

Cycling Infrastructure Index

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TDM TECHNICAL STANDARDS

Cycle infrastructure index

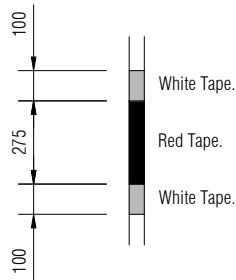
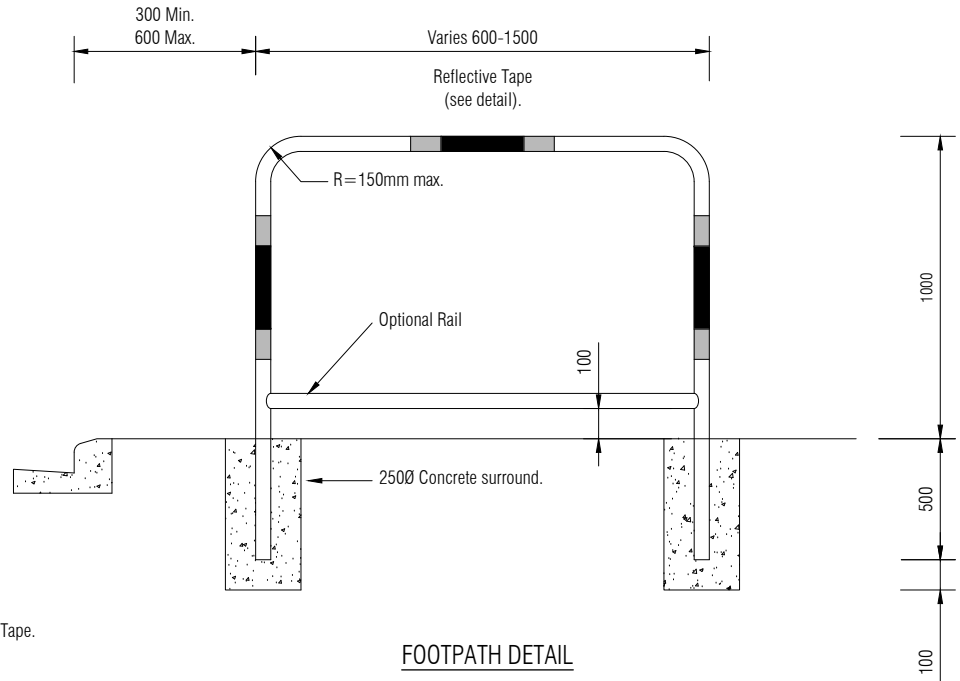
Date: 17/07/2024

SED No.

CY0000

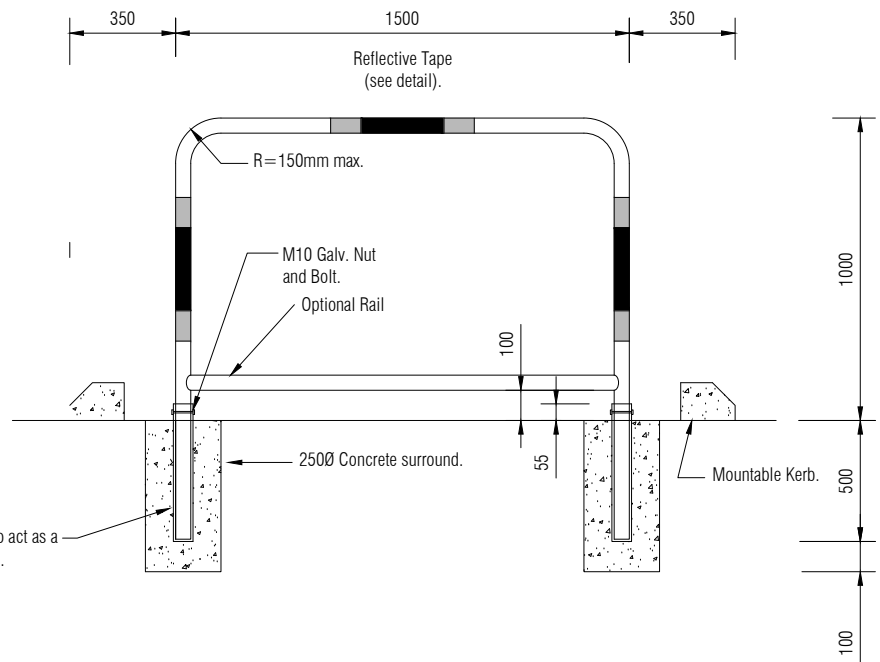
Version

B



Reflective Tape must be Class 1 (AS/NZS 1906.1).

**REFLECTIVE TAPE
DETAIL**



Galv. Pipe of suitable diameter to act as a sleeve for mounting the Handrail.

NOTES

1. Hand rails must be made from 50mmØ medium wall thickness Galv. tube then powder coated with an AT approved coating.
2. Placement of handrail on the intersection layout needs to consider width of through route path and other elements, such as push button location.



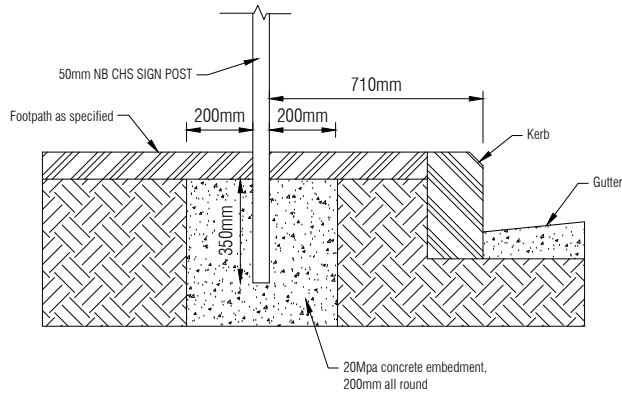
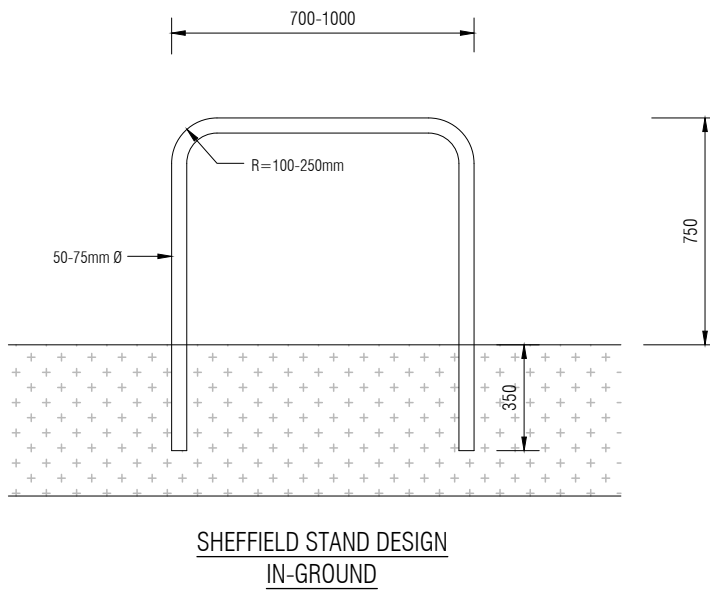
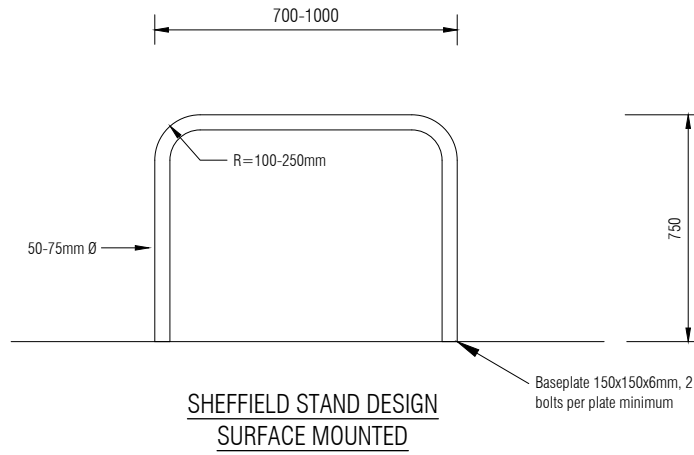
TDM TECHNICAL STANDARDS

Cycle way handrail details

Date: 17/07/2024

SED No. Version

CY0001 A

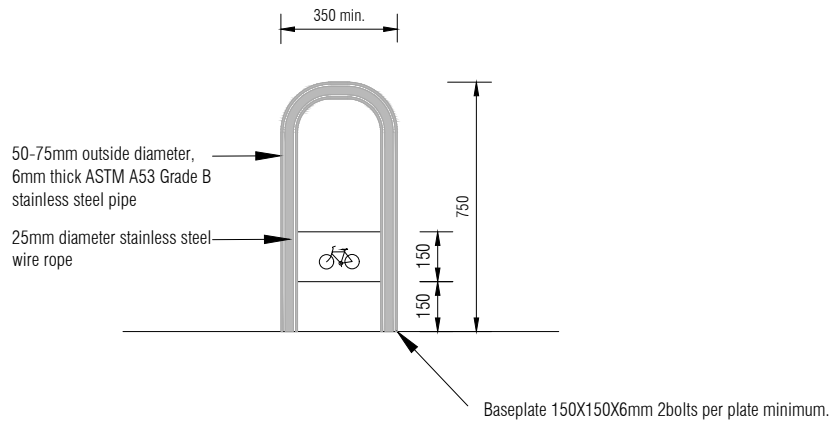


CONCRETE EMBEDMENT FOR BICYCLE STAND

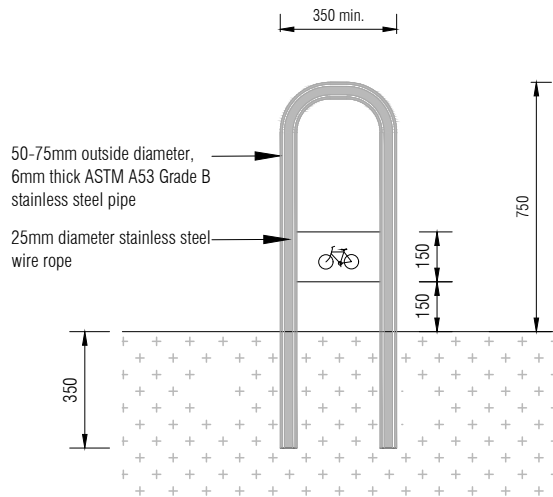
NOTES

1. Designer need to consider bicycle envelope for enabling clearance for pedestrian . Refer to EDC Cycling Infrastructure Appendix Bicycle Parking.





HARROGATE STAND DESIGN
SURFACE MOUNTED

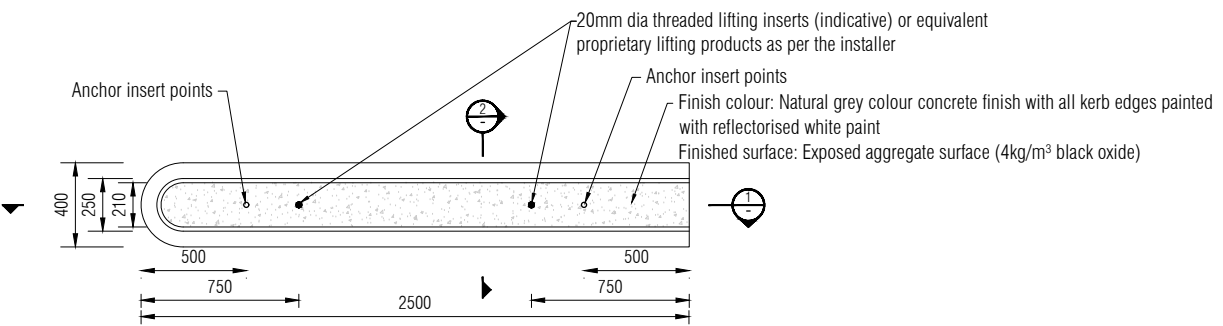


HARROGATE STAND DESIGN
IN-GROUND

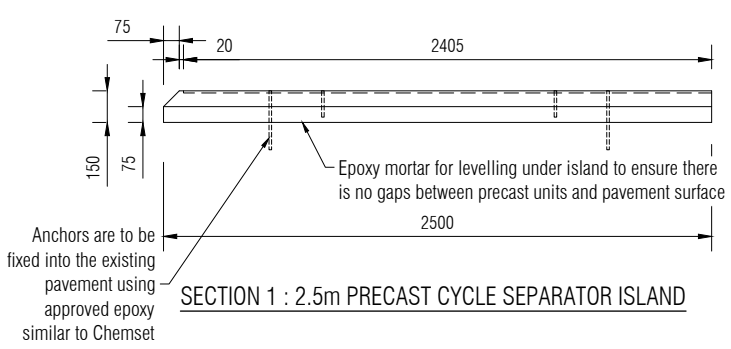
NOTES

1. Designer need to consider bicycle envelope for enabling clearance for pedestrian . Refer to EDC Cycling Infrastructure Appendix Bicycle Parking.

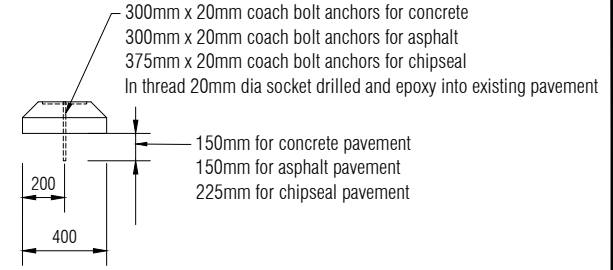




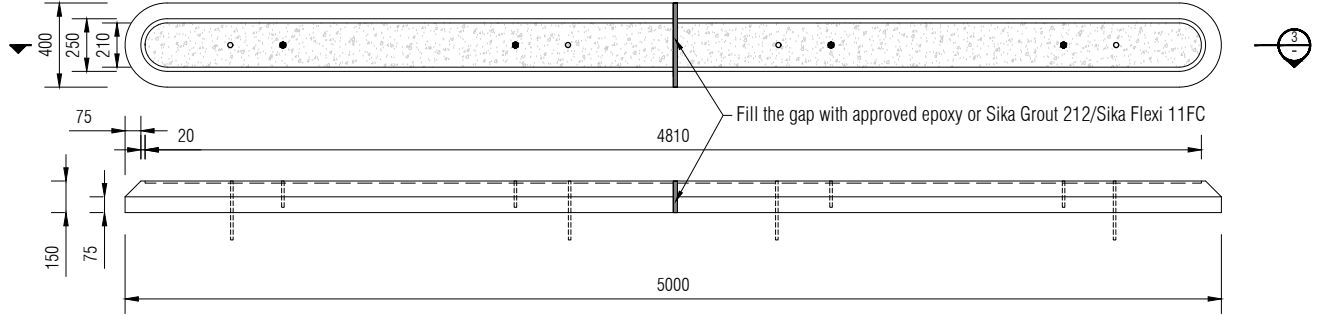
2.5m PRECAST CYCLE SEPARATOR ISLAND DETAIL



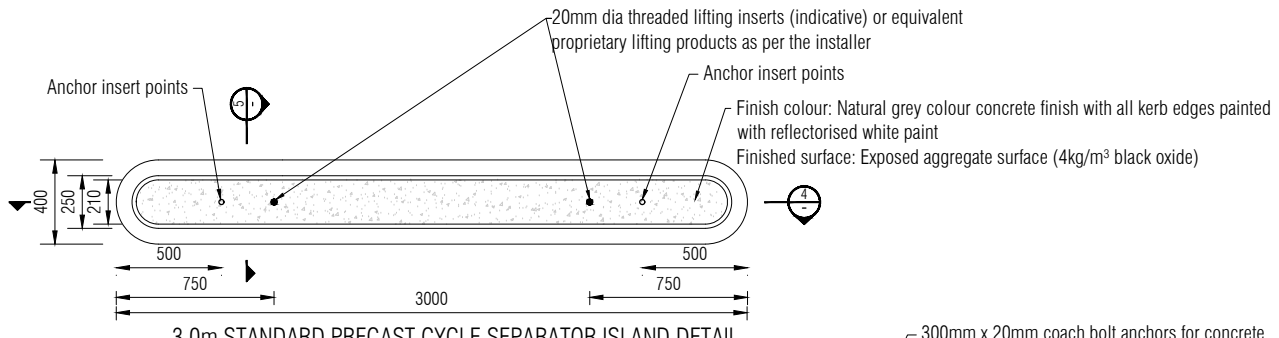
SECTION 1 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



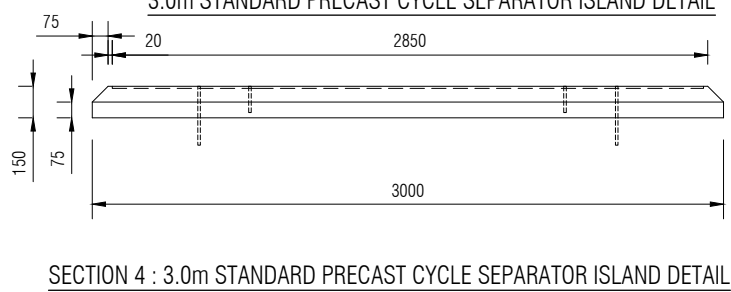
SECTION 2 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



