AtkinsRéalis

Stage 2 Road Safety Audit

City of Edinburgh Council

July 2025
2526_084

GREENBANK - MEADOWS CYCLE ROUTE

Notice

This document and its contents have been prepared and are intended solely as information for City of Edinburgh Council and use in relation to the proposed Greenbank to Meadows Cycle Route, Edinburgh

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This document has 46 pages including the cover.

Document history

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Client signoff

Client	City of Edinburgh Council
Client Reference	RSA/24/012a
Project	Greenbank - Meadows Cycle Route
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Contents

INTRODUCTION

1. Introduction

1.1 Project Details

Report Title:	Greenbank - Meadows Cycle Route Stage 2 Road Safety Audit
Date:	July 2025
Document Reference and Revision:	2526_084
Prepared by:	AtkinsRéalis
Overseeing Organisation:	City of Edinburgh Council

AtkinsRéalis has been commissioned by City of Edinburgh Council (CEC) to undertake a Stage 2 Road Safety Audit (RSA) on the proposed Greenbank - Meadows Cycle Route, Edinburgh. This report documents the outcome of the RSA in the form of identified road safety problems and associated recommendations.

To the knowledge of the RSA Team, a Stage 1 RSA was undertaken AtkinsRéalis in July 2024.

1.2 Terms of Reference

The RSA has been conducted in accordance with the principles of GG 119 Road safety audit (revision 2.0.1), in the Design Manual for Roads and Bridges. The RSA team has examined and reported only on the road safety implications of the highway scheme proposals and has not examined or verified the compliance of the designs to any other criteria. Where there are issues that may be of interest to the Design Organisation, but not necessarily within the scope of the RSA, these have been provided to the Overseeing Organisation separately.

In addition to GG 119, this RSA has been informed by the RSA brief prepared and approved by Stewart Inglis of CEC.

1.3 RSA Team

The RSA team, as approved by Tracey Bach of CEC, was as follows:

RSA Team Leader, Atkins Transportation

RSA Team Member, Atkins Transportation

1.4 Site Visit

The RSA comprised a desktop review of the information provided, and a site visit was undertaken during daylight hours on 6th June 2025 between 13:30 and 16:30 with both members of the RSA team in attendance. During the site visit the road surface was dry and the weather was fine. Traffic levels were low with no congestion evident. Pedestrian and cycling levels were also low.

1.5 Scope

This RSA reviews alterations and additions to active travel infrastructure proposed as part of the Greenbank to Meadows Cycle Route. The scheme is situated between the Greenbank and Greenhill areas to the south of Edinburgh City Centre and spans predominately residential carriageways. The project accounts for the following locations and proposals include:

Braid Road:

- renewal of existing road markings;
- proposed road markings; and
- 2 proposed chicanes between Braidburn Cresent and Braid Crescent.

Comiston Road:

- proposed cycle direction signage

Hermitage Drive:

- proposed bi-directional cycle lanes;
- proposed reduction in junction extents using defender kerbs;
- proposed marked parking bays, and
- associated road markings and surfacing

Braid Avenue:

- 2 proposed uncontrolled crossings;
- proposed uni-directional cycle lanes;
- proposed reduction in junction extents using defender kerbs;
- proposed marked parking bays,
- removal of temporary vehicle restrictions at junction with Cluny Drive; and
- associated road markings and surfacing

Junction of Hermitage Gardens and Cluny Drive:

- removal of temporary vehicle restrictions; and
- reinstatement of road markings for vehicle through road arrangement

Clinton Road:

- closure of through road to vehicular traffic by use of planters;
- renewal of existing road markings; and
- proposed double yellow road markings

Midmar Road:

- proposed kerbed central islands
- proposed road markings; and
- proposed reduction in junction extents at Cluny Gardens using defender kerbs

Junction of Woodburn Terrace and Canaan Lane:

- proposed cycle direction signage and road markings

Cannan Lane:

- closure of through road to vehicular traffic by use of planters;

Junction of Newbattle Terrace and Canaan Lane:

- proposed cycle direction signage and road markings

Junction of Newbattle Terrace and Whitehouse Loan:

- proposed cycle direction signage and road markings

Whitehouse Loan:

- closure of through road to vehicular traffic by use of planters;
- proposed Road markings; and
- proposed cycle direction signage

1.6 Report Outline

Section 2 of this report documents any outstanding issues identified from previous Audit Reports and Section 3 documents the findings of the current RSA stage. Section 4 comprises the RSA Team statement.

Details of the information provided about the scheme are included in Appendix A. Problems and recommendation locations for the current RSA stage are shown on the plan included in Appendix B.

1.7 Notes and Clarifications

The recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem; alternative methods should be considered by the Design Organisation. GG 119 provides requirements and advice on the process for responding to this RSA report including the production and agreement of a separate RSA response report. The RSA response report provides the full audit trail of decision making at each stage of the process and captures the changes made as a result of the recommendations made here.

In addition to the information provided in the RSA Brief, queries submitted by the RSA team to the design organisation and responses received are outlined below:

RSA Team Query	Design Organisation Response
Is there a construction detail for the refuge islands proposed on Midmar Drive?	*"Detail will be the same as 'TYPICAL FOOTWAY REINSTATEMENT DETAIL' in drawing no. 330610712-STN-HGN-XX-DE-H-0121."*
Are swept paths available throughout the scheme?	*"Yes, we have swept paths for each junction where there is defender kerbs installed. See drawing attached. Drawing no. 330610712-STN-HGN-02-DR-CH-0001-0004."*
The construction detail for the cycle lane defender kerb separator shows a socket for 'bollard attachment'. If proposed could a detail for the bollards be provided?	*"A bollard attachment will be added to the construction details. Bollard dimensions – 1000mm High, 83mm Diameter."*
Could the carriageway and parking bay widths along Braid Avenue be confirmed?	*"All parking bay widths along Braide Avenue are 2m wide.* *The carriageway widths along Braid Avenue where parking bays are present range from 4.7m – 5.5m. In that screenshot the carriageway dimension is 5.2m.* *Note that the carriageway widths aren't totally accurate as they are based on OS mapping"*
Can we please confirm that the temporary concrete blocks proposed within the kerbed chicanes at Braid Road will be below carriageway level as shown on the construction details	*"The temporary concrete blocks within the defender kerb chicanes will sit on top of the carriageway surface"*

At the time of the site visit, the closure of through roads to vehicular traffic by use of planters had already been established on Canaan Lane and Whitehouse Loan.

