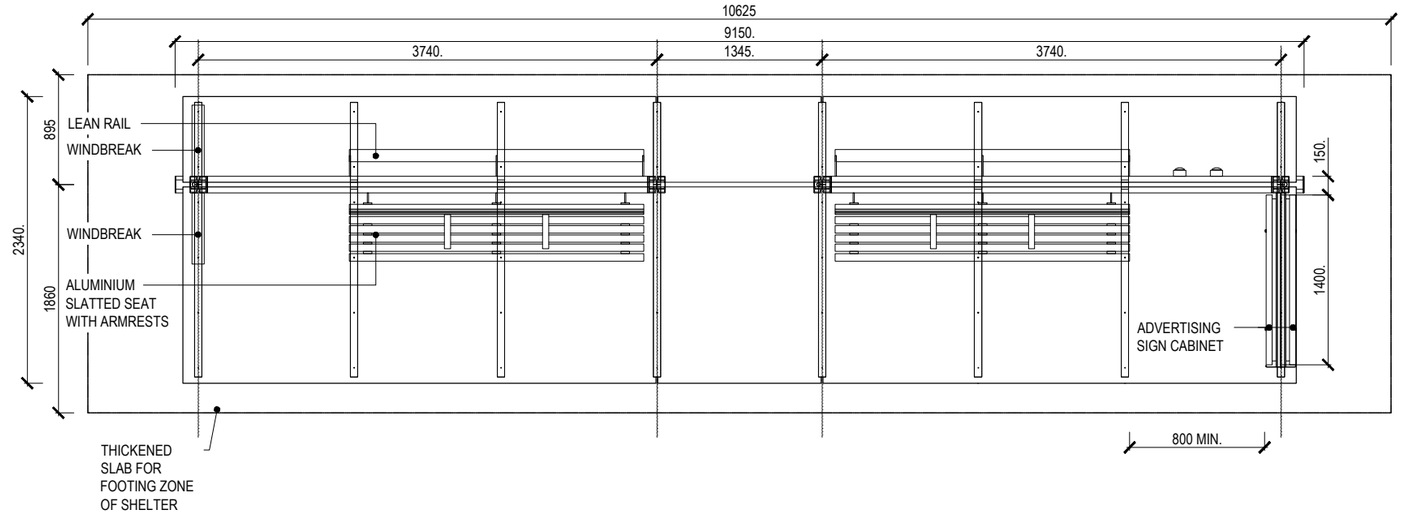
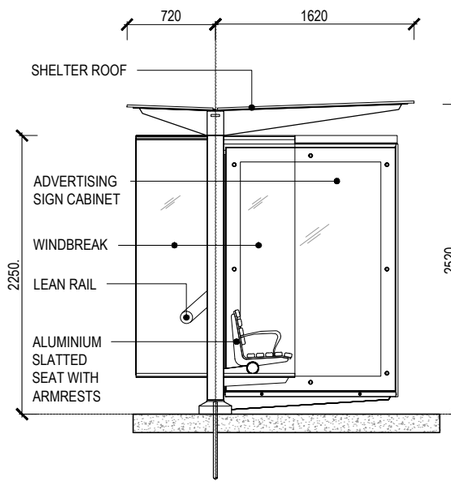
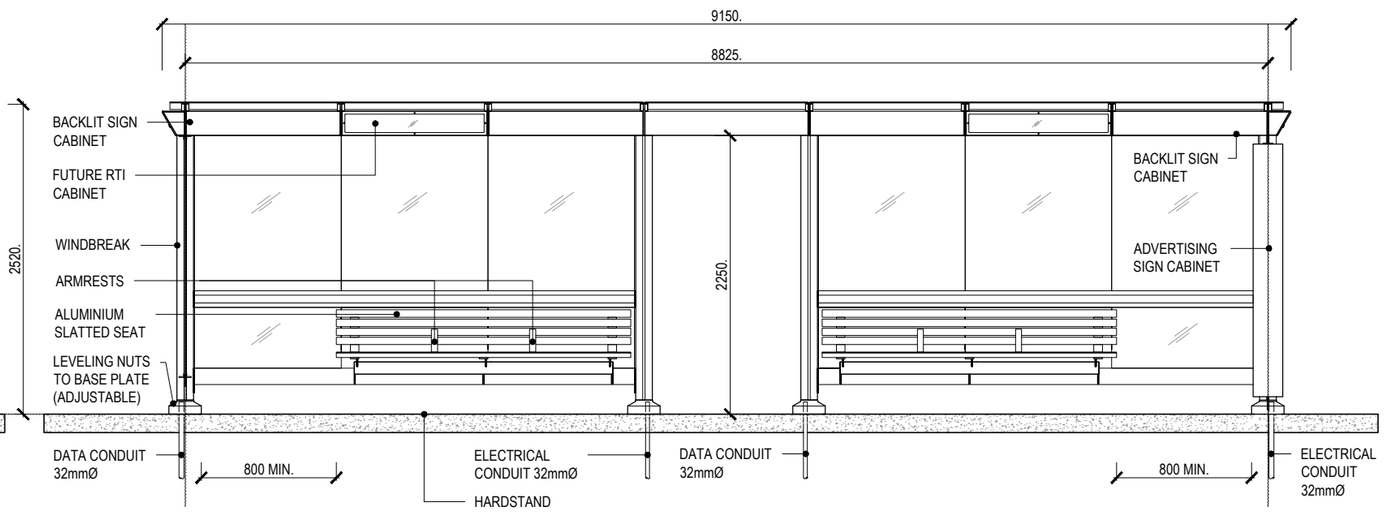