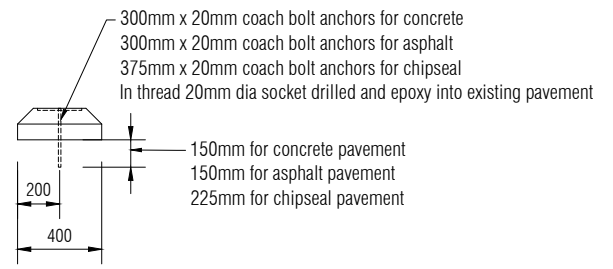
SECTION 3 : 5.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL (2 x 2.5m PRECAST CYCLE SEPARATOR ISLAND)



3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL



SECTION 4 : 3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL

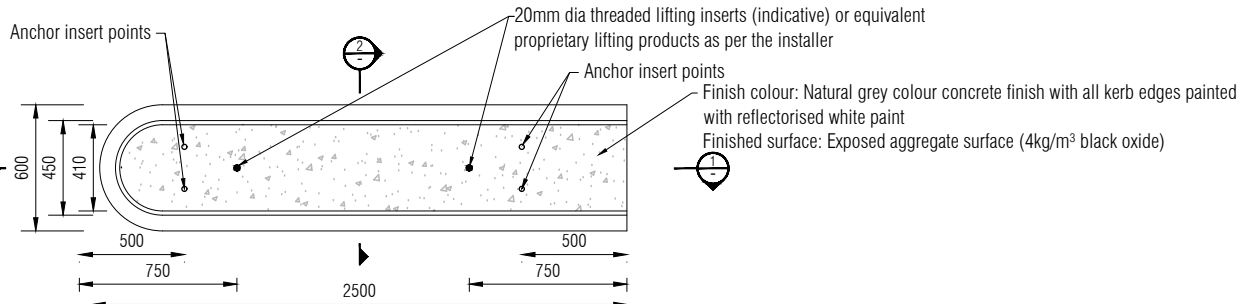


SECTION 5 : 3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND

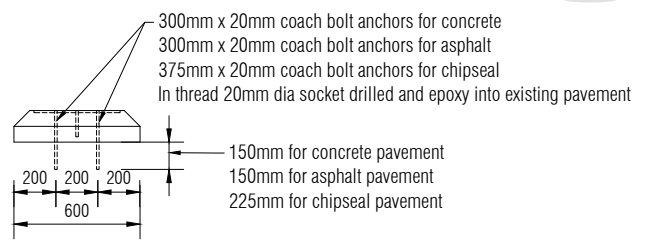
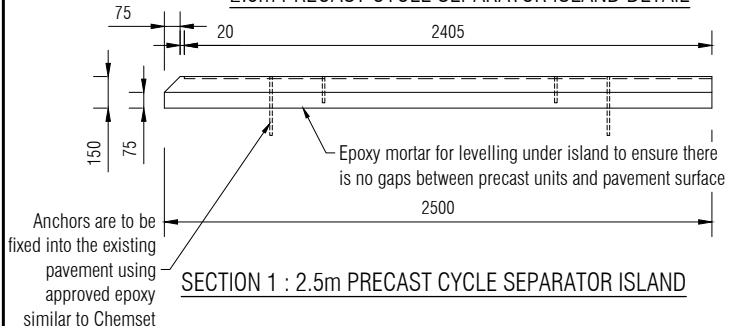
NOTES

1. Provide 335 reinforcement at the centre of precast slab or cast in situ concrete slab.
2. Concrete to be 4.5MPa flexural strength or 40MPa 28days crushing strength.
3. Standard cycle separator island lengths are 3.0m and 5.0m.
4. 3.0m long separator island is constructed as a single unit.
5. 5.0m long separator island is constructed by joining 2 x 2.5m units.
6. Installation of the first separator need to consider visibility and tracking. See CY0009.

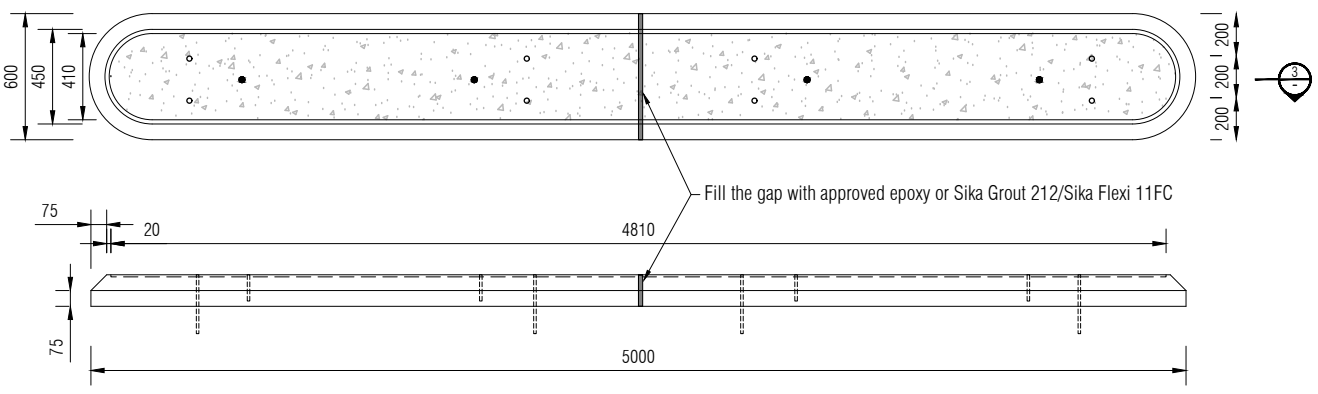




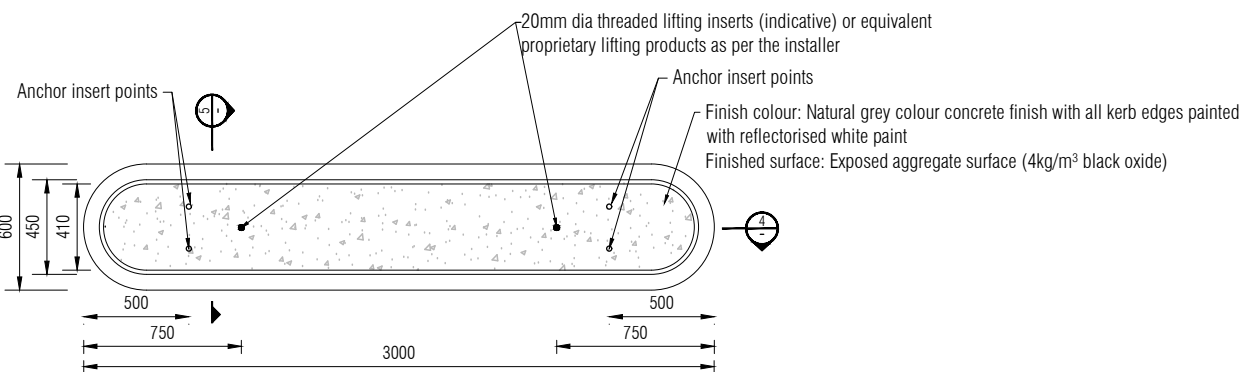
SECTION 1 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



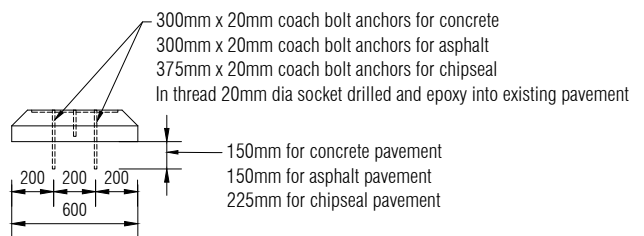
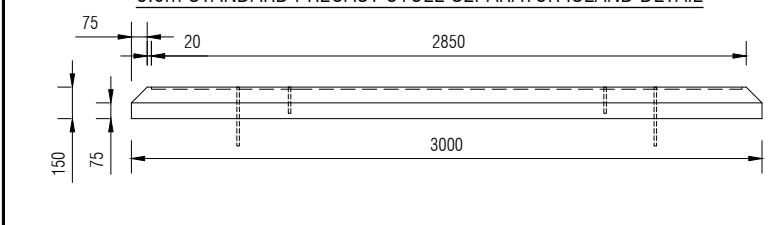
SECTION 2 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



SECTION 3 : 5.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL (2 x 2.5m PRECAST CYCLE SEPARATOR ISLAND)



SECTION 4 : 3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL



SECTION 5 : 3.0 STANDARD PRECAST CYCLE SEPARATOR ISLAND

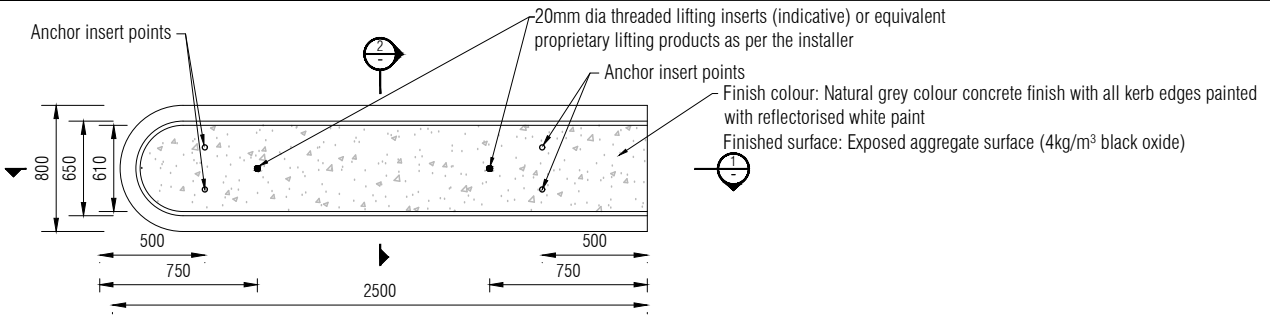
NOTES

1. Provide 335 reinforcement at the centre of precast slab or cast in situ concrete slab.
2. Concrete to be 4.5MPa flexural strength or 40MPa 28days crushing strength.
3. Standard cycle separator island lengths are 3.0m and 5.0m.
4. 3.0m long separator island is constructed as a single unit.
5. 5.0m long separator island is constructed by joining 2 x 2.5m units.
6. Installation of the first separator need to consider visibility and tracking. See CY0009.

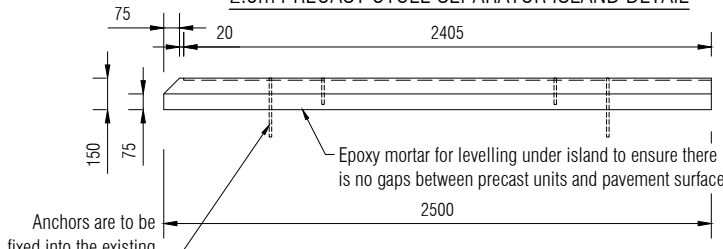


TDM TECHNICAL STANDARDS
Cycle separator details (600mm Wide)

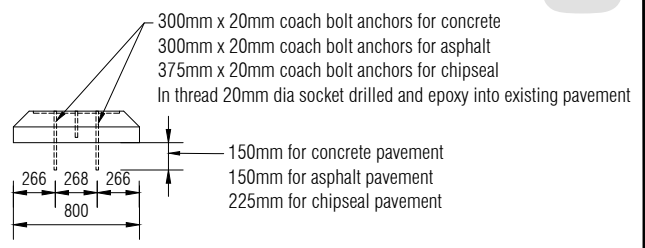
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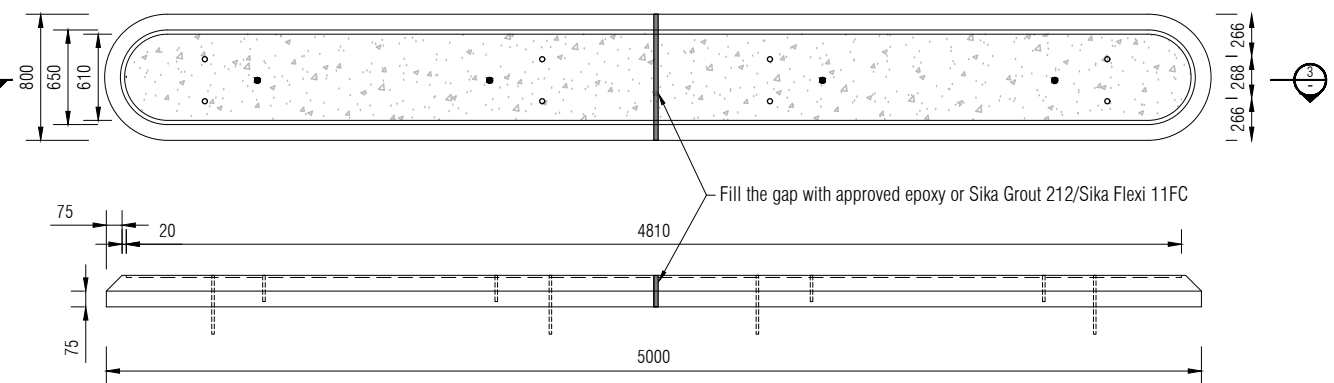
2.5m PRECAST CYCLE SEPARATOR ISLAND DETAIL



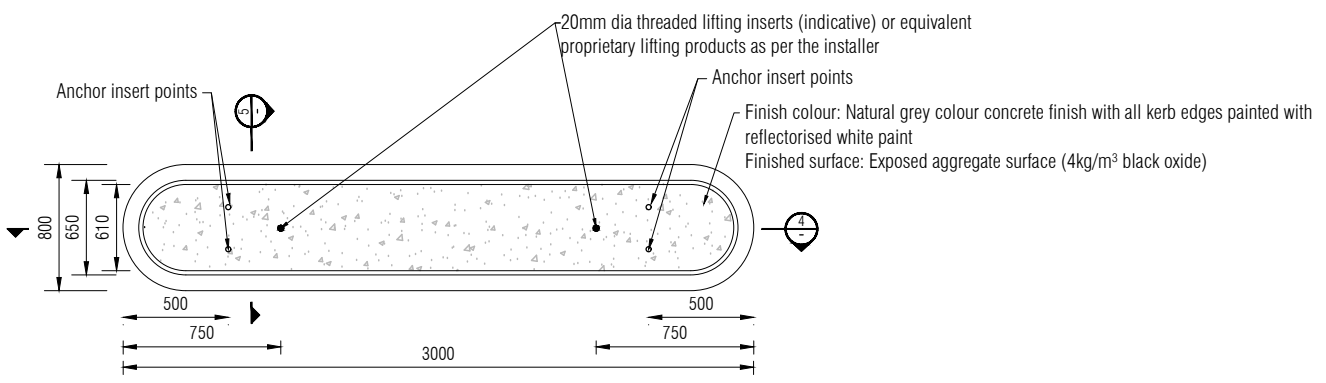
SECTION 1 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



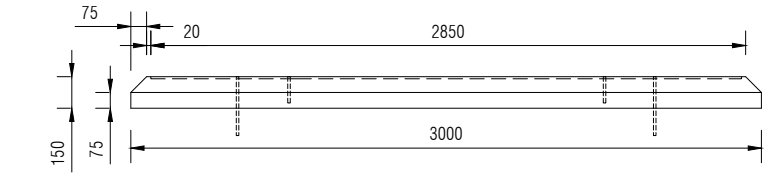
SECTION 2 : 2.5m PRECAST CYCLE SEPARATOR ISLAND



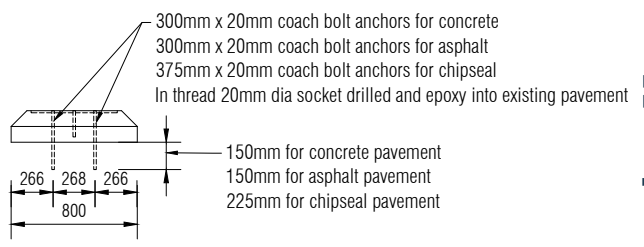
SECTION 3 : 5.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL (2 x 2.5m PRECAST CYCLE SEPARATOR ISLAND)



3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL



SECTION 4 : 3.0m STANDARD PRECAST CYCLE SEPARATOR ISLAND DETAIL



SECTION 5 : 3.0 STANDARD PRECAST CYCLE SEPARATOR ISLAND

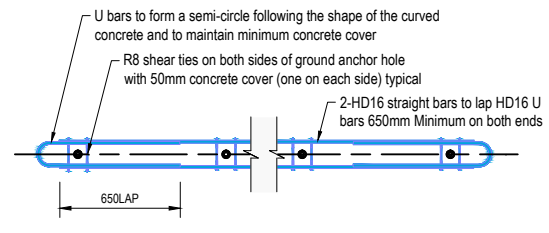
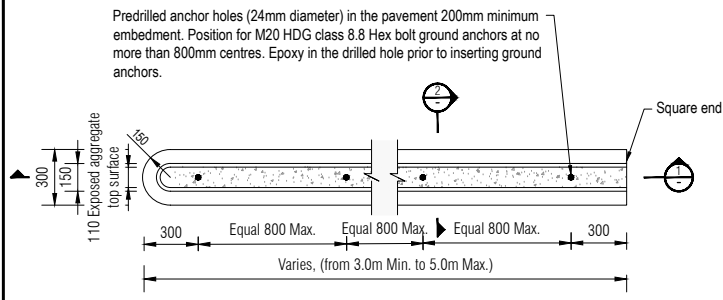
NOTES

1. Provide 335 reinforcement at the centre of precast slab or cast in situ concrete slab.
2. Concrete to be 4.5MPa flexural strength or 40MPa 28days crushing strength.
3. Standard cycle separator island lengths are 3.0m and 5.0m.
4. 3.0m long separator island is constructed as a single unit.
5. 5.0m long separator island is constructed by joining 2 x 2.5m units.