ITEMS OUTSTANDING FROM PREVIOUS AUDITS

2. Items Outstanding from Previous Audits

To the knowledge of the RSA team a Stage 1 RSA was undertaken by AtkinsRéalis in July 2024. A response report was provided dated January 2025.

In reviewing the response report received for the previous Stage 1 RSA, the following outstanding issues have been identified at this Stage 2 RSA.

Stage 1 Problem Reference: 3.1

Location(s):	Hermitage Drive - at junction with Hermitage Gardens
Drawing(s):	0712-STN-GEN-GM-DR-CH-0001
Summary:	Drivers emerging from or accessing the side road may not realise the cycle track is bidirectional which may contribute to collisions with cyclists.

Stage 1 Description:

The proposals include a bidirectional cycle track on the northern side of Hermitage Drive. Drivers crossing the cycle track may not be aware that it facilitates two way cycling and may therefore not look for cyclists travelling westbound along the proposed cycle track. This may contribute to side impact collisions between cyclists (particularly westbound cyclists) and motorists crossing the track.

Stage 1 Recommendation:

It is recommended that appropriate signage and/or road markings are incorporated into the proposals to inform road users of cyclists travelling in both directions along the cycle track.

Stage 2 Comment:

The Design organisation response notes ‘Additional painted cycle symbols and arrows will be positioned on the section across the junction bellmouth’ however markings have not been provided in the detailed designs across the junction. It is recommended that these markings are added, positioned in the view of drivers approaching the junction, to inform them of the potential for two-way cycle movements.

At Stage 2 this problem is now applicable at an additional location. Please refer to Section 3 Problem 3.6.

Stage 1 Problem Reference: 3.11

Location(s):	Braid Avenue - cycle track at junction with Cluny Drive
Drawing(s):	0712-STN-GEN-GM-DR-CH-0002
Summary:	Drivers emerging from or accessing the side road may not be aware there is a cycle track which could result in collisions with cyclists

Stage 1 Description:

There are minimal features to notify drivers of cyclists in the proposed cycle tracks. Drivers may therefore not anticipate cyclists travelling so close to the give way line and as they look out for approaching motor vehicles beyond the parked vehicles they may inadvertently pull out into the path of cyclists. This may contribute to side impact collisions with cyclists.

Stage 1 Recommendation:

It is recommended that additional measures are incorporated to inform road users that cyclists may be travelling along the cycle track. This may include but is not limited to appropriate signage and / or cycle markings.

Stage 2 Comment:

It is noted that red surfacing has been proposed where cycle tracks/lanes cross side road junctions. Notwithstanding this, it is recommended that cycle symbols are positioned on the sections of cycle track across junctions to increase drivers' awareness of potential cyclists. As cycle track/lane provision at junctions varies between two-way and one-way, appropriate symbols are required not only to advise drivers of the presence of cyclists but also to advise to drivers which direction cyclists will be approaching from.

At Stage 2 this problem is now applicable at an additional location. Please refer to Section 3 Problem 3.13.

ITEMS RAISED AT THIS STAGE 2 RSA

3. Items Raised at this Stage 2 RSA

This section details the items raised in this Stage 2 RSA.

Problem:	***3.1***	
Location(s):	Scheme extents – cycle lanes	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107 to 0110	
Summary:	Risk of cyclists falling due to detritus and surface water.	

Description:

Debris and loose material were observed along carriageway edges and around gullies at several locations across the extents of the proposed cycle lanes. Detritus material may reduce tyre grip and unsteady a cyclist, increasing the risk of cyclists suffering injury from falls. This risk is exacerbated due to the potential for higher cycle speeds on sections with steep gradients such as Braid Avenue.

Furthermore, the debris may block gullies and impede drainage. This could result in water pooling on the cycleway potentially giving rise to cyclist injury from slips and falls, particularly during cold periods when water can form ice.

Recommendation:

It is recommended that debris and loose material is removed, and that the cycleway is regularly maintained.

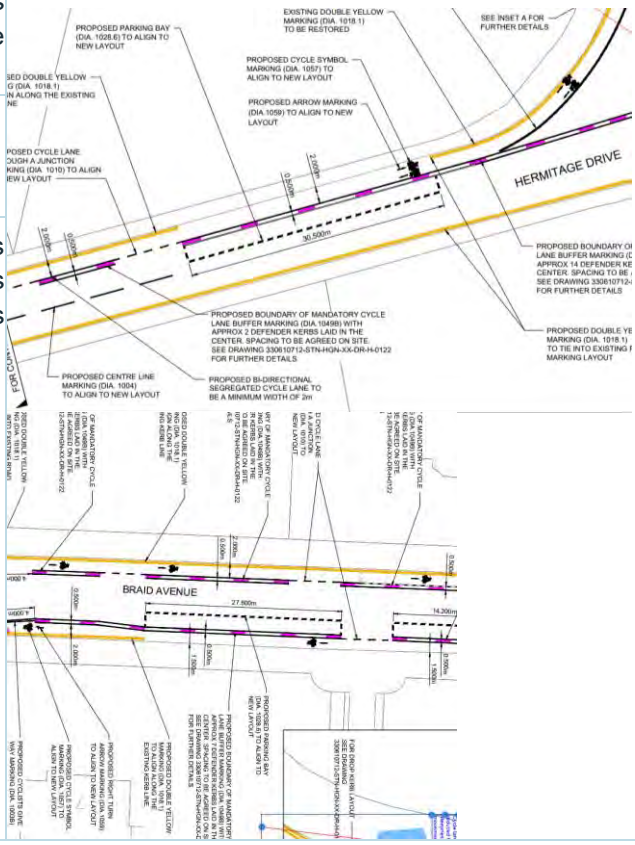
Problem:	***3.2***	
Location(s):	Scheme extents – cycle lanes	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107 to 0110	
Summary:	Risk of cyclists falling due to older style and sunken gullies.	