1 - SHELTER PLAN 1:50@A3



2 - SIDE ELEVATION 1:50@A3



3 - FRONT ELEVATION 1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 2B

SCALE : AS SHOWN			DRG 5-0202
DRAWN : -	DATE : JULY 2013	A	

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

2 HARDSTAND/ SLAB DESIGN TO BE SUITED TO GRADIENTS NOT GREATER THAN 2% FALL PRIOR TO MECHANICAL SHIMS.

3 SHELTER FOOTING DESIGN BY OTHERS AND TO LOCAL GOVERNMENT REQUIREMENTS.

SHELTER & SITE LAYOUT

4 FOR FURTHER INFORMATION AND GUIDANCE ON BUS SHELTER LOCATIONAL REQUIREMENTS AND SITE PLACEMENT REFER TO THE PTIM SITE LAYOUT DRAWINGS.

5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

6 SHELTER PAINTWORK TO MEET RELEVANT AUSTRALIAN STANDARDS INCLUDING BUT NOT LIMITED TO AS3715, AS2311, AS2312.

FURNITURE, SIGNAGE & LIGHTING

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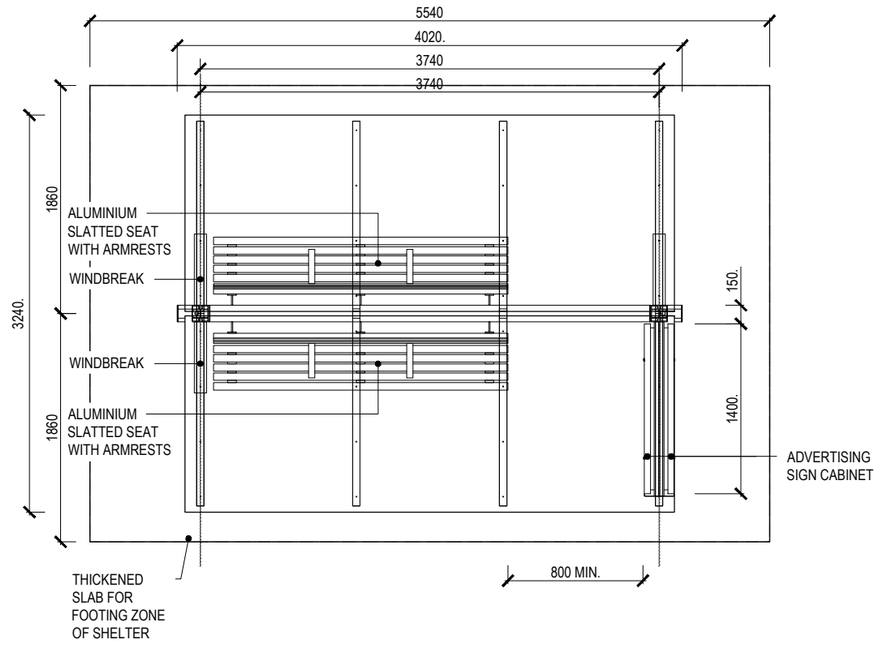
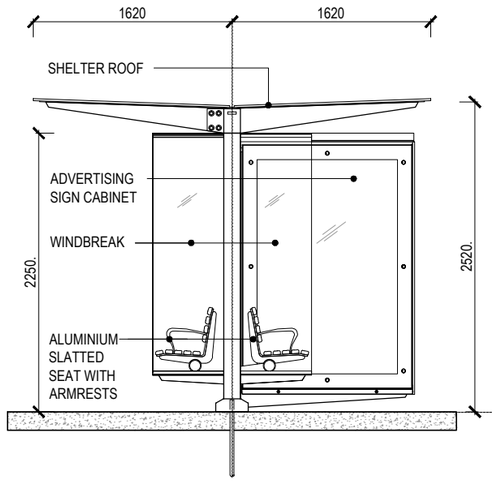
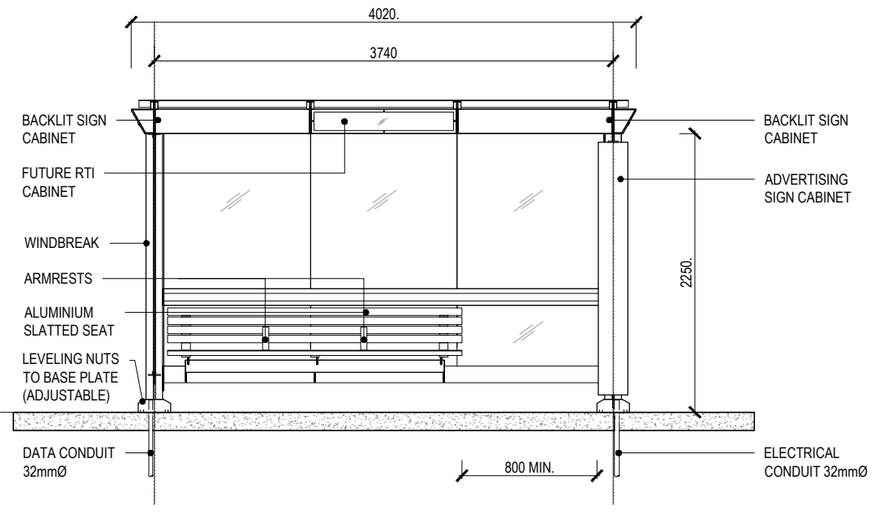


1 - SHELTER PLAN 1:50@A3



2 - SIDE ELEVATION 1:50@A3



3 - FRONT ELEVATION 1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 3A

SCALE : AS SHOWN			DRG 5-0301
DRAWN : -	DATE : JULY 2013	A	

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

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SHELTER & SITE LAYOUT

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5 SHELTER STRUCTURE COLOUR TO BE RESINE JON

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FURNITURE, SIGNAGE & LIGHTING