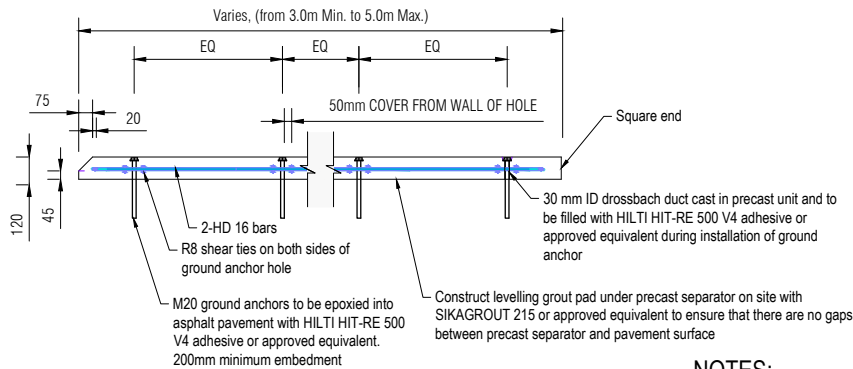
TDM TECHNICAL STANDARDS
Cycle separator details (800mm Wide)

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| SED No. | CY0006 | Version |
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300x120mm TYPICAL REINFORCEMENT PLAN

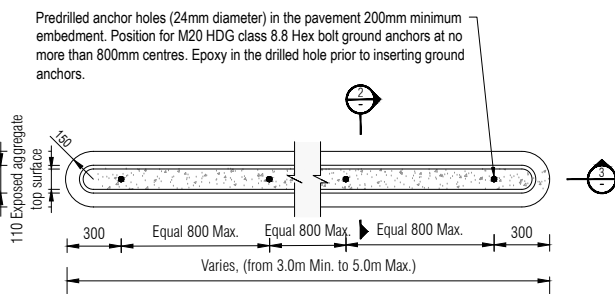
300x120mm HALF SECTION PRECAST CYCLE SEPARATOR



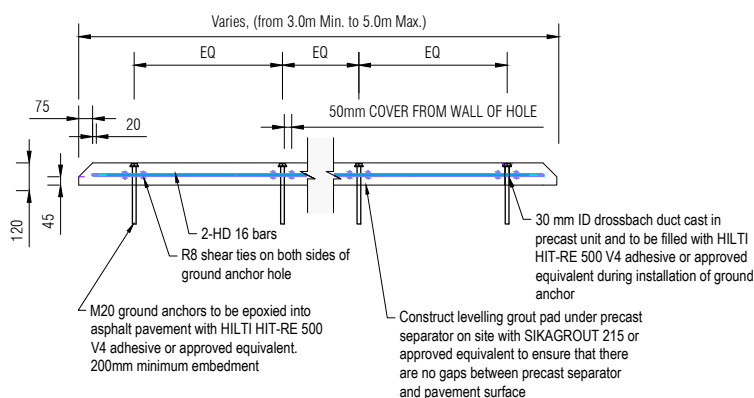
SECTION 1

NOTES:

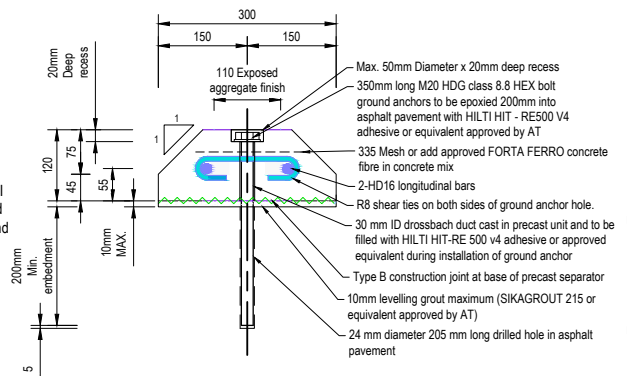
- The supplier of the separators is responsible for designing lifting points and any other features required for transporting the separators to their final position without cracking or damage.
- Precast concrete to be of 4.5 MPa flexural strength minimum and 40 MPa compressive strength minimum at 28-day cure. Concrete strength may be increased to meet precast fabrication and lifting requirements.
- For installed locations within 30 m inland of the high tide mark (i.e. exposure classification c as per NZS 3101), minimum flexural strength and minimum compressive strength at 28-day cure shall increase to 5.0 MPa and 50 MPa respectively and special concrete with appropriate supplementary cementitious materials shall be used in accordance with NZS 3101.
- Provide mesh 335 reinforcement or approved FORTA FERRO concrete fibre in concrete mix or approved alternative to control cracking.
- Minimum concrete cover to steel reinforcement shall be 35 mm all round type. For installed locations within 30 m inland of the high tide mark (i.e. exposure classification c as per NZS 3101), concrete cover shall increase to 50 mm all round. 120 mm high separator shall not be used in exposure classification C environment.
- Top surface of precast separator shall have exposed aggregate finish to meet slip resistance requirements, i.e. provide minimum SRV of 39 as defined in NZBC D1/AS1 or class R11 as defined in as 4586. Other precast surfaces shall have F4 off-the-form finish.
- Natural grey colour concrete finish with all kerb edges painted with reflectorised white paint.
- Full section precast separator shall be 3.0 m, 4.0 m and 5.0 m in length. Where a separator island is required to be longer than 5.0 m, two half section units shall be joined to form the required length. Each half section unit shall not be longer than 5.0 m. Any gaps between units shall be filled with SIKAGROUT 215 grout or equivalent approved by Auckland Transport.
- Installation of the first separator need to consider the visibility and tracking. See CY0009.



300x120mm FULL SECTION PRECAST CYCLE SEPARATOR



SECTION 3



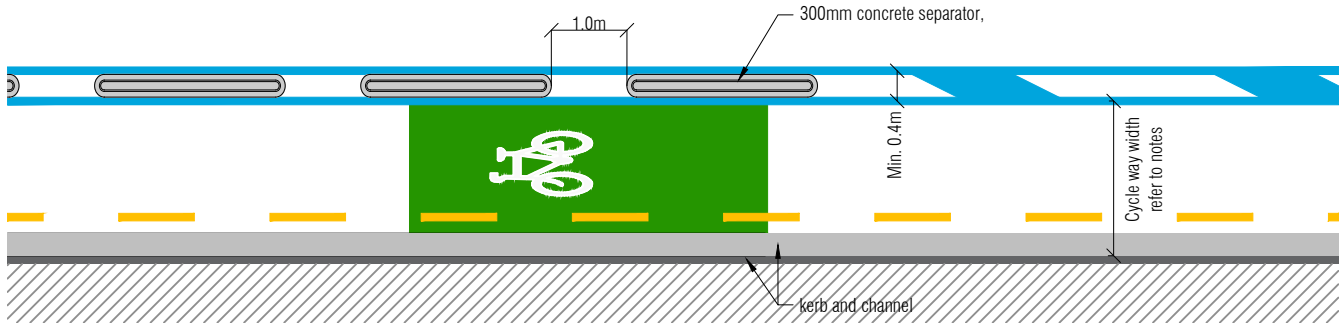
SECTION 2



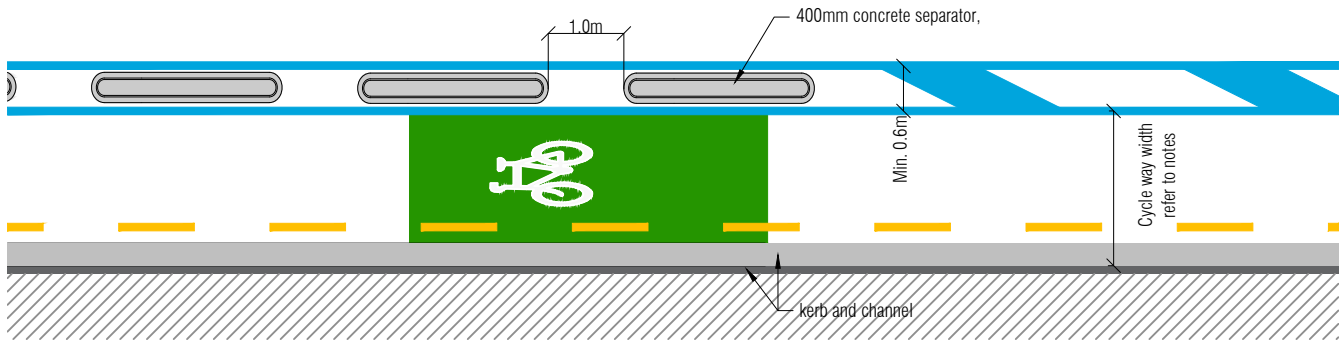
TDM TECHNICAL STANDARDS
Cycle separator details (300mm Wide and 120mm High)

Date: 17/07/2024

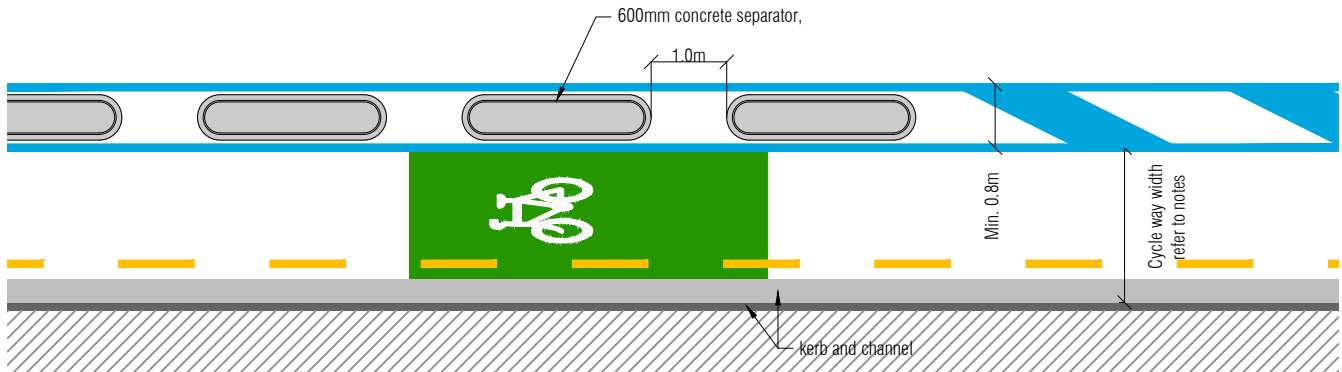
SED No. **CY0007** Version **C**



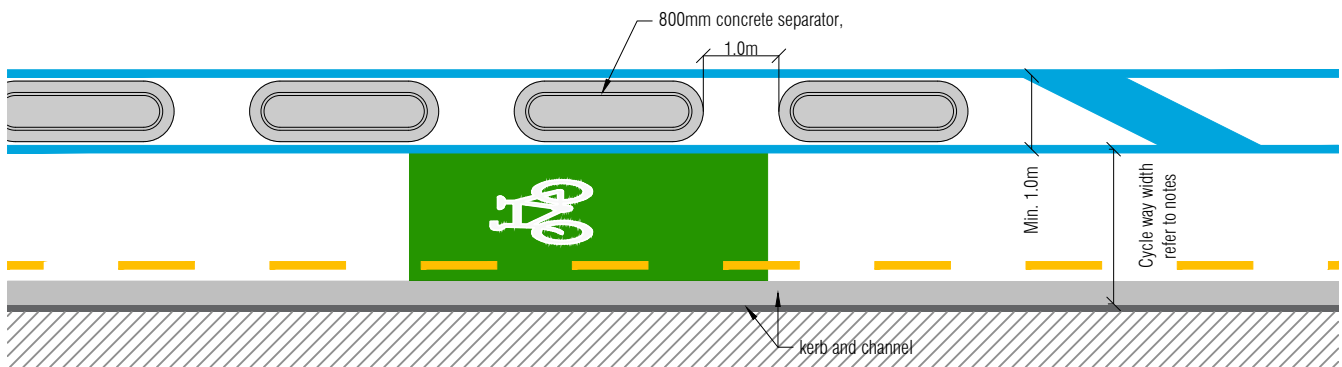
300mm CONCRETE SEPARATOR ARRANGEMENT PLAN VIEW



400mm CONCRETE SEPARATOR ARRANGEMENT PLAN VIEW



600mm CONCRETE SEPARATOR ARRANGEMENT PLAN VIEW



800mm CONCRETE SEPARATOR ARRANGEMENT PLAN VIEW

NOTES

1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. All concrete separators leading edges to be pre-painted with reflectorized white paint.
3. Designer need to give consideration for separator visibility at night, for example the use of RRMP's and/or lighting reviews. Risk is these concrete separators can be difficult to see at night, kerb strikes and loss of control.
4. Separators are typically placed with min. 0.5m gap spacing for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
5. Placement of concrete separator to traffic lane edge line need to consider a 300mm distance. This will provide sufficient space if RPM's need to be installed along the route.
6. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.



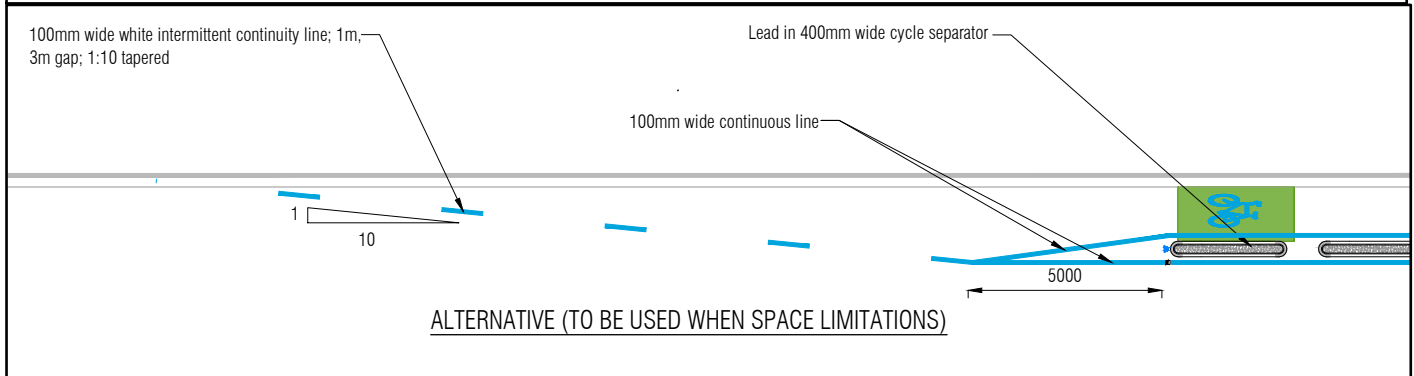
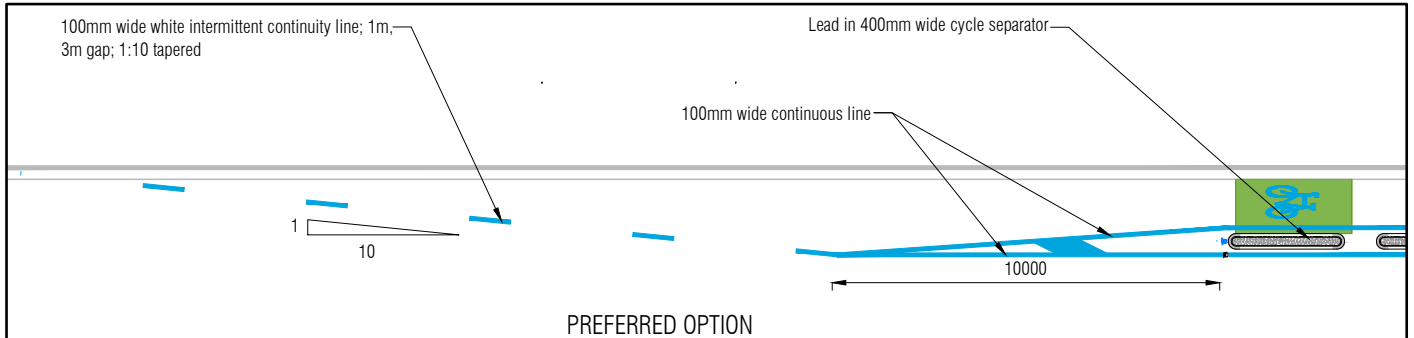
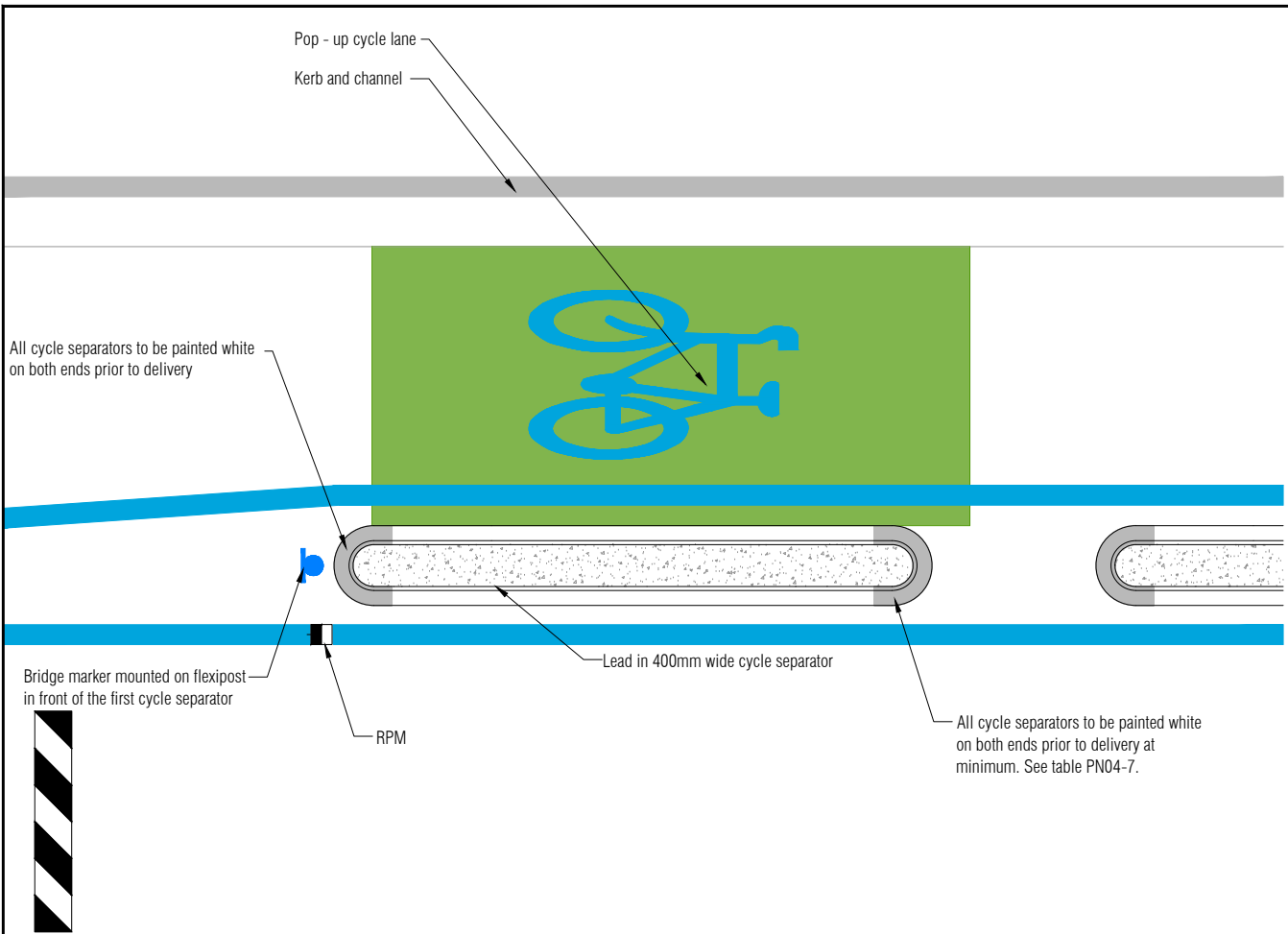
TDM TECHNICAL STANDARDS