Description:

Older style iron gullies were observed at several locations across the extents of the proposed cycle lanes; some of which have sunken below surface levels. Gullies, particularly those pictured with large metal grates, within cycle lanes may result in the unsteadying of cyclists leading to falls. Those sunk below carriageway surface may also destabilise a cyclist contributing to injury. This risk is exacerbated due to the potential for higher cycle speeds on sections with steep gradients such as Braid Avenue.

Recommendation:

It is recommended cycle friendly gulley frames are provided and that sunken gullies are reset flush with cycleway surface.

Problem	3.3	
Location(s):	Scheme Extents- Parking bays adjacent to cycle lanes	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107 to 0110	
Summary:	Risk of collisions between cyclists and drivers existing/entering vehicles.	

Description:

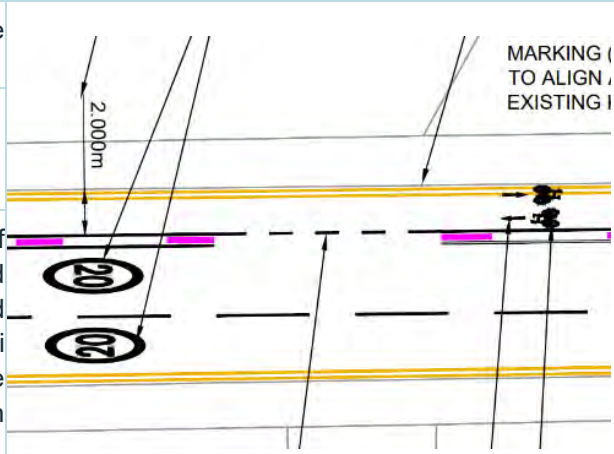
Parking bays are proposed adjacent to cycle lanes at various locations throughout the scheme extents. At these locations a 0.535m ‘buffer’ is proposed consisting of an 150mm road marking, 235mm kerb defender and 150mm cycle lane marking.

Whilst it is acknowledged a response has been provided to the potential risk of trips and falls when accessing and aggressing the bays (RSA Stage 1 Problem Ref 3.6) it is also anticipated that the parking bay proposals may present the following risks:

- people will be required to load / unload from the cycle lane, potentially causing obstructions which may contribute to risk of pedestrian and cycle collisions; and
- cyclists may be injured by striking vehicle doors opening into the cycle lane, particularly as vehicles are likely to park within the road marking extents, close to the defender kerbs. A 0.5m buffer would therefore not be achieved.

Recommendation:

It is recommended that sufficient buffer width is provided between parking bays and cycleways and /or an alternative parking or cycle facility arrangement is provided.

Problem	3.4	
Location(s):	Hermitage Drive Extents	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107, 0109 & 0111	
Summary:	Combination of longitudinal road markings and narrow bi directional cycle lane may result in collisions.	

Description:

Whilst it is acknowledged a response has been provided to the potential risk due to narrow cycle lanes and proximity to kerb lines (RSA Stage 1 Problem Ref 3.2), there is a potential risk that due to the provision of double yellow lines within the narrow bi-directional cycle lane:

- cyclists may ride longitudinally along the makings which may reduce tyre grip, particularly in wet conditions, increasing the risk of destabilisation, or
- cyclists may ride centrally within the cycle lane to avoid the markings increasing the risk of side swipe or head on collisions with oncoming cyclists.

Recommendation:

It is recommended that sufficient cycle lane width is provided. This may include but is not limited to an alternative cross section and road markings with suitable skid resistance.

Problem:	*3.5*
Location(s):	Western Scheme Extents - Hermitage Drive at Braid Road
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107
Summary:	Risk of cyclists becoming destabilised when transitioning between cycle and shared use facilities

And

Description:

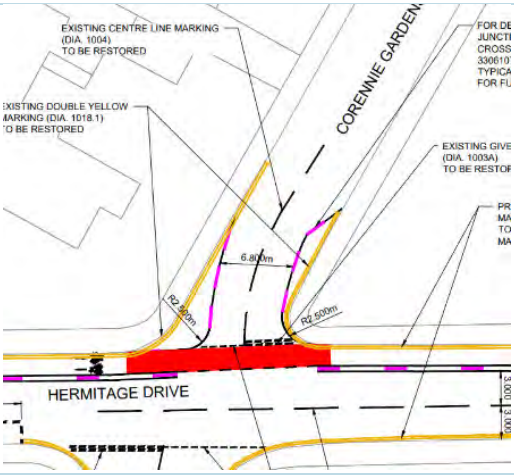
At the western scheme extents, the proposed two-way cycle lanes will transition to and from an existing shared use area at footway level (Green arrow). However, the current flush kerb extents (shown in red above) and cycle road marking do not align with the proposed cycle lanes, directing cyclists into the primary position within the carriageway (Blue arrow). There is a risk that cyclists transitioning between the two facilities may become unsteadied when making sharp manoeuvres or when crossing the drop kerb at an acute angle which may lead to falls and an increased the risk of injury.

Furthermore, as pictured above, the extents of the dropped kerb are unclear on approach to the proposed two-way cycle lanes. There is a risk that during periods of inclement weather such as snow fall or leaf litter accumulation may further obscure the dropped kerb extents. It is anticipated cyclists will proceed directly between the cycle lanes and shared area, at risk of colliding with full height kerbs. This may contribute to injury from falls.

Recommendation:

It is recommended that the existing flush kerb and/or markings are altered to better direct cyclists between the proposed cycle facility and the shared use path.

Problem:	***3.6***
Location(s):	Hermitage Drive - at junction with Corrennie Gardens
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107
Summary:	Drivers emerging from or accessing the side road may not realise the cycle lane is bidirectional which may contribute to collisions with cyclists.