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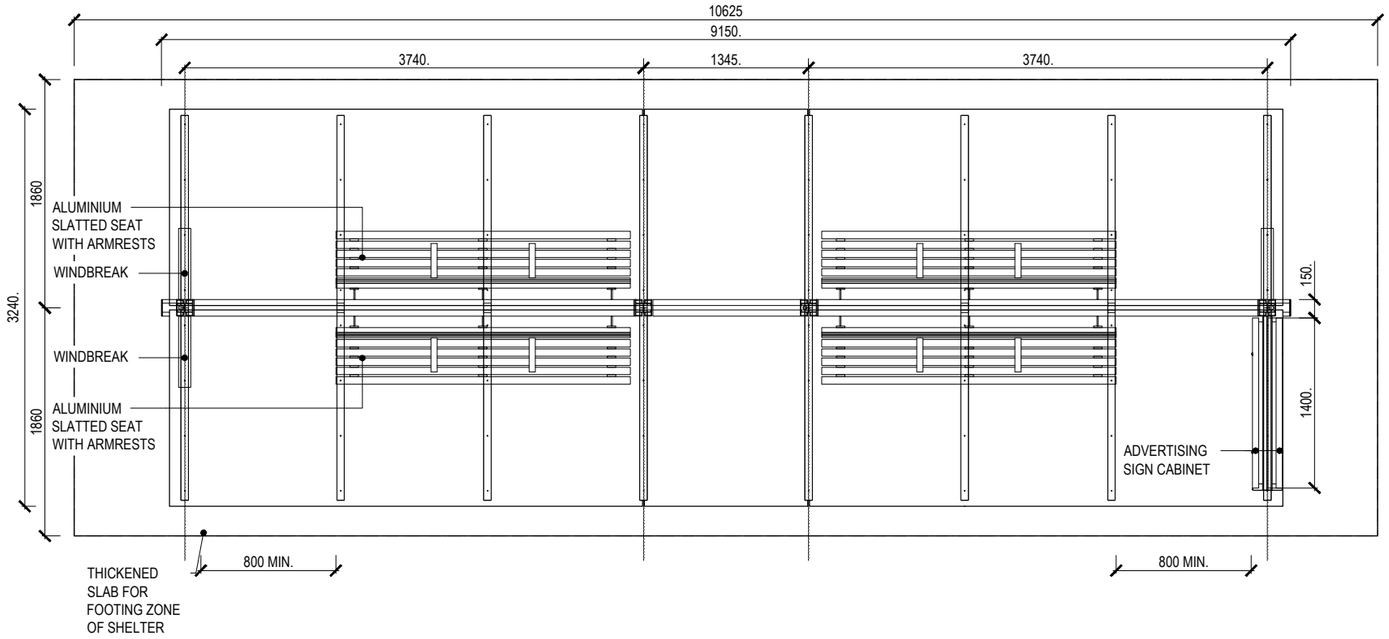