Concrete Separator Arrangement

Date: 17/07/2024

SED No. Version

CY0008 A



LEGEND

— 100mm White reflectorised continuous line

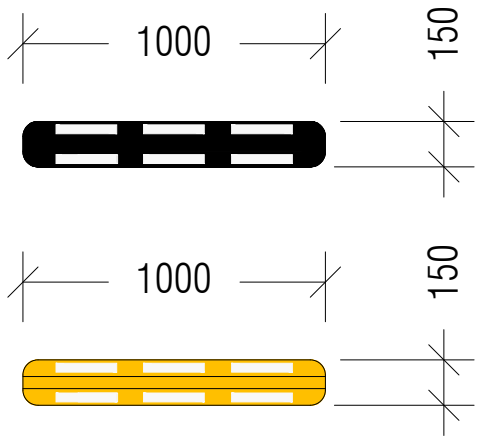
NOTES

1. Bridge marker post placement refer to section 5.1.4.4. Other Consideration of Placement.
2. If there is access needed for rubbish collection through cycle lane flexipost should not be placed before the first cycle separator. Flexipost should not be in path of outreach arm of rubbish collection truck.
3. All cycle separators to be painted white on both ends prior to delivery.
4. No Stopping At All Times (NSAAT) needs to be installed based on the cycling infrastructure type - this needs to resolve in the resolution stage.
5. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
6. Placement of RPM and Bridge Marker Post refer to PN04 section 5.1.4.4. Other Consideration of Placement.

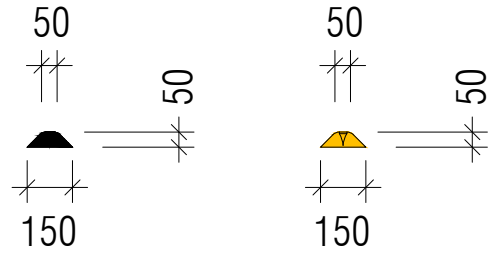


TDM TECHNICAL STANDARDS
Cycle separator transition zone

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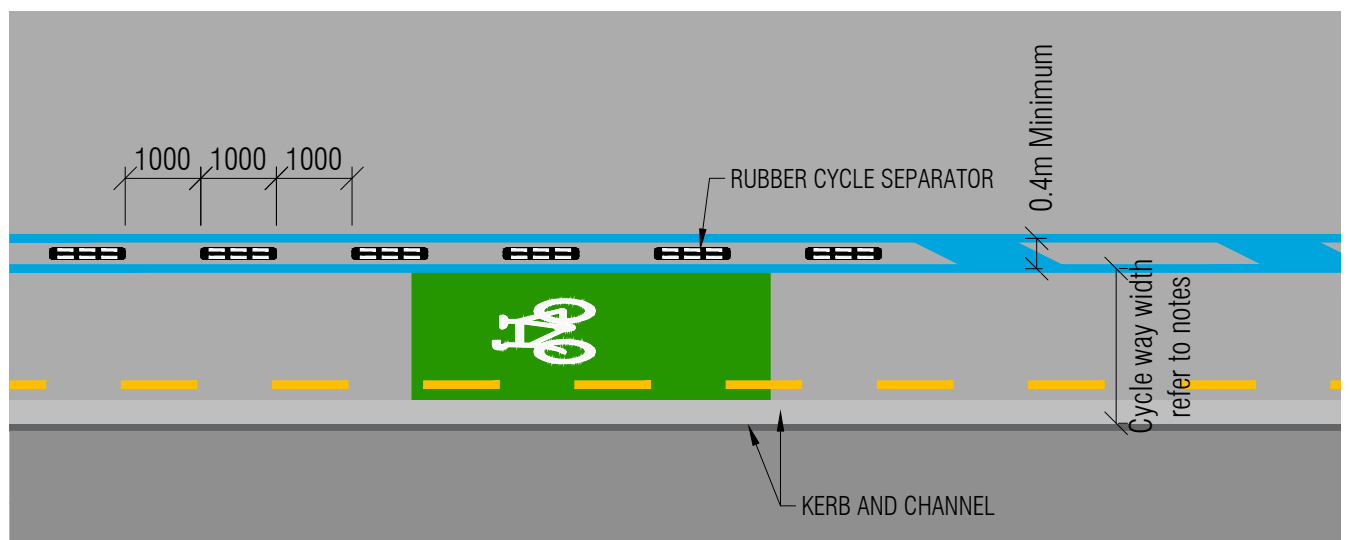
CENTRE MODULE - BLACK OR YELLOW



CENTRE MODULE CROSS SECTION

NOTES

1. Product to be approved by AT engineers.
2. Separator colour should be black/yellow. The colour should be selected with consideration of existing environment.
3. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
4. Separators are typically placed with min. 0.5m gap spacings for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
5. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.

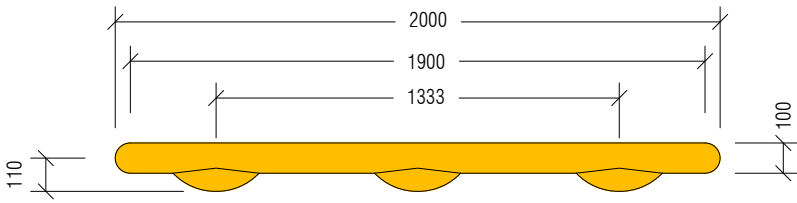


RUBBER CYCLE SEPARATOR PLAN VIEW

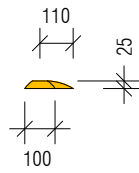


TDM TECHNICAL STANDARDS
Rubber cycle separator - Black/Yellow

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| | A | |



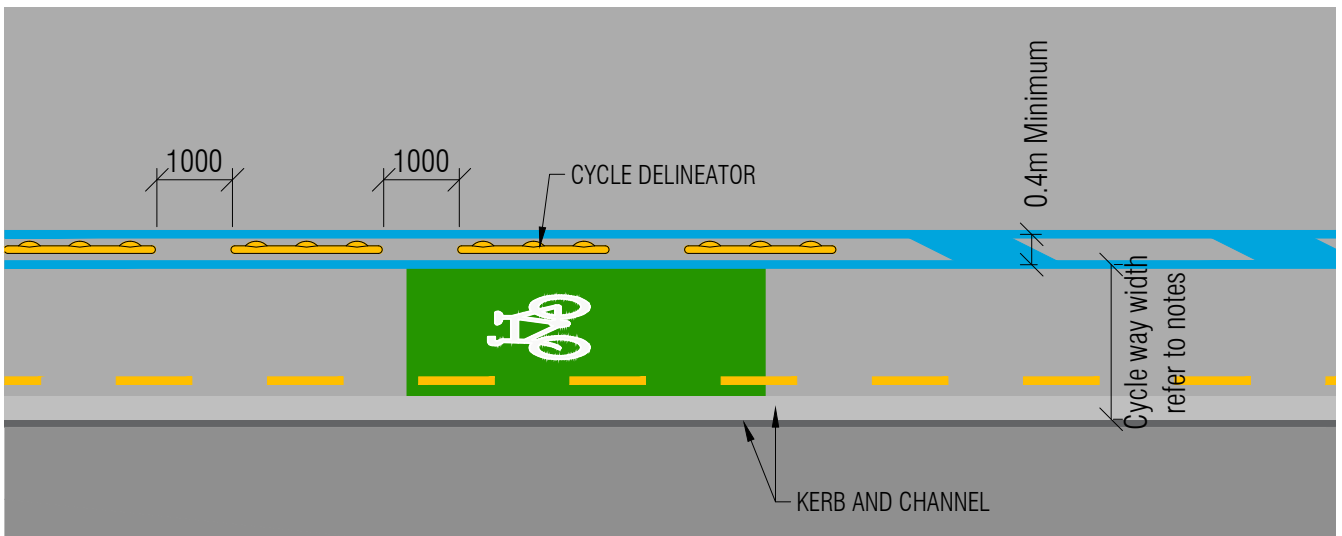
RILEY KERB CYCLE DELINEATOR



MODULE CROSS SECTION

NOTES

1. Product to be approved by AT engineers.
2. Separator colour should be yellow.
3. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
4. Separators are typically placed with min. 0.5m gap spacings for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.



CYCLE DELINEATOR PLAN VIEW

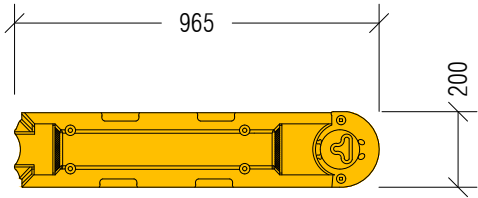


TDM TECHNICAL STANDARDS

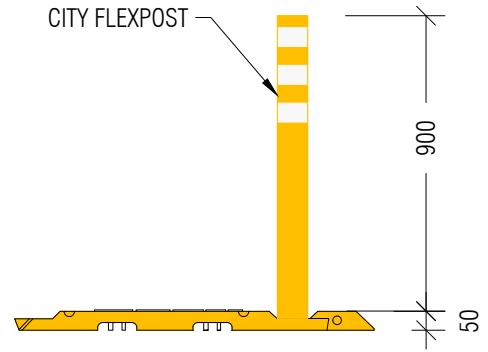
Riley cycle delineator - Yellow

Date: 17/07/2024

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| SED No. | Version |
| CY0011 | A |



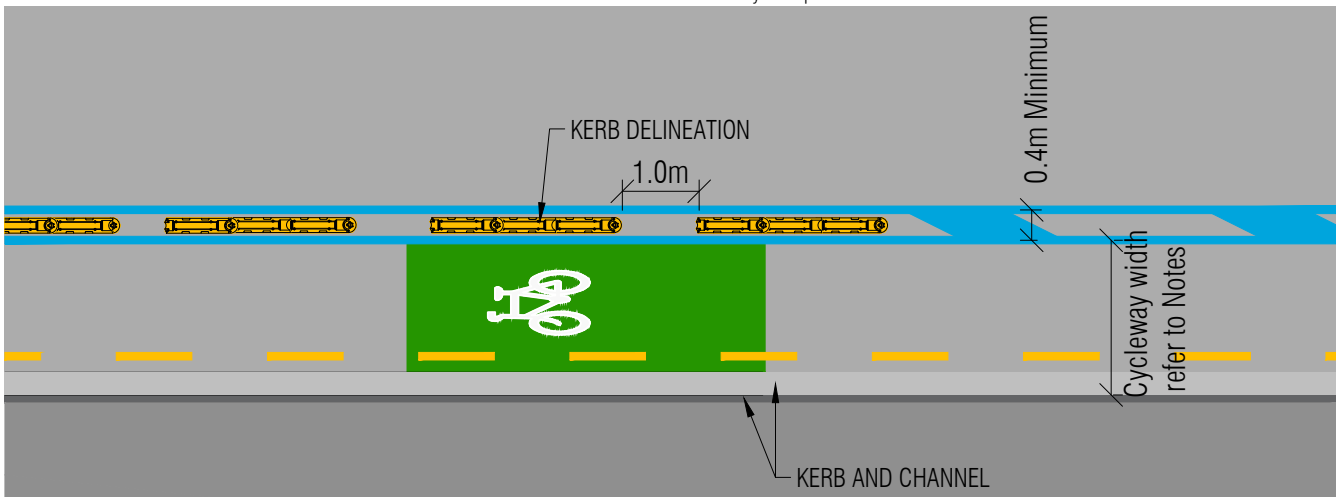
RILEY FG 300 KERB DELINEATION



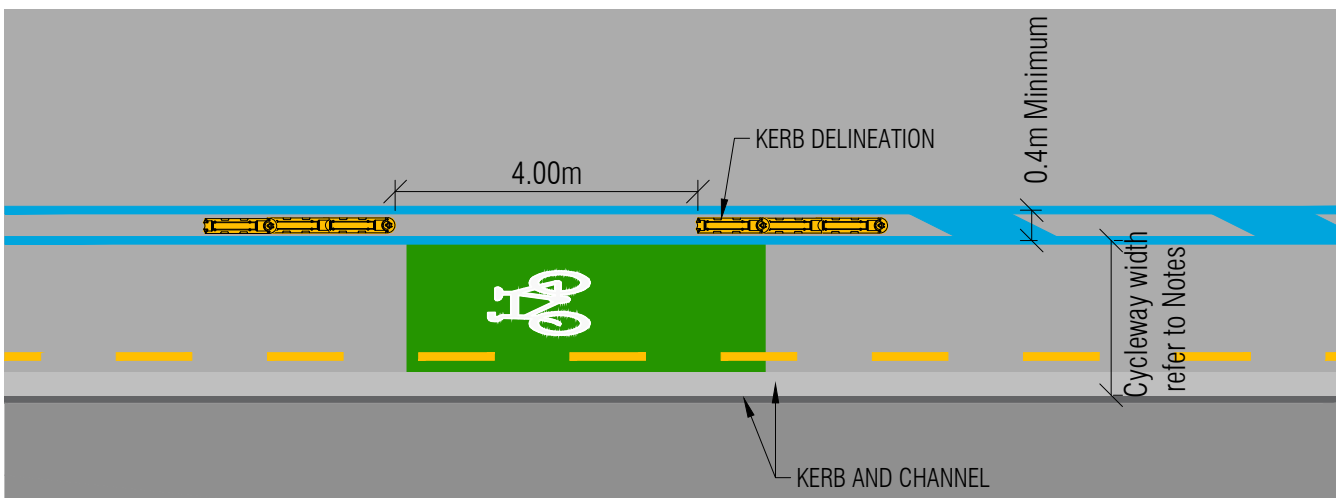
MODULE CROSS SECTION

NOTES

1. Product to be approved by AT engineers.
2. Separator colour should be yellow.
3. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
4. Separators are typically placed with min. 0.5m gap spacings for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
5. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.