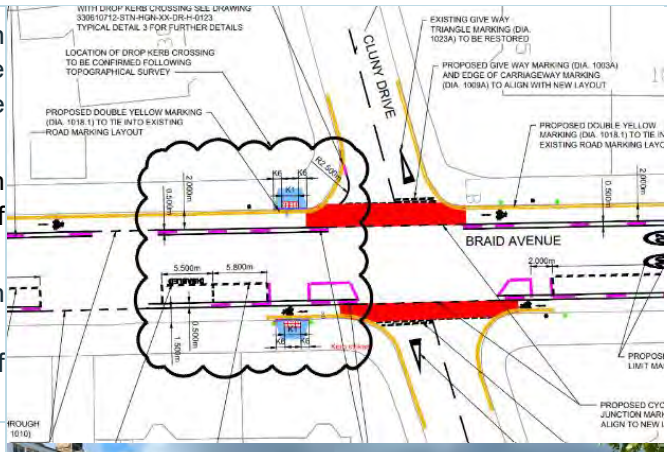
Description:

The proposals include a bidirectional cycle lane on the northern side of Hermitage Drive. Drivers crossing the cycle lane may not be aware that it facilitates two-way cycling and may therefore not look for cyclists travelling in both directions along the proposed cycle lane. This may contribute to side impact collisions between cyclists (particularly westbound cyclists) and motorists crossing the lane. This risk is heightened by the inconsistency in cycling infrastructure in the surrounding area, where facilities alternate between uni-directional and bi-directional layouts.

Recommendation:

It is recommended that cycle markings and/or signage are provided, positioned in the view of drivers approaching the junction, to inform drivers of the potential for two-way cycle movements.

Problem	**3.7**
Location(s):	Parking bay on Hermitage Drive east of Corrennie Gardens Parking Bay on Braid Ave north of Cluny Drive Parking bay on Hermitage Gardens North of Cluny Drive
Drawing(s):	330610712-STN-HGN-02-DR-CH-0107 , 0109 & 0111
Summary:	Reduced visibility at junctions may result in side impact collisions



Description:

Parking bays are proposed adjacent to side road junctions at the locations noted above. When occupied, visibility to/from the junction may be obstructed which may contribute to side impact type collisions as vehicles emerge from side roads. The risk is exacerbated on Braid Avenue as parking bays have been relocated further into the carriageway from the existing kerbline to accommodate the proposed cycle lane, reducing visibility further.

Recommendation:

It is recommended that parking bays extents are amended to provide suitable intervisibility at junctions.

Problem	**3.8**	
Location(s):	Braid Avenue Extents	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0108 to 0110	
Summary:	Tree canopies obstructing cycle lanes may give rise to injury.	

Description:

The eastern and western footways on Braid Avenue are lined with mature trees within proximity to the proposed uni-directional cycle lanes. Dense tree canopies and branches hang over the proposed cycle lanes and some trees are growing at an angle, protruding into the proposed lanes. There is a risk that cyclists may collide with branches and vegetation increasing the risk of injury. The likelihood of vegetation strikes is exacerbated during the hours of darkness when conspicuity of the vegetation observed may be reduced.

Additionally, cyclists may make sudden manoeuvres to avoid obstructions, increasing the risk of falls. This risk may be exacerbated on the northbound lane where cyclists may gain higher speeds due to the downhill gradient.

Recommendation:

It is recommended that the effective width of the cycle lanes is unobstructed, this may include but is not limited to the removal of trees and vegetation. If this is not possible it is recommended that an alternative north/ south route is investigated.

Problem:	***3.9***
Location(s):	Braid Avenue Extents
Drawing(s):	330610712-STN-HGN-02-DR-CH-0108 to 0110
Summary:	Southbound cycle lane width may result in side swipe collisions or collisions with tree canopies/ street furniture.

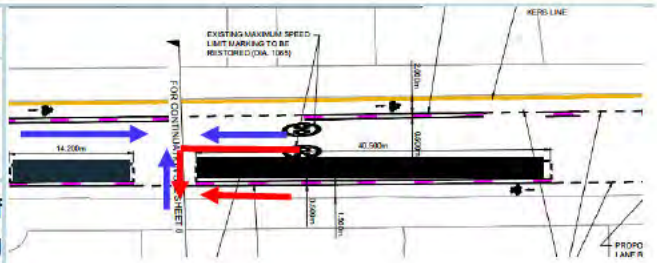
Description:

During the site visit it was observed that Braid Avenue has a steep gradient. When travelling uphill cyclists require greater lateral movement than when cycling on flat or downhill profiles. The current layout proposes a 1.5m uphill cycle lane width. There is a risk that due to the required lateral width of a moving cyclist, cyclists may side swipe each other or collide with vegetation or kerbed defenders at the lane extents, contributing to the likelihood of falls and/ or injury.

Recommendation:

It is recommended that the southbound cycle lane width is increased to allow for greater lateral movement for cyclists travelling uphill.

Problem:	***3.10***
Location(s):	Braid Avenue Extents
Drawing(s):	330610712-STN-HGN-02-DR-CH-0108 to 0110
Summary:	Proximity of formalised parking bays to accesses may restrict intervisibility between users.



Description:

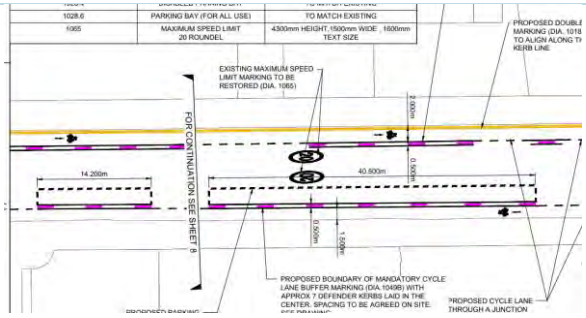
Formalised parking facilities are proposed along Braid Avenue in close proximity to existing accesses. When the parking bays are occupied, it is anticipated that:

- parked vehicles may obstruct visibility between drivers exiting the accesses to vehicles on the mainline, increasing the likelihood of side impact collisions (blue arrows above); and
- parked vehicles may obstruct visibility of cyclists travelling along the cycle way from drivers tuning into accesses (particularly where long lengths of parking bays are proposed) which may contribute to collisions between vehicles and cyclists (red arrows above).

Recommendation:

It is recommended that parking bay extents are amended to allow sufficient intervisibility between road users.

Problem:	***3.11***
Location(s):	Braid Avenue Extents
Drawing(s):	330610712-STN-HGN-02-DR-CH-0108 to 0110
Summary:	Insufficient passing space may result in side swipe or reverse related collisions



Description:

The proposed carriageway width on Braid Avenue, which varies between 4.7- 5.5m, may not provide sufficient space for two vehicles to pass simultaneously. Gaps in the formalised bays are provided, lengths of which vary. At some locations, the proposed gap length may not provide sufficient manoeuvring room between bays for two vehicles to pass.