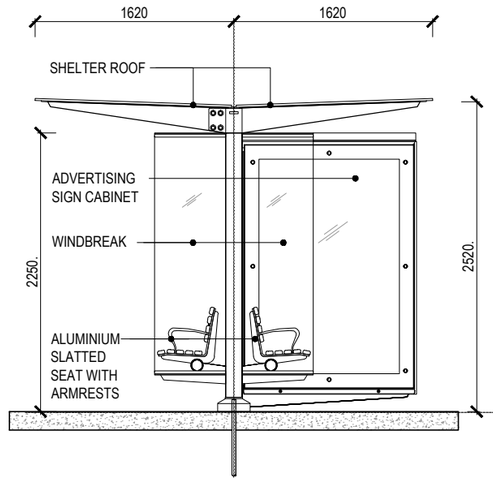
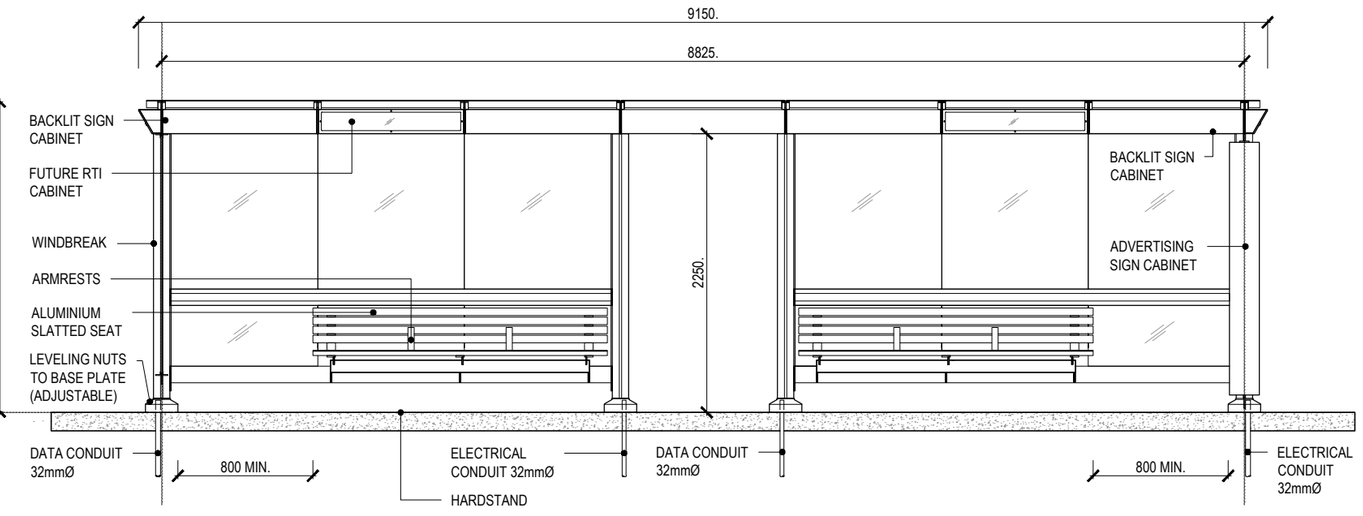