CYCLE DELINEATOR PLAN VIEW



CYCLE DELINEATOR PLAN VIEW (ALTERNATIVE - WITH OVERTAKING OPPORTUNITY)



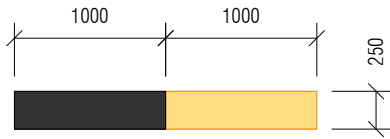
TDM TECHNICAL STANDARDS

RILEY FG 300 kerb Delineation

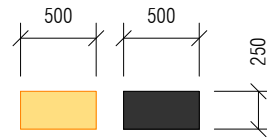
Date: 17/07/2024

SED No. Version

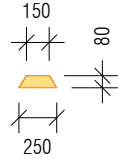
CY0012 A



CENTRE MODULE - BLACK OR YELLOW



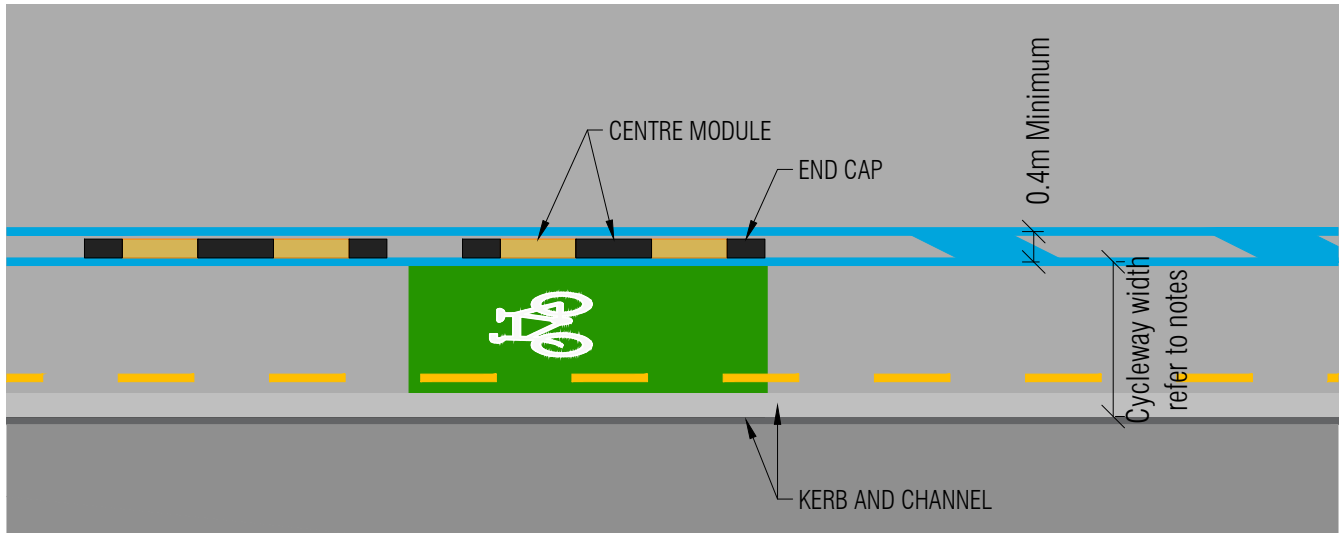
END CAP - BLACK OR YELLOW



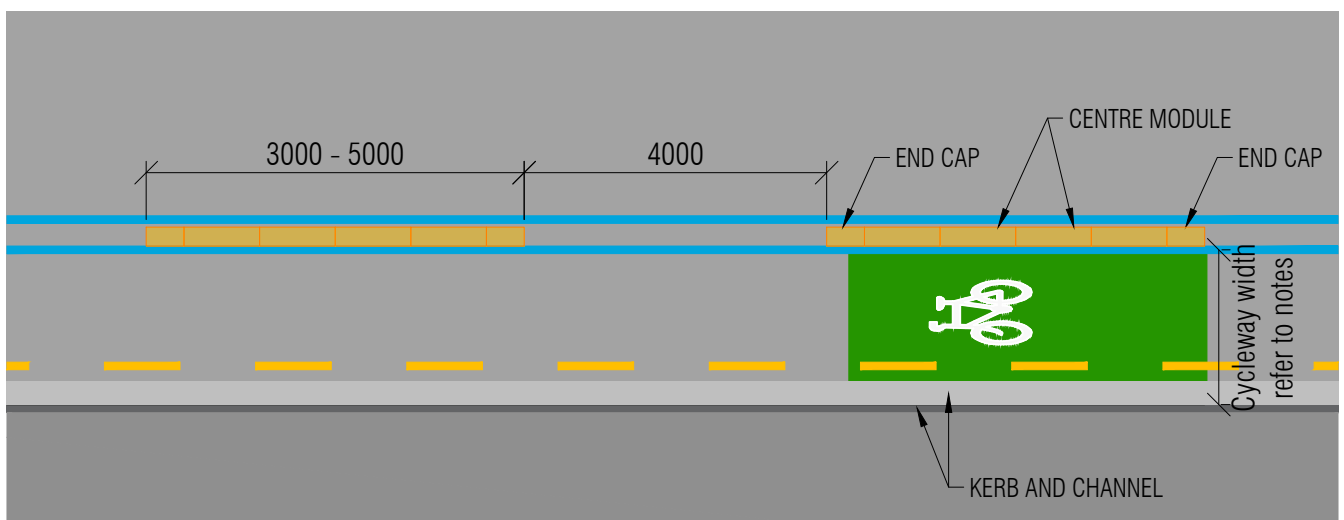
CENTRE MODULE CROSS SECTION

NOTES

1. Product to be approved by AT engineers.
2. City flexipost to be on leading edge
3. Separator colour should be yellow/black. The colour should be selected with consideration of existing environment. Alternative white can be considered.
4. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PNO4-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
5. Separators are typically placed with min. 0.5m gap spacings for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
6. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.



FLEXIBLE TRAFFIC SEPARATOR PLAN VIEW

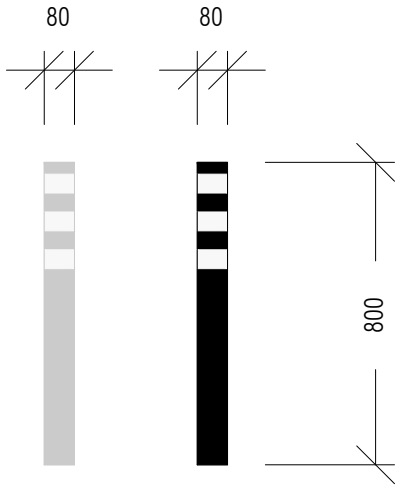


FLEXIBLE TRAFFIC SEPARATOR ARRANGEMENT PLAN VIEW
(ALTERNATIVE - WITH OVERTAKING OPPORTUNITY)

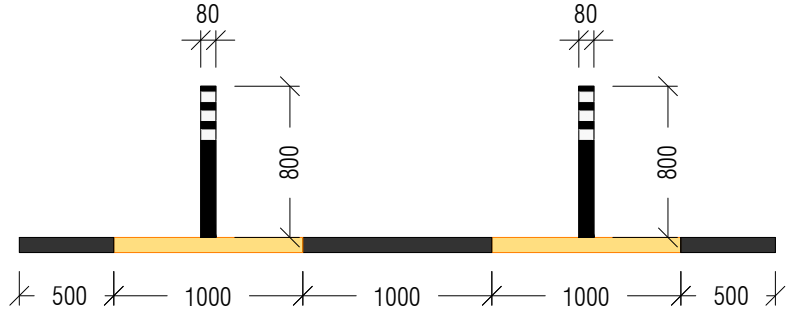


NOTES

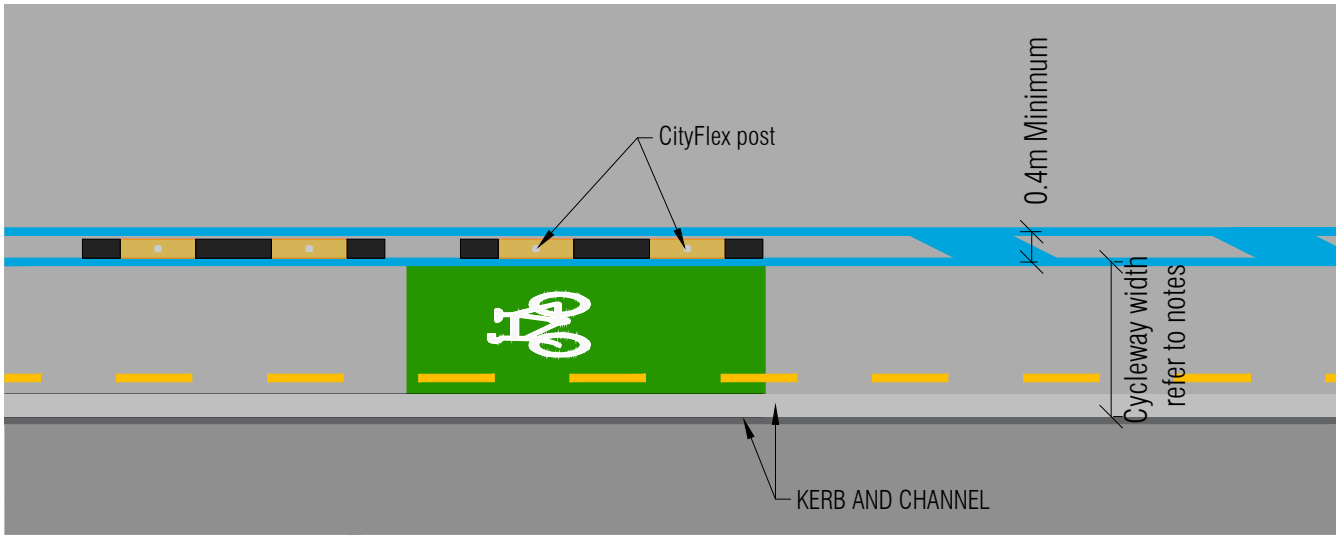
1. Product to be approved by AT engineers.
2. Separator colour should be yellow/black. The colour should be selected with consideration of existing environment. Alternative white can be considered.
3. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
4. Separators are typically placed with min. 0.5m gap spacing for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
5. CityFlex post to be installed on the flexible traffic separator. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.



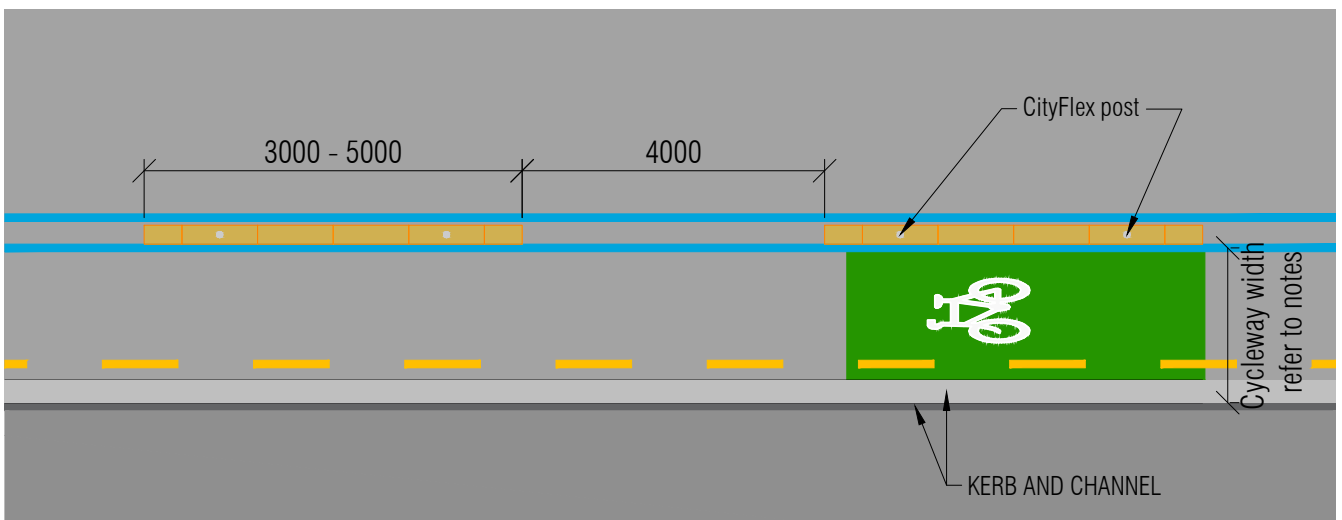
CITY FLEXPOST



CITY FLEXPOST ON FLEXIBLE TRAFFIC SEPARATOR

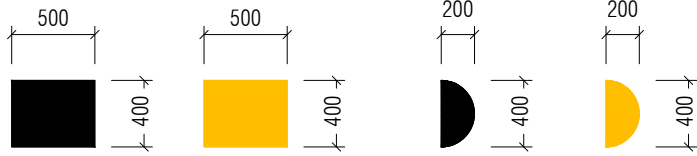


CITYFLEX POST ON TRAFFIC SEPARATOR PLAN VIEW

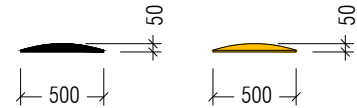


CITY FLEXPOST ON TRAFFIC SEPARATOR PLAN VIEW
(ALTERNATIVE - WITH OVERTAKING OPPORTUNITY)

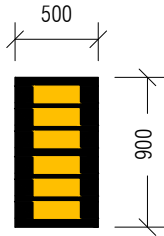




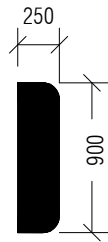
RUBBER SPEED HUMPH - BLACK OR YELLOW END CAP - BLACK OR YELLOW



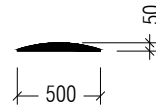
RUBBER SPEED HUMPH CROSS SECTIONS



SPEED CUSHION CENTRE MODULE



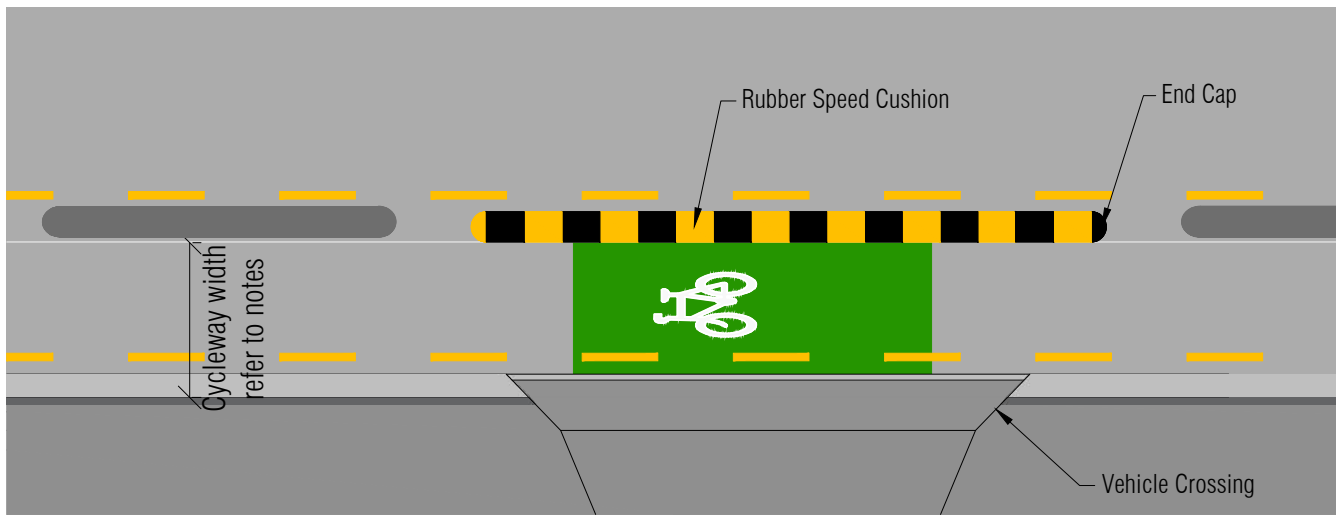
SPEED CUSHION END CAP



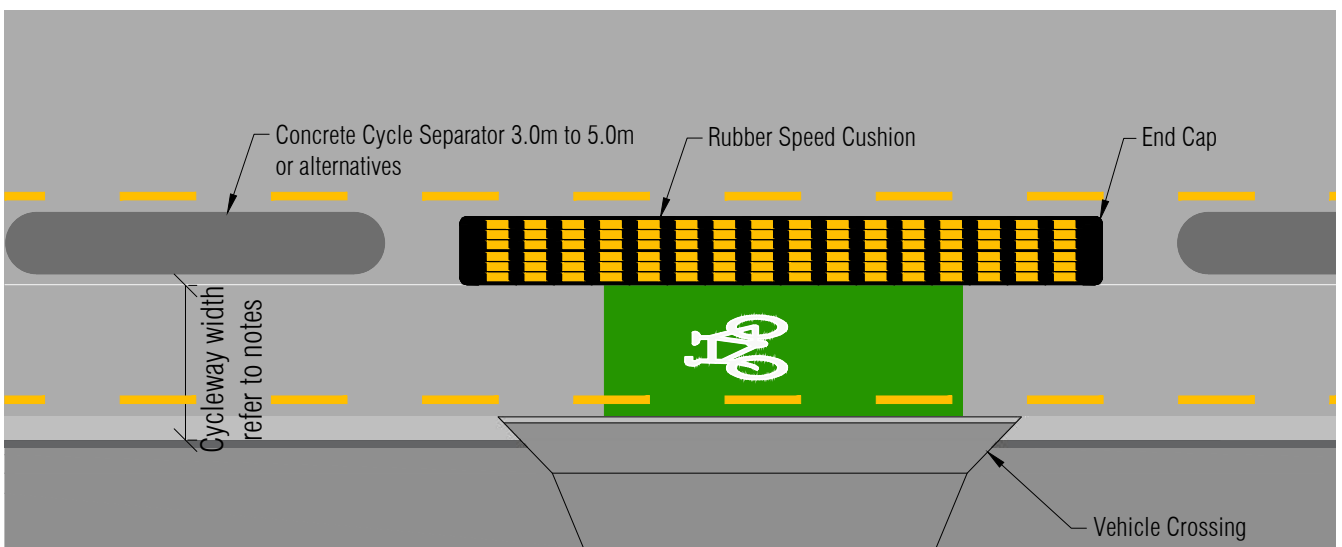
SPEED CUSHION CENTRE MODULE CROSS SECTION

NOTES

1. For areas with multiple driveway access.
2. For industrial area, the buffer needs to be 1000mm with the speed cushion of 900mm.
3. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
4. Separators are typically placed with min. 0.5m gap spacing for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.