This arrangement increases the risk of:

- vehicles attempting to pass each other where there is insufficient width to do so, increasing the risk of side swipe collisions
- requirement for vehicles to reverse over extended distances, increasing the risk of reversing related collisions and driver frustration.

These risks are exacerbated during peak times when higher vehicles volumes can be expected and where longer length parking bays are proposed with fewer gaps for vehicles to pass.

Recommendation:

It is recommended that simultaneous vehicle movements are better accommodated. This may include but is not limited to, altering lane widths to allow two-way passing or altering parking bay extents to provide sufficient and regular gaps in parking to enable vehicles to pass.

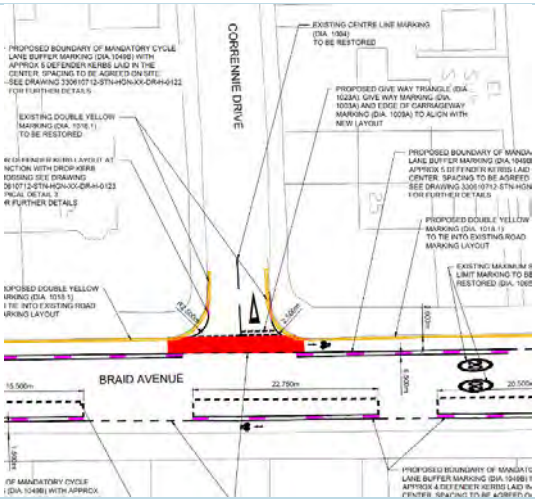
Problem	**3.12**	
Location(s):	Uncontrolled pedestrian crossing of Braid Avenue, North of Hermitage Drive	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0108	
Summary:	Risk of collisions between pedestrians and vehicles	

Description:

Intervisibility between southbound drivers on Braid Avenue and pedestrians crossing from east to west is reduced by an existing tree immediately adjacent to the crossing. Reduced intervisibility between users increases the risk of collisions between vehicles and pedestrians, as pedestrians may inadvertently enter into the path of a vehicle to cross.

Recommendation:

It is recommended that the tree is removed to provide sufficient intervisibility between road users.

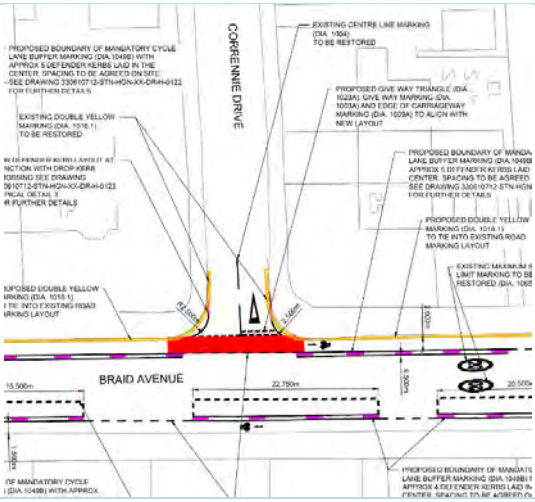
Problem:	***3.13***	
Location(s):	Braid Avenue - cycle lane at junction with Correnie Drive	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109	
Summary:	Drivers emerging from or accessing the side road may not be aware there is a cycle lane which could result in collisions with cyclists	

Description:

It is noted that red surfacing has been proposed where cycle lanes cross the side road junction. However, due to lack of signage and markings, drivers may not anticipate cyclists travelling so close to the give way line. This may contribute to side impact collisions with cyclists.

Recommendation:

It is recommended that appropriate signage and/or road markings are incorporated into the proposals to increase drivers' awareness of potential cyclists.

Problem:	***3.14***	
Location(s):	Braid Avenue - cycle lane at junction with Correnie Drive	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109	
Summary:	Occupied parking bay restricts access to cycle lane, increasing risk of collisions.	

Description:

Marked parking bays are proposed on the south side of Braid Avenue opposite Correnie Drive. If occupied the bay may restrict cyclists manoeuvring from Correnie Drive to the northbound cycle lane on Braid Avenue. This may increase the risk of cyclists having to make sharp manoeuvres to access the cycle lane, increasing the risk of falls or collisions with parked vehicles. Parked cars may also restrict visibility from northbound cyclists on the cycle lane to cyclists joining the lane where they may not be expected to, which may contribute to collisions between cyclists.

Recommendation:

It is recommended that access to the cycle lanes is facilitated at side road junctions. This may involve but is not limited the removal of the parking bay proposed opposite Correnie Drive.

Problem:	***3.15***	
Location(s):	Braid Avenue and Corrennie Drive	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109	
Summary:	Proximity of marked parking bays to junction may result in side-swipe collisions.	

Description:

Marked parking bays are proposed on the south side of Braid Avenue opposite Corrennie Drive. As shown on the provided swept path drawing, large vehicles making the manoeuvre from Corrennie Drive to Braid Avenue will encroach into the parking bays which may result in side impact or nose to tail type collisions between manoeuvring and parked vehicles. Furthermore, drivers may undertake reversing manoeuvres to avoid collisions with parked vehicles at risk of reversing into the path of pedestrians, cyclists or ensuing vehicles.

Recommendation:

It is recommended that the layout is amended to remove the conflict between parked and manoeuvring vehicles. This may involve but is not limited to amendment of parking bay location/ extents and/or alterations to the defender kerb layout.

Problem:	***3.16***	
Location(s):	Uncontrolled pedestrian crossing of Braid Avenue, south of Cluny Drive	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109	
Summary:	Gulley within proposed pedestrian crossing may contribute to the likelihood of slips and falls	

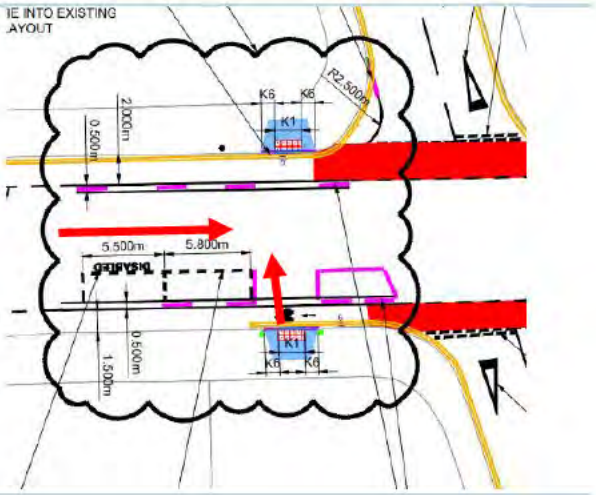
Description:

During the site visit it was observed that a gully will be located in the proposed pedestrian crossing of Braid Avenue. This increases the risk of pedestrian slips and falls which could result in injury. There is also potential for footwear, such as high heels to be caught in the open grating, which may also give rise to injury from falls

Recommendation:

It is recommended that the gully is relocated, or the crossing be relocated out with the gully location.