1 - SHELTER PLAN 1:50@A3



2 - SIDE ELEVATION 1:50@A3



3 - FRONT ELEVATION 1:50@A3

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - TYPE 3B

SCALE : AS SHOWN			DRG 5-0302
DRAWN : -	DATE : JULY 2013		A

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

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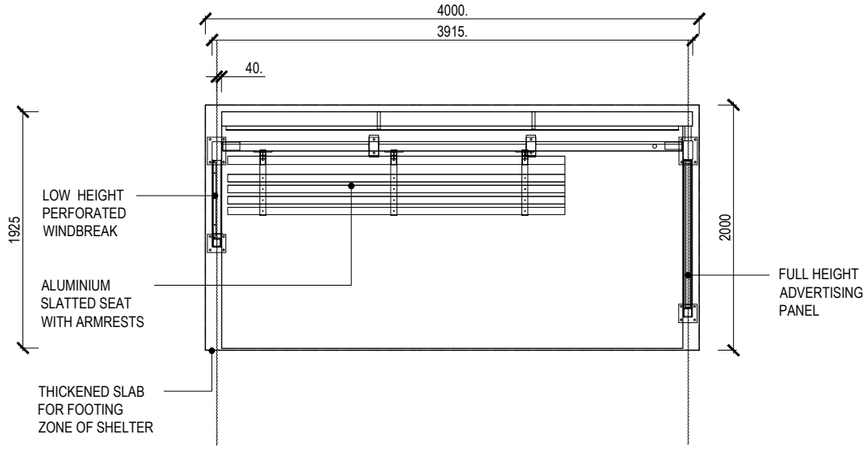
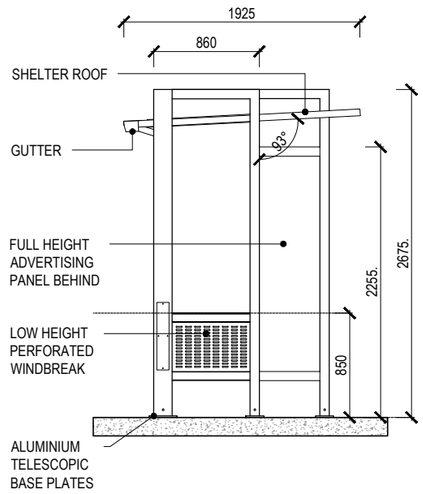
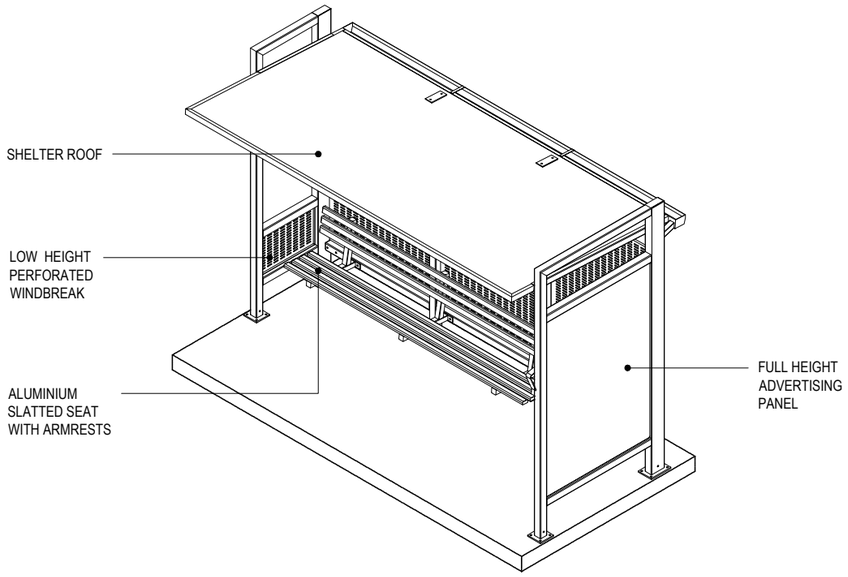


1/- SHELTER PLAN
1:50@A3



2/- SIDE ELEVATION
1:50@A3



3/- ISOMETRIC
NTS

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER

BUS SHELTER DESIGNS - SUBURBAN SHELTER WITH AD PANEL

SCALE : AS SHOWN		DRG 5-0401
DRAWN : -	DATE : JULY 2013	A

NOTES:

HARDSTAND

1 HARDSTAND/SLAB DESIGN TO BE SUITED TO SITE SPECIFIC REQUIREMENTS.

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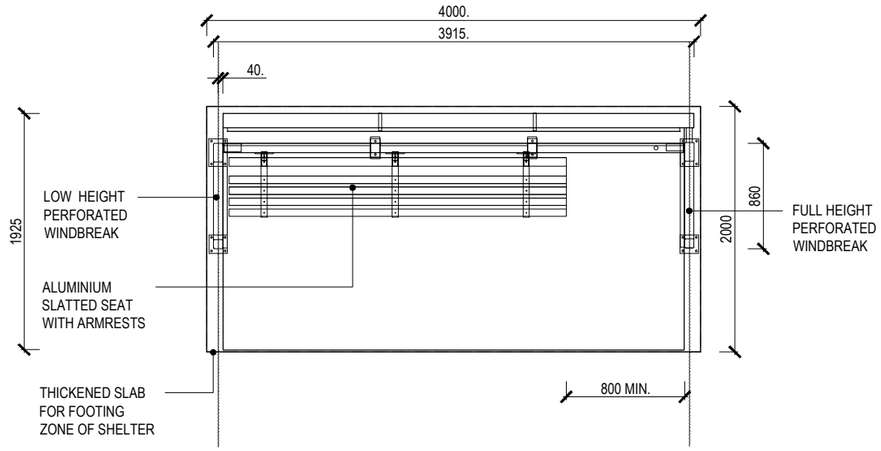
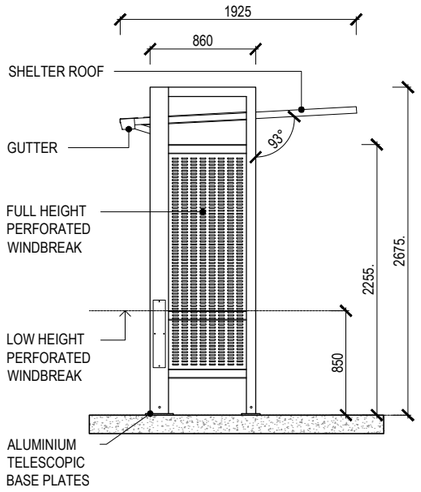
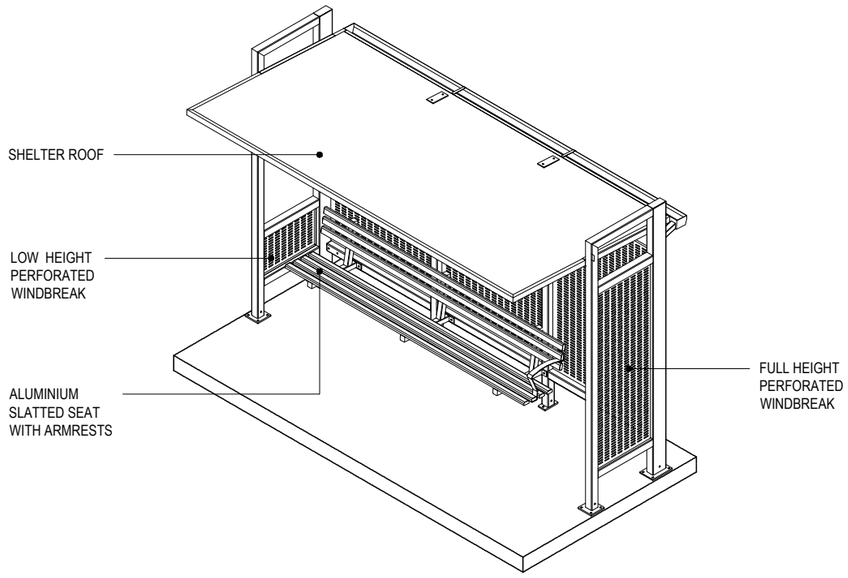


1/- SHELTER PLAN
1:50@A3



2/- SIDE ELEVATION
1:50@A3



3/- ISOMETRIC
NTS

TRANSLink

Queensland Government

PTIM, BUS STOP INFRASTRUCTURE CHAPTER
BUS SHELTER DESIGNS - SUBURBAN SHELTER WITHOUT AD PANEL

SCALE : AS SHOWN		DRG 5-0402
DRAWN : -	DATE : JULY 2013	A