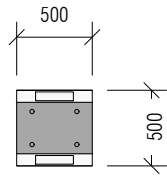


RUBBER SPEED CUSHION AS CYCLE SEPARATOR FOR VEHICLE CROSSING - RESIDENTIAL

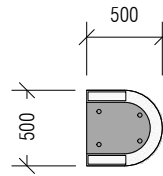


RUBBER SPEED CUSHION AS CYCLE SEPARATOR FOR VEHICLE CROSSING - INDUSTRIAL

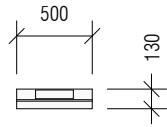




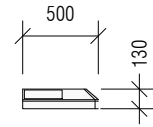
RUBBER CYCLEWAY ISLAND - CENTRE MODULE



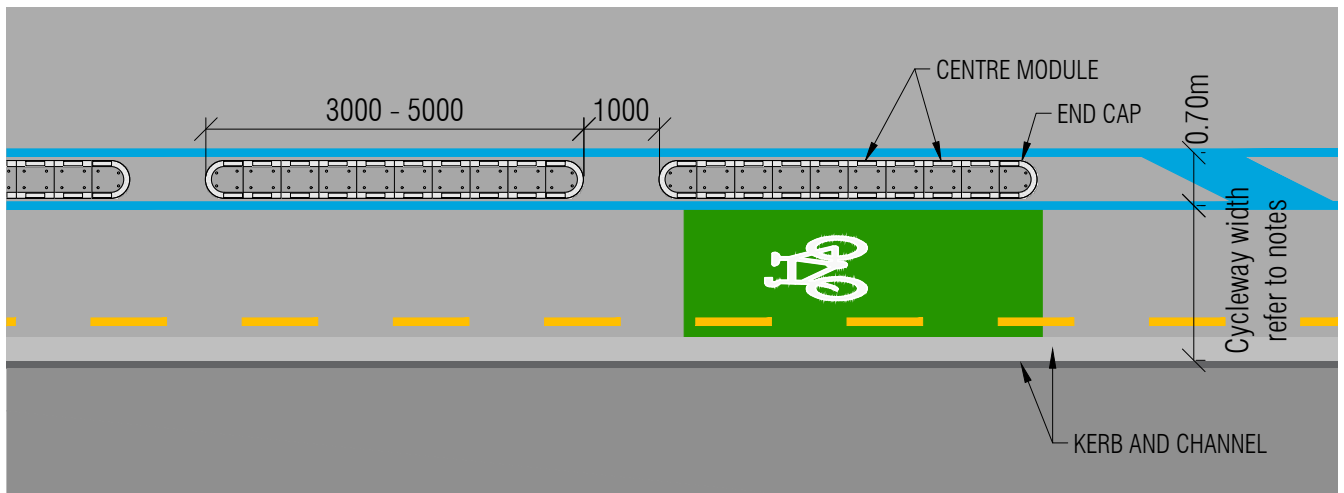
RUBBER CYCLEWAY ISLAND - END CAP



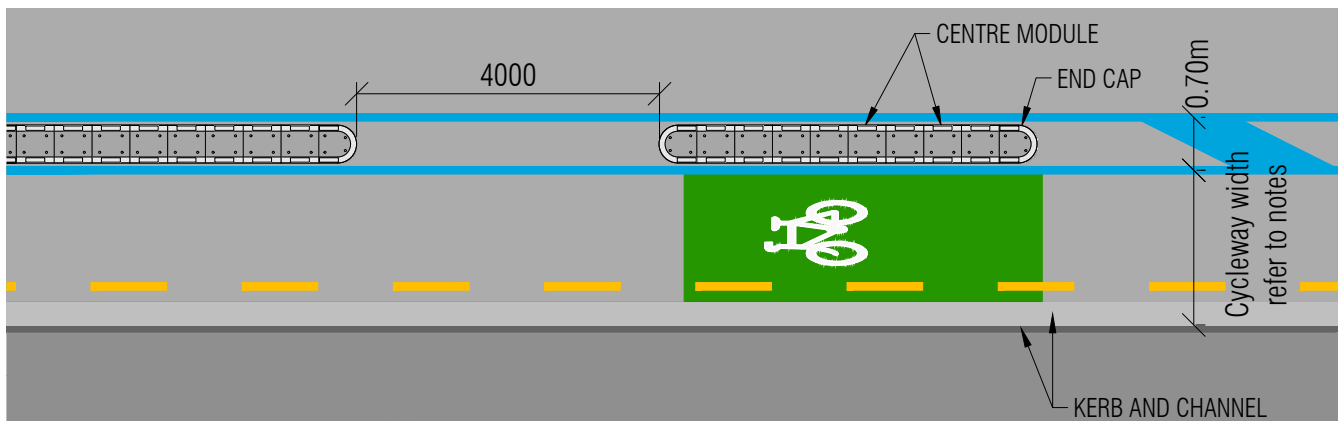
CENTRE MODULE CROSS SECTION



END CAP CROSS SECTION



FLEXIBLE TRAFFIC SEPARATOR PLAN VIEW



FLEXIBLE TRAFFIC SEPARATOR PLAN VIEW (ALTERNATIVE - OVERTAKING OPPOTUNITY)

NOTES

1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Separators are typically placed with min. 0.5m gap spacing for drainage purposes. Larger gaps (up to 4.0m) can provide opportunities for cyclists in uni-directional cycle ways. A 1.0m gap is typical gap spacing shown on this drawing.
3. Design treatment for the first separator need to consider drawing CY0009 - Cycle Separator Transition Zone.



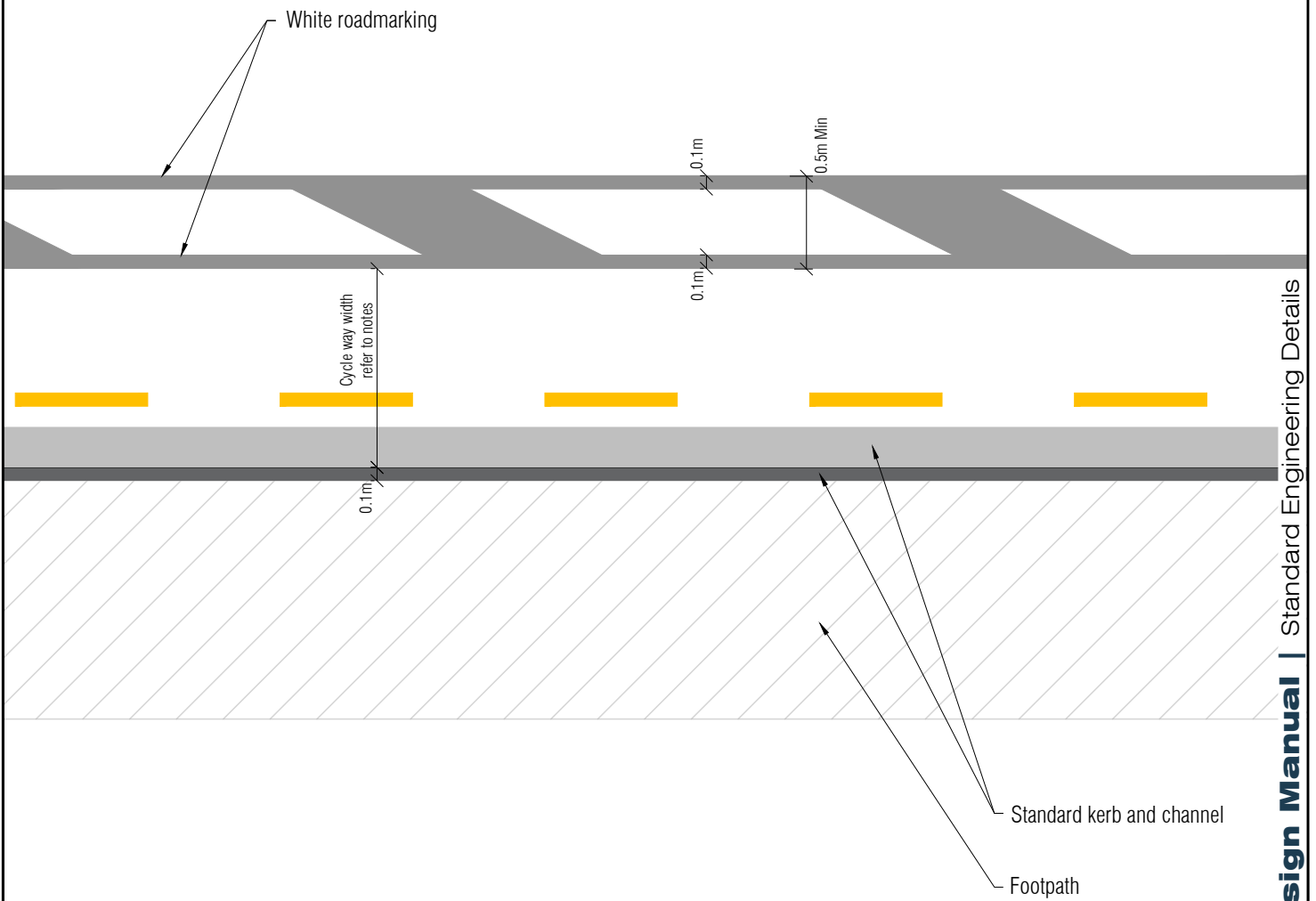
TDM TECHNICAL STANDARDS

Rubber Cycle Separator - 500mm

Date: 17/07/2024

SED No. Version

CY0016 A



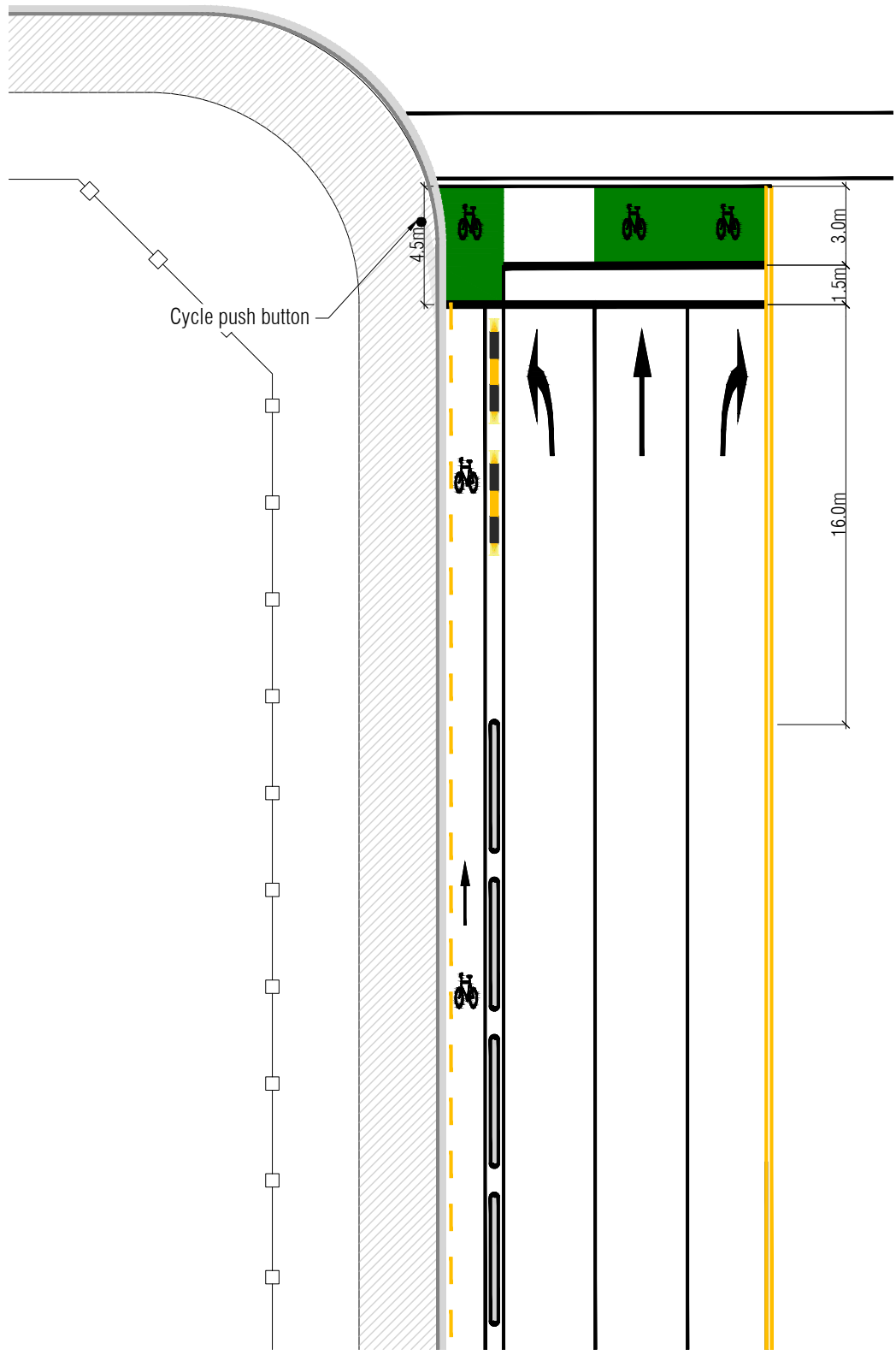
NOTES

1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PNO4-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. When distance between separation extended more than 2m, it is necessary to add design mitigation such as placement of RRPM.



TRANSPORT DESIGN MANUAL
Cycle separator (painted markings)

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|-----------------------|------------------|
| Date: 17/07/2024 | |
| SED No. CY0017 | Version A |



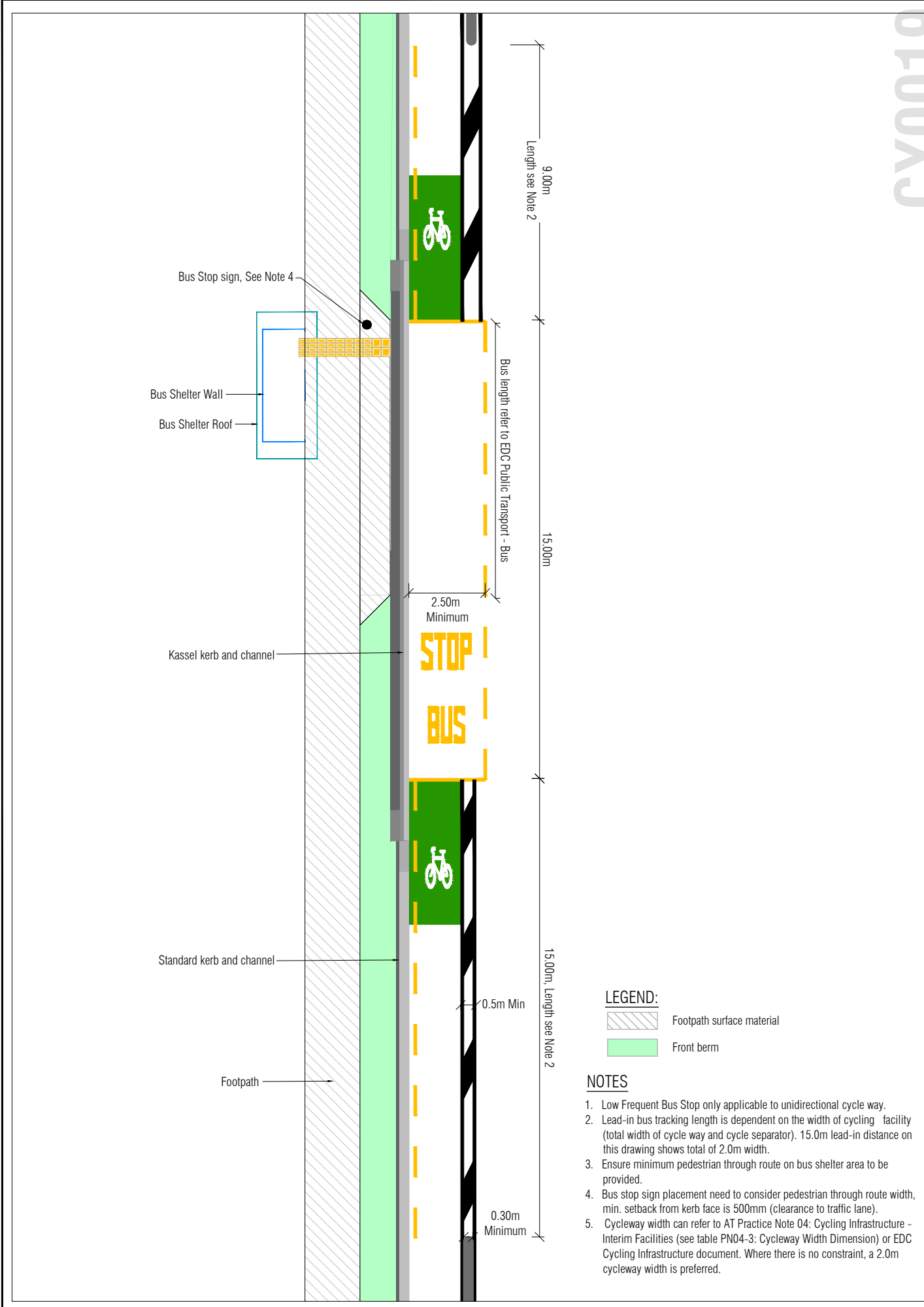
NOTES

1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Traffic lane width refer to TDM EDC Urban and Rural Roadway Design Manual.
3. ASB box guidance refer to PN04 section 6.2.3 Advanced Cycle Boxes (Advanced Stop Box)
4. See PN04 - section 6.2 Signalised Intersections. Separated cycleways arrangement up to intersection is preferred. Special consideration needs to be given to providing conflict separation between left-turning vehicles and through movement.
5. Exclusive cycle phase should be considered.
6. Vertical separation such as flexi post can be considered to provides visual cues for driver so vehicle would be positioned with a distance to cyclist.