Problem:	***3.17***
Location(s):	Uncontrolled pedestrian crossing of Braid Avenue, south of Cluny Drive
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109
Summary:	Lack of intervisibility between users at crossing increases the risk of collisions between vehicles and pedestrians



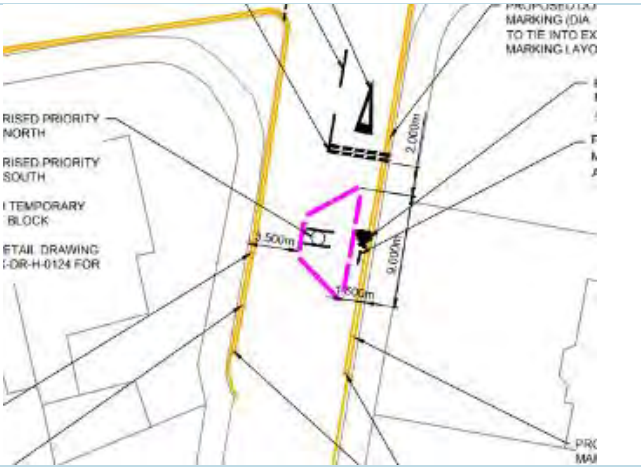
Description:

Marked parking bays are located immediately adjacent to the proposed pedestrian crossing of Braid Avenue. Visibility between pedestrians crossing from the east and motorists travelling north on Braid Avenue may be restricted if the bays are occupied, increasing the risk of collisions between pedestrians and vehicles. The risk may be exacerbated due to the downhill gradient which increases the potential for higher vehicle speeds.

Recommendation:

It is recommended that the parking layout is amended to provide sufficient intervisibility between pedestrians and motorists at the crossing.

Problem	**3.18**
Location(s):	Braid Road
Drawing(s):	330610712-STN-HGN-02-DR-CH-0109
Summary:	Concrete blocks used to mount signage, increase the potential severity of injury if struck.



Description:

Defender kerbs are proposed to form chicanes on Braid Road, with signage to be mounted on temporary concrete blocks within. This configuration may result in increased injury severity, if a vehicle strikes a defender kerb and subsequently collides with a concrete block, particularly for example a rider of a powered two-wheeler.

Recommendation:

It is recommended that an alternative method which is less likely to contribute to driver/ rider injury is used to mount temporary signs situated within the chicanes.

Problem:	***3.19***	
Location(s):	Comiston Road and Whitehouse Loan	
Drawing(s):	330610712-STN-HGN-02-DR-CH-0106 & 0125	
Summary:	Obstructed signage may increase the risk of sudden or late manoeuvring.	

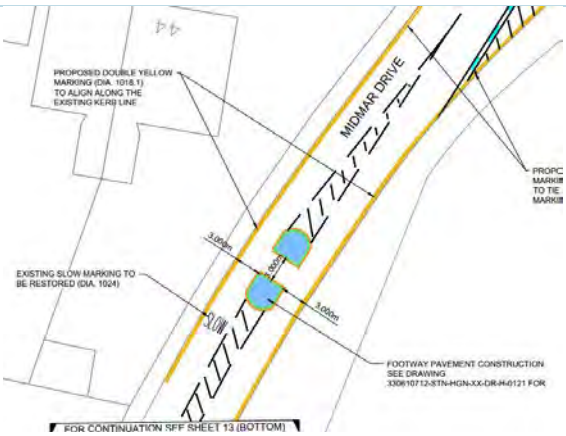
Description:

Overhanging vegetation was observed where the proposed cycle direction signs on Comiston Road and Whitehouse Loan are to be mounted, most likely obstructing them from road user view. Without advanced warning of the cycle route's continuation which enables cyclists to position themselves appropriately for upcoming turning manoeuvres, there is a risk of cyclists making late or sudden manoeuvres. This may contribute to falls or collisions with other road users.

Recommendation:

It is recommended that vegetation is cut back to provide suitable visibility to signs.

Problem:	***3.20***
Location(s):	Midmar Drive
Drawing(s):	330610712-STN-HGN-02-DR-CH-01113 & 0114
Summary:	Lack of vertical elements increases the risk of vehicles colliding with kerbed refuges.



Description:

Kerbed islands are proposed on Midmar Drive. In the absence of vertical features to highlight the presence of the islands there is an increased risk of vehicles striking the kerb, which could lead to loss-of-control collisions or secondary incidents if tyres are damaged during a kerb strike. This may be exacerbated due to road markings on approach aligning with the kerb.

This risk is heightened during adverse weather where snow accumulation or leaf litter may obscure the kerb lines within the carriageway and due to the requirement for vehicles to drive within the central hatched -in line with the islands- when passing parked vehicles.

Recommendation:

It is recommended that vertical features, such as reflective bollards, are provided to clearly highlight the kerbed islands within the carriageway. It is also recommended that proposed road markings guide drivers beyond the kerb extents.

RSA TEAM STATEMENT

4. RSA Team Statement

We certify that this Road Safety Audit has been carried out in accordance with the principles of GG 119.