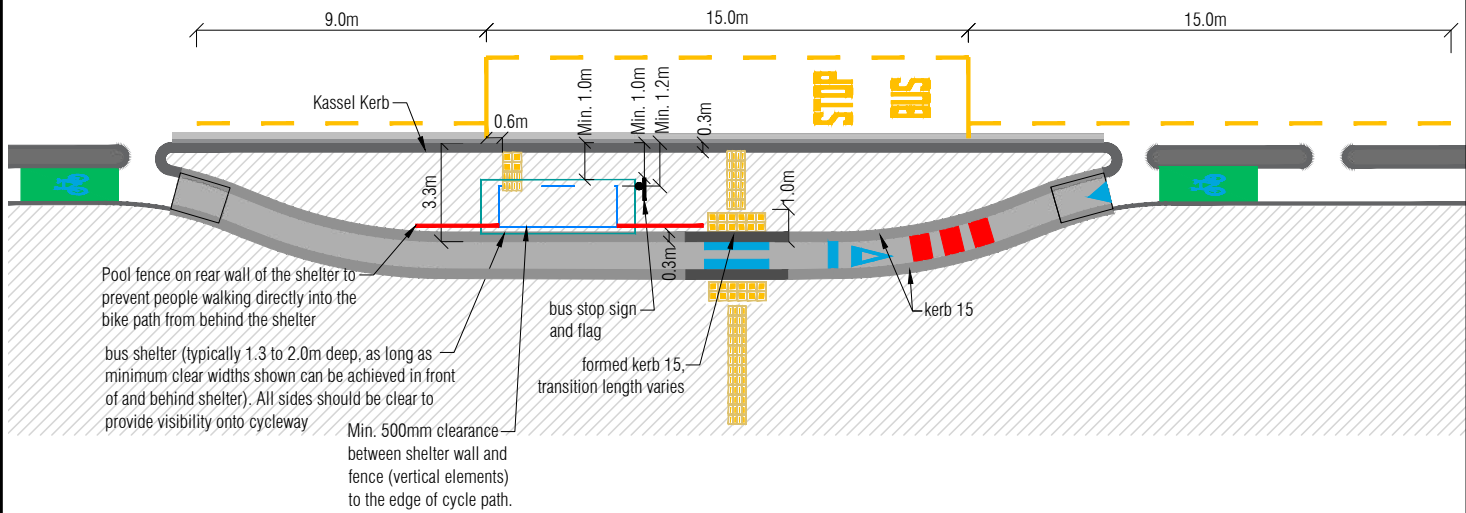
TDM TECHNICAL STANDARDS
Cycle approach at intersection (protected kerbside)

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| Date: 17/07/2024 | |
| SED No. CY0018 | Version A |

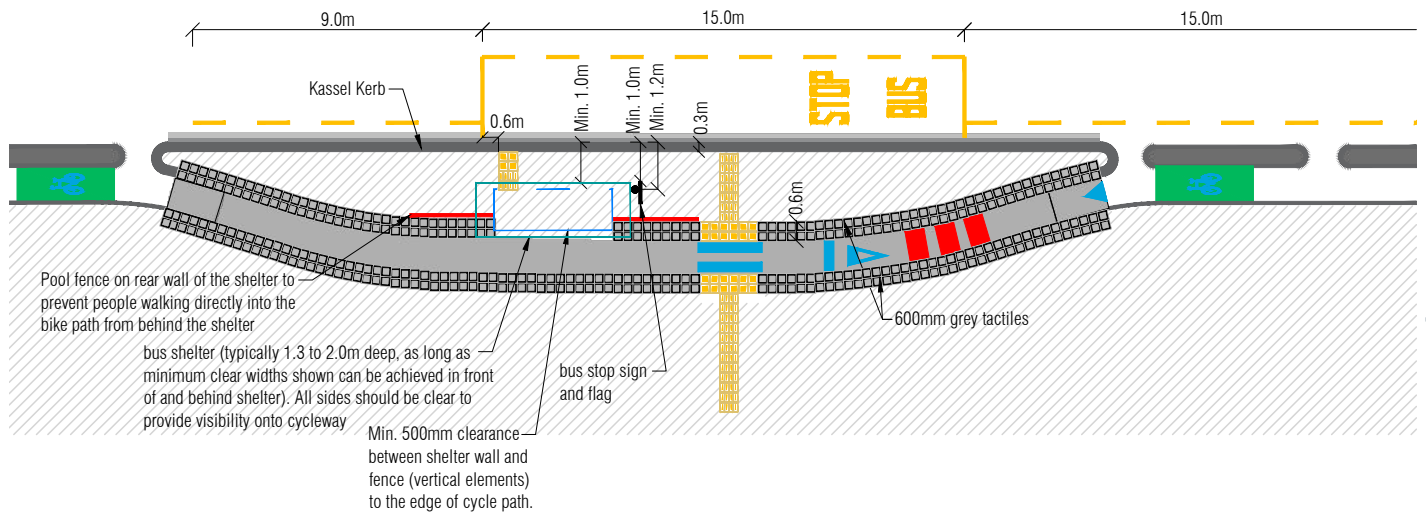


TRANSPORT DESIGN MANUAL
Cycle lane with Bus stop Non - Frequent network

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| Date: | 17/07/2024 | |
| SED No. | CY0019 | Version |
| | A | |



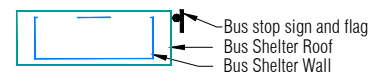
ONE-WAY CYCLEWAY AT BUS STOP (OPTION 1 - FULL ISLAND DESIGN) WITH KERB 15 DELINEATION



ONE WAY CYCLE WAY AT BUS STOP (OPTION 1 - FULL ISLAND DESIGN) WITH 600mm DELINEATION

NOTES

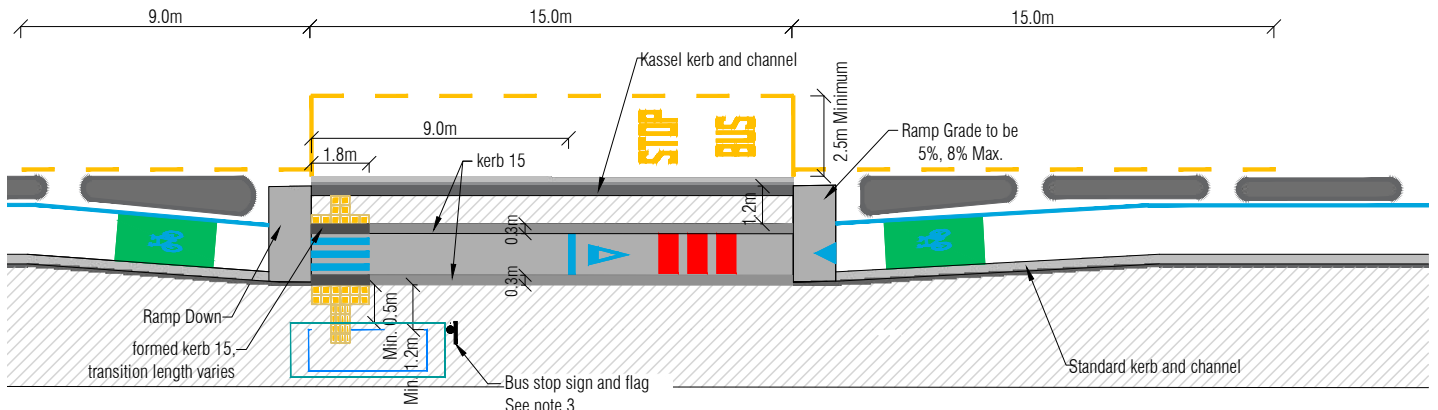
1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Distance between edge of pedestrian ramp on footpath area to bus shelter minimum is 1.0 to allow pedestrian through route. See EDC Footpath and Public Realm.
3. Ramp (pedestrian and cycle) need to follow accessible gradient, preferred gradient 5%, max. gradient 8%.



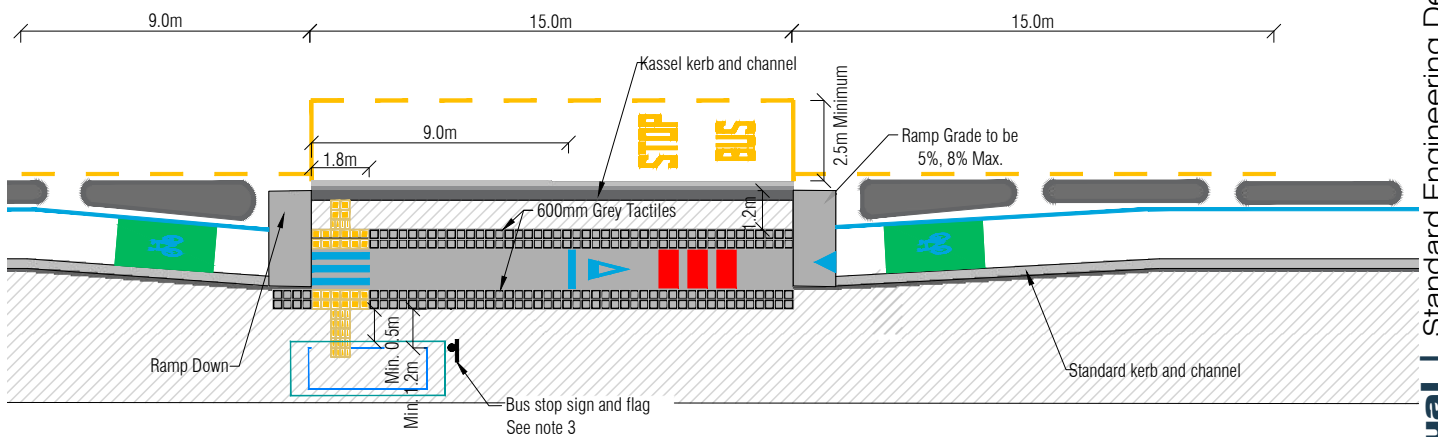
LEGEND:

- Cycle path with darker surface (asphalt or darker concrete 8Kg/m³)
- ▨ Bus platform and footpath (concrete 4Kg/m³)





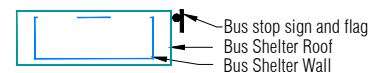
ONE WAY CYCLEWAY (OPTION 3 - BOARDING STRIP) WITH KERB 15 DELINEATION



ONE WAY CYCLEWAY (OPTION 3 - BOARDING STRIP) WITH 600mm DELINEATION

NOTES

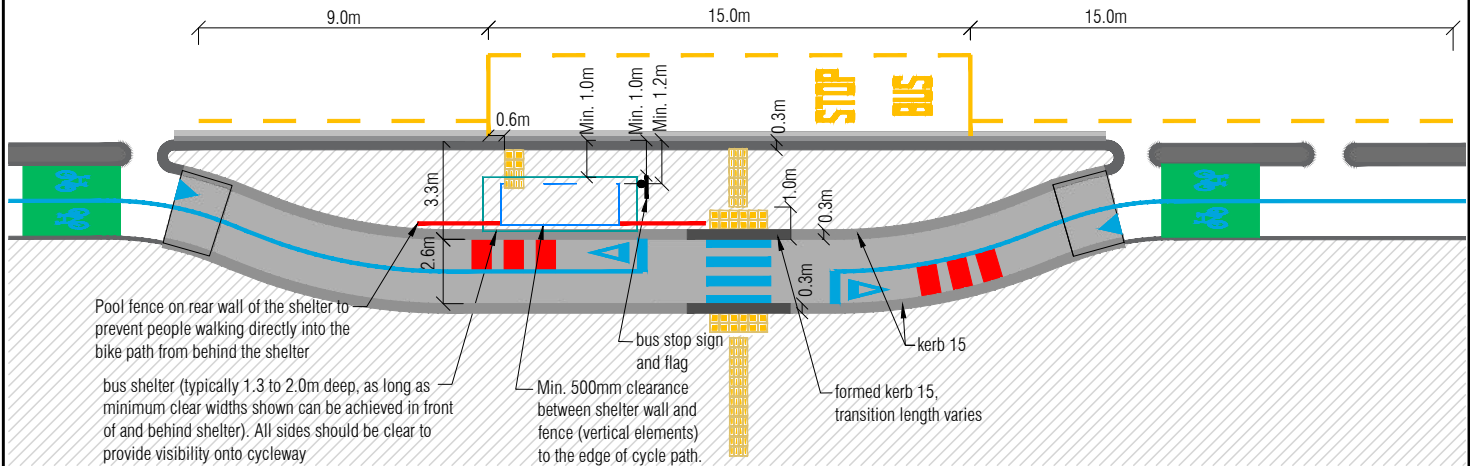
1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Ramp (pedestrian and cycle) need to follow accessible gradient, preferred gradient 5%, max. gradient 8%.
3. Bus stop sign pole to be aligned with bus shelter wall, to provide continuous pedestrian through-route



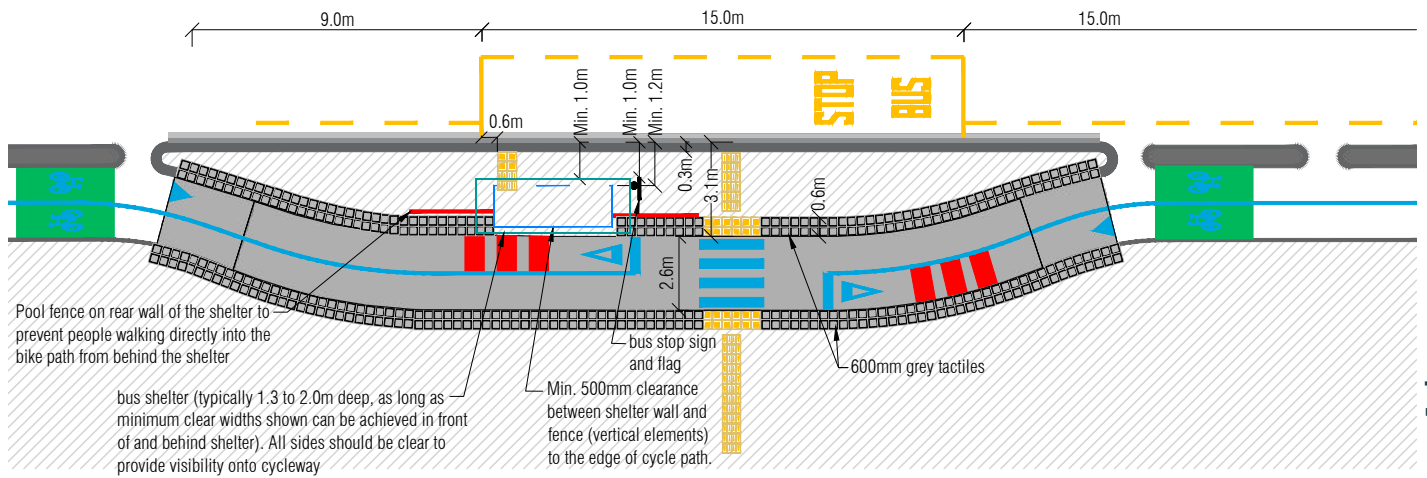
LEGEND:

- Cycle path with darker surface (asphalt or darker concrete 8Kg/m³)
- ▨ Bus platform and footpath (concrete 4Kg/m³)





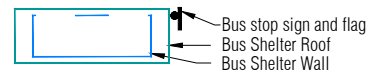
TWO-WAY CYCLEWAY AT BUS STOP (OPTION 1 - FULL ISLAND DESIGN) WITH KERB 15 DELINEATION



TWO-WAY CYCLEWAY AT BUS STOP (OPTION 1 - FULL ISLAND DESIGN) WITH 600mm DELINEATION

NOTES

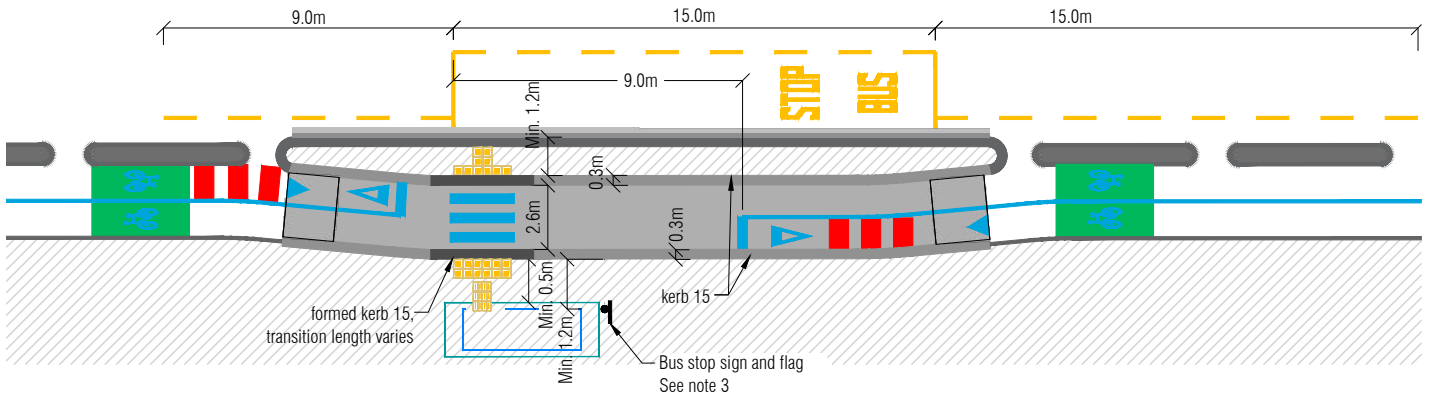
1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Distance between edge of pedestrian ramp on footpath area to bus shelter minimum is 1.0 to allow pedestrian through route. See EDC Footpath and Public Realm.
3. Ramp (pedestrian and cycle) need to follow accessible gradient, preferred gradient 5%, max. gradient 8%.



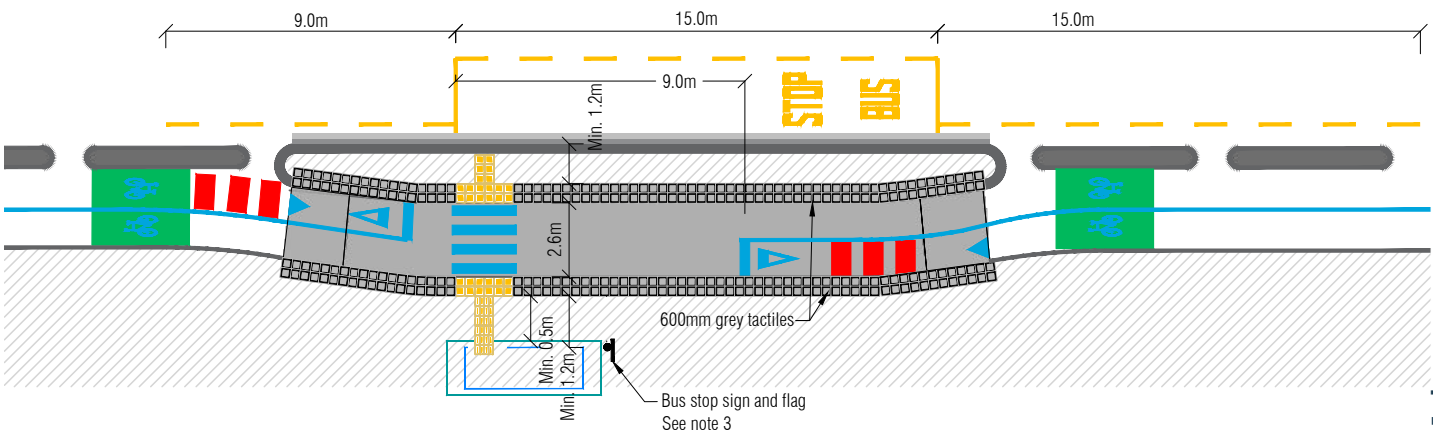
LEGEND:

- Cycle path with darker surface (asphalt or darker concrete 8Kg/m³)
- Bus platform and footpath (concrete 4Kg/m³)





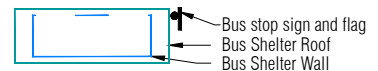
TWO-WAY CYCLEWAY AT BUS STOP (OPTION 3 - BOARDING STRIP) WITH KERB 15 DELINEATION



TWO-WAY CYCLEWAY AT BUS STOP (OPTION 3 - BOARDING STRIP) WITH 600mm DELINEATION

NOTES

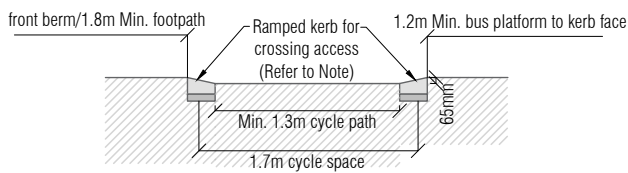
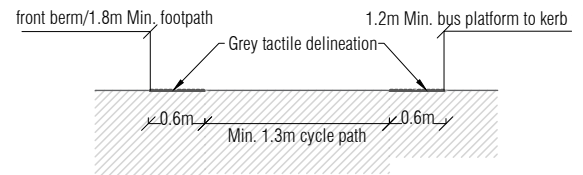
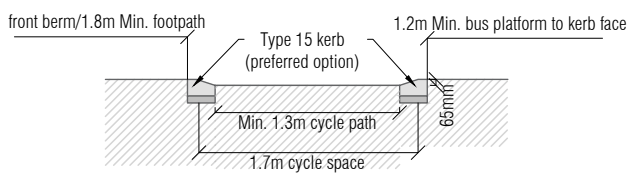
1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
2. Ramp (pedestrian and cycle) need to follow accessible gradient, preferred gradient 5%, max. gradient 8%.
3. Bus stop sign pole to be aligned with bus shelter wall, to provide continuous pedestrian through-route



LEGEND:

- Cycle path with darker surface (asphalt or darker concrete 8Kg/m³)
- ▨ Bus platform and footpath (concrete 4Kg/m³)





TYPICAL SECTION FOR DELINEATION

NOTES

1. Kerb access to be ramped across the full 300mm width to allow a gentle gradient access for pedestrians. This can be hand formed.

LEGEND:

 Bus platform and footpath (concrete 4Kg/m³)



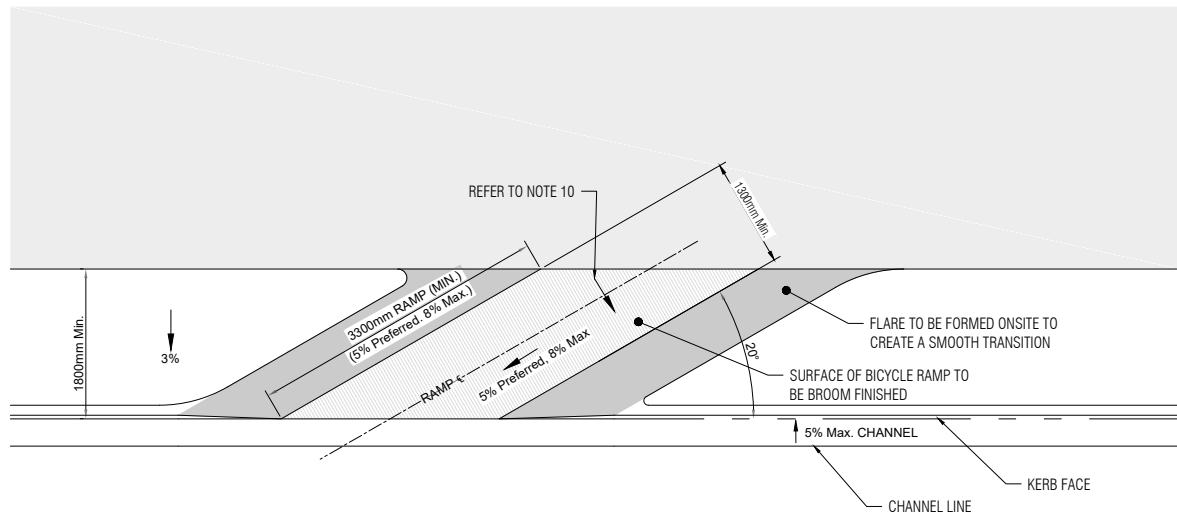
TRANSPORT DESIGN MANUAL

Typical section for delineation

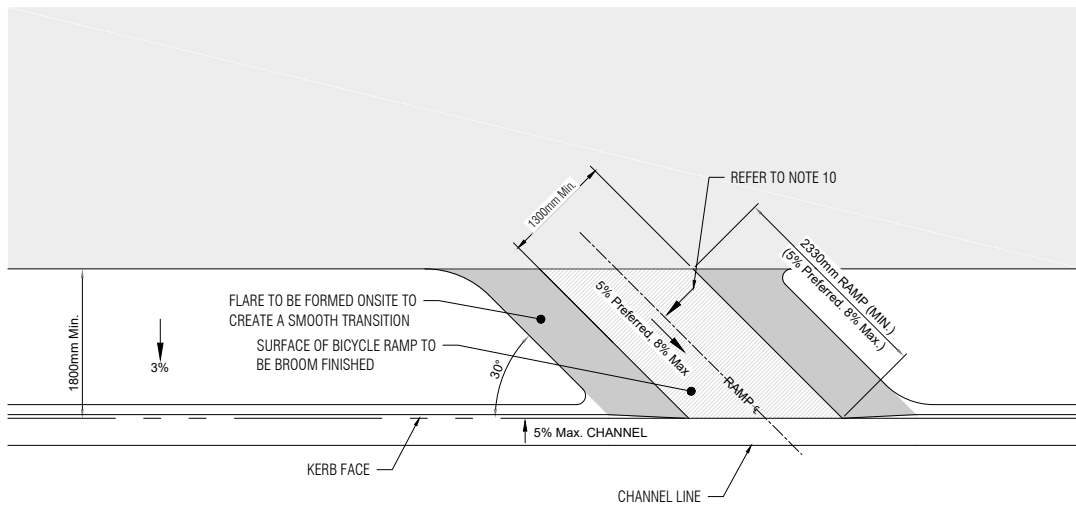
Date: 17/07/2024

SED No. Version

CY0024 A



CYCLE KERB RAMP UP DETAIL



CYCLE KERB RAMP DOWN DETAIL

NOTES

1. The preferred gradient of Cycle transition (line of travel) is 5%, with Max. gradient of 8%.
2. The width of front berm depends on the kerb height. The design shall meet the grades specified above.
3. The entry/exit degrees are affected by the design speed of cyclists and the types of cycle facilities (e.g. protected cycleway or on-road cycleway). The preferred degree at entry shall be 20° and 30° at the exit. However, the degrees can be designed based on the context and approved by AT Design and Standard team.
4. The entry point and crossing entry point must be smooth (with the avoidance of a concrete 'lip')
5. Ramps not intended for pedestrian use.
6. All concrete to be grade N32.
7. All concrete to be broom finished perpendicular to direction of travel.
8. Cycle ramp is to be cast in single pour with the kerb and channel. Existing kerb and channel to be saw cut and removed.
9. Dimensions in millimeters.
10. Gradient of ramp should not change by more than 8% along line of travel and 3% across line of travel.



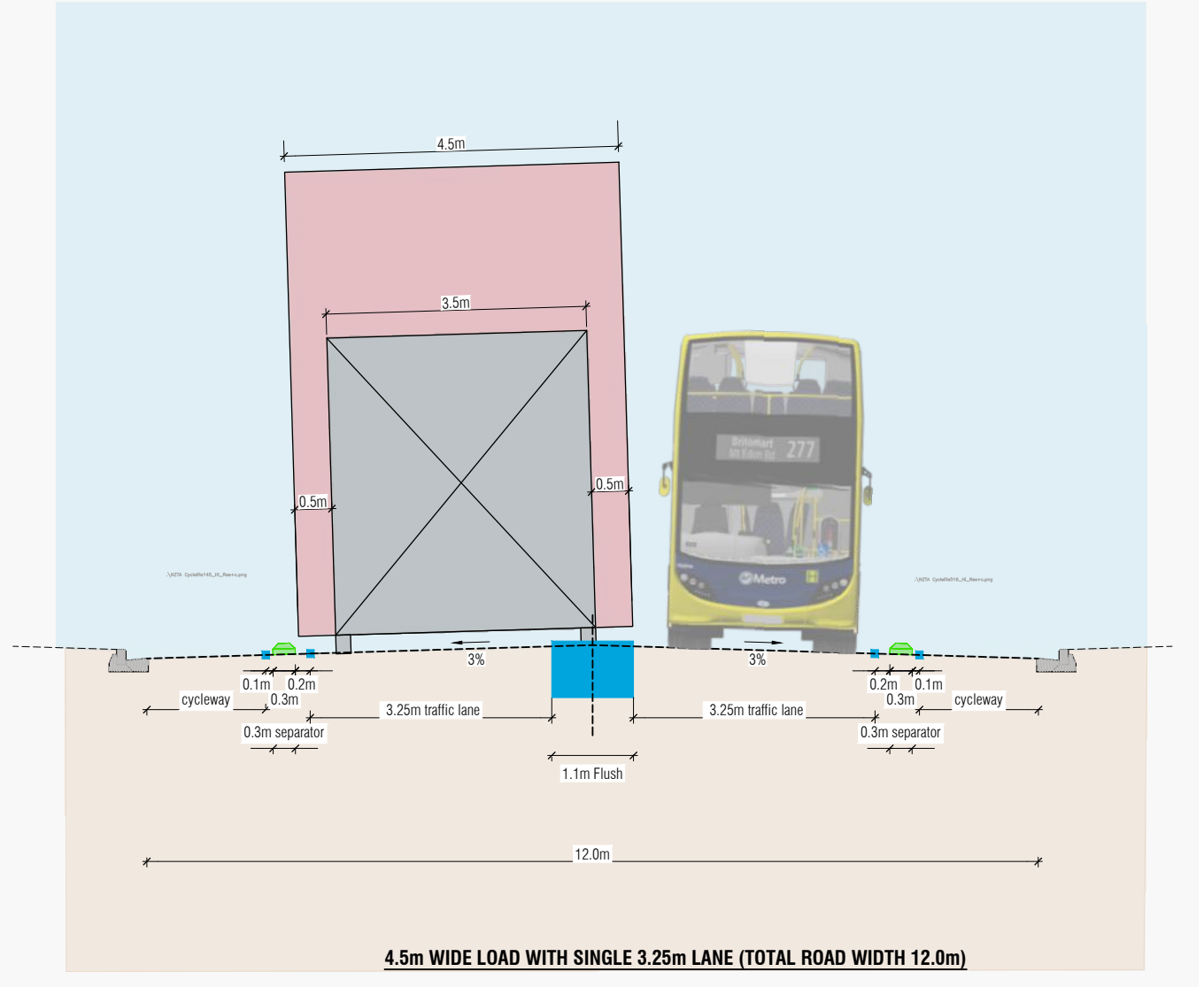
TRANSPORT DESIGN MANUAL

Cycle Kerb Ramp Up Detail

Date: 17/07/2024

SED No. Version

CY0025 A



NOTES

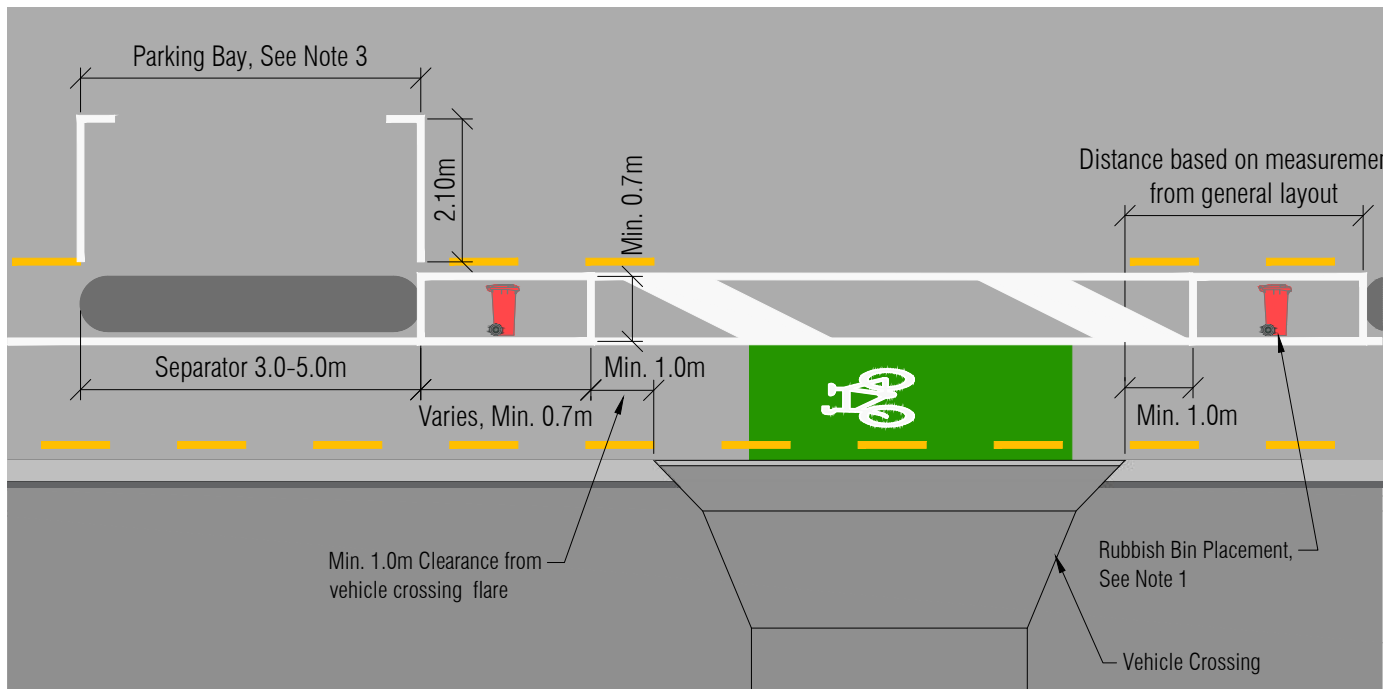
1. The diagram above illustrated the minimum vertical clearance for Over-dimensional Route cross section. This need to be consulted with AT Heavy Vehicle Team and approved by AT Chief Engineer.
2. 1. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.



TRANSPORT DESIGN MANUAL
Cycle Separator on over-dimension route

Date: 17/07/2024

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| SED No. CY0026 | Version A |
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ALTERNATIVE ROAD LAYOUT NEAR VEHICLE CROSSING WITH CYCLE SEPARATOR AND RUBBISH BIN ROAD MARKING STENCIL

NOTES

1. If needed, the rubbish bin replacement area can be marked with stencil.
2. Cycleway width can refer to AT Practice Note 04: Cycling Infrastructure - Interim Facilities (see table PN04-3: Cycleway Width Dimension) or EDC Cycling Infrastructure document. Where there is no constraint, a 2.0m cycleway width is preferred.
3. Refer to TDM- EDC Parking design for dimensions.