AUDIT TEAM LEADER:

Name: [redacted] Signed: [redacted]

Position: Engineer Date: 15/07/2025

Organisation: AtkinsRéalis

AUDIT TEAM MEMBER:

Name: [redacted] Signed: [redacted]

Position: Engineer Date: 15/07/2025

Organisation: AtkinsRéalis

APPENDICES

Appendix A. Drawings and Documents

A.1 Drawings

Reference	Description	Revision	Date
330610712-STN-HGN-02-DR-CH-0201-0211	Greenbank to Meadows Cycle Route Site Clearance Drawings Sheet 1-11	C01	06/03/2025
330610712-STN-HGN-02-DR-CH-0101-0126	Greenbank to Meadows Cycle Route General Arrangement Drawings Sheet 1-26	C01	06/03/2025
330610712-STN-HGN-XX-DR-H-0121-0125	Greenbank to Meadows Cycle Route Constriction Details Drawings Sheet 1-26	C01	06/03/2025

A.2 Documents

Type	Description	Revision	Date
RSA Brief	Brief Report Greenbank -Meadows RSA/24/012a	-	29/04/2025
RSA Stage 1 Response	Travelling Safely Greenbank - Meadows Response Report Stage 1	-	15/01/2025

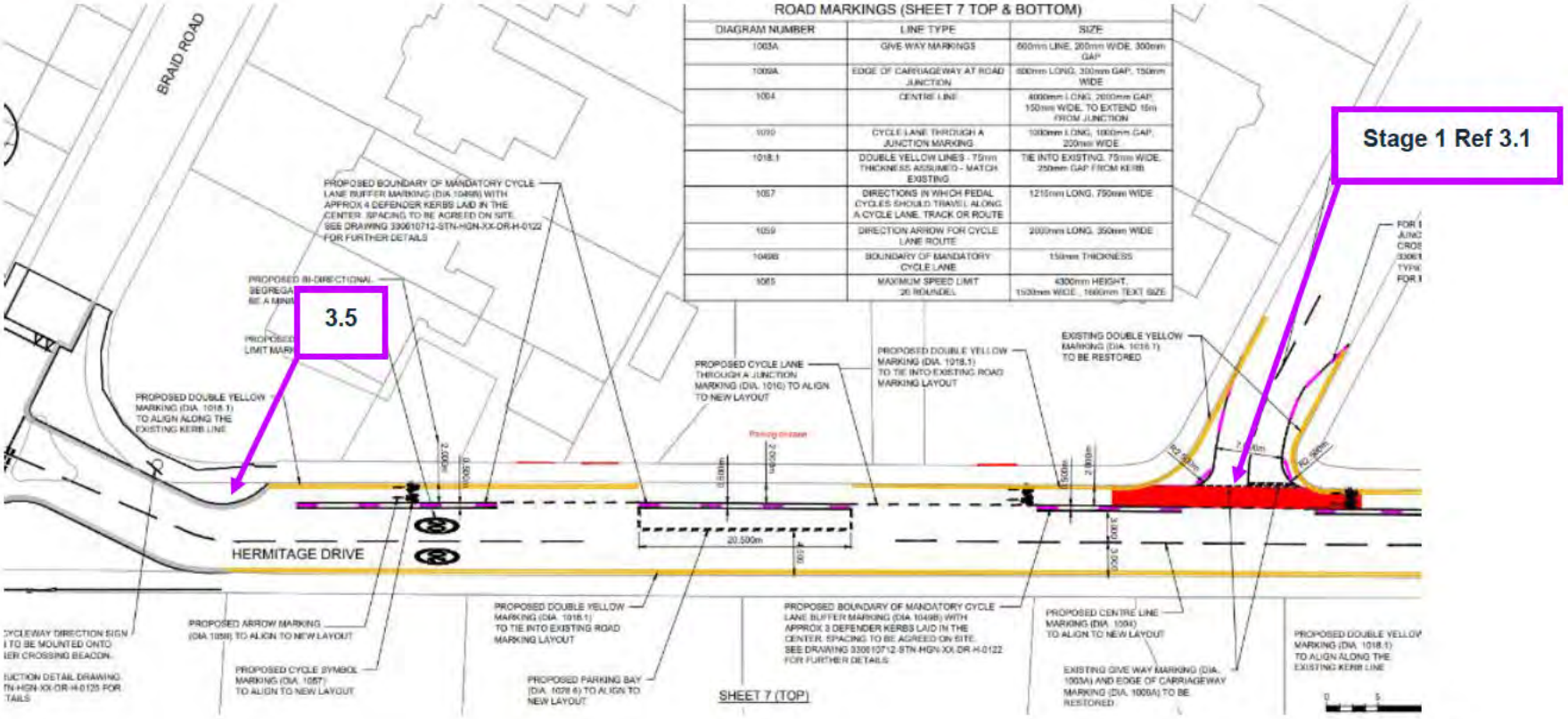
Appendix B. Location of Problems

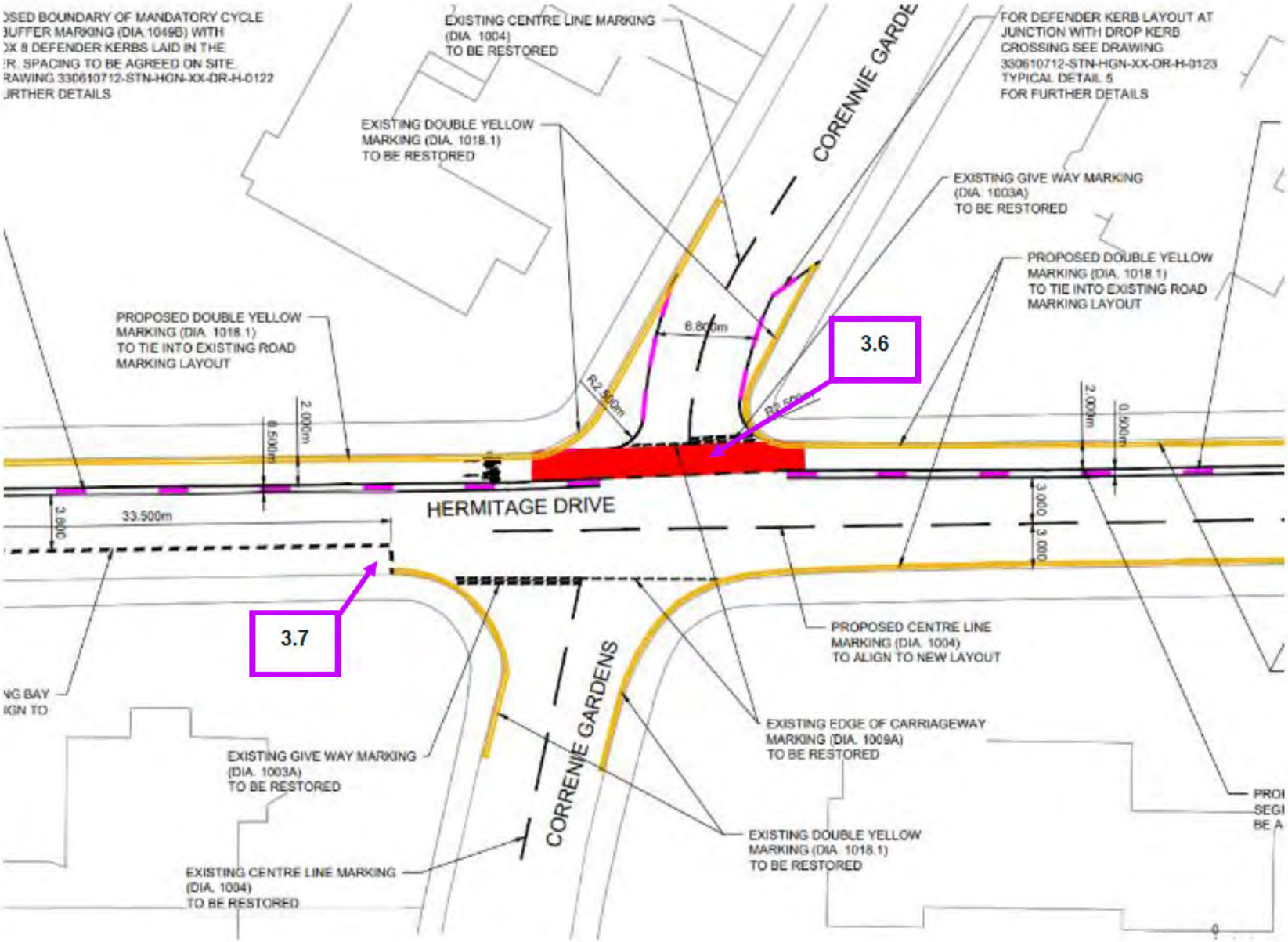
Note: Locations of problems, and associated recommendations, are approximate only.

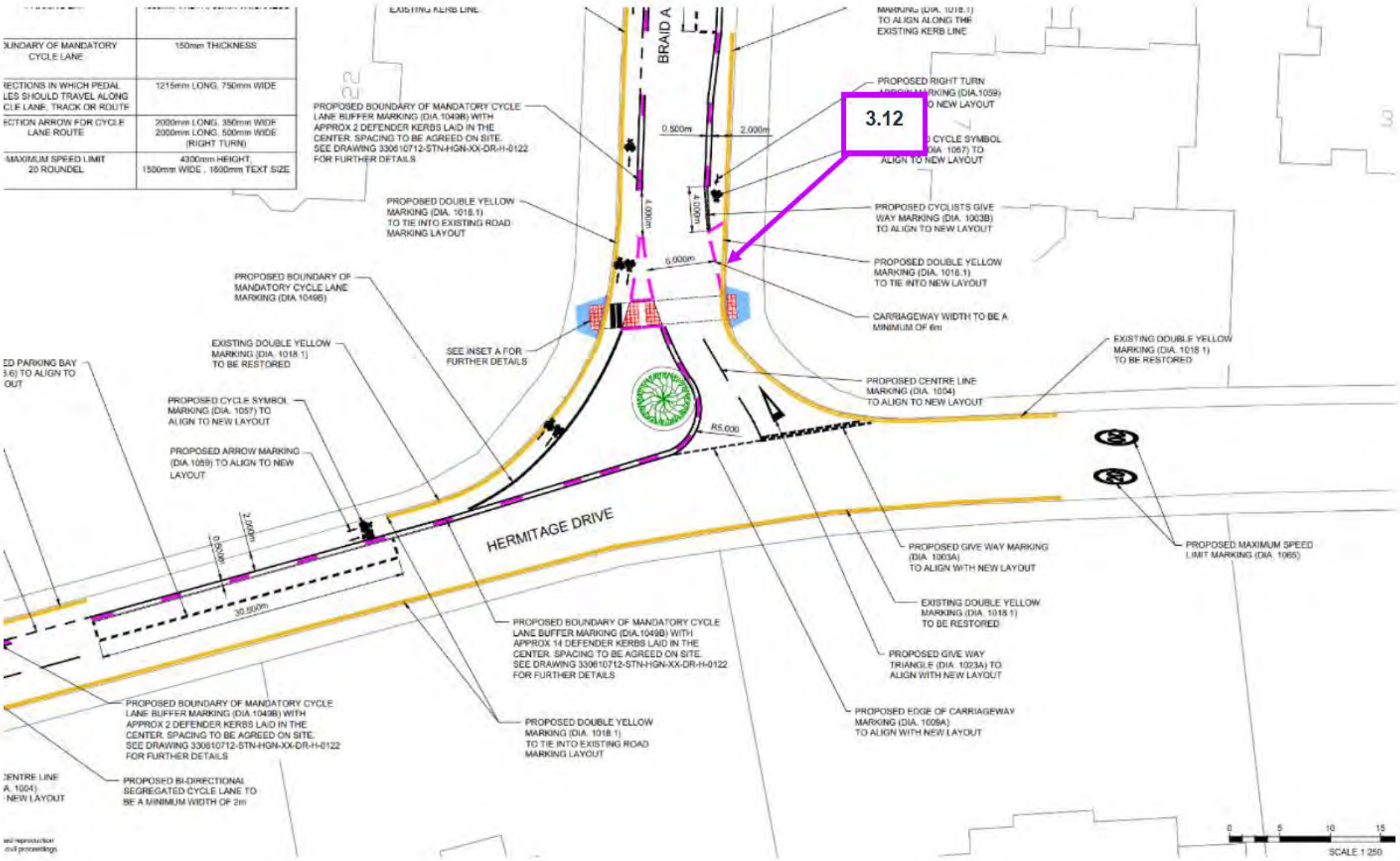
Problems 3.1 to 3.3 relate to the scheme wide cycle lane extents

Problem 3.4 relates to the extent of cycle lanes on Hermitage Drive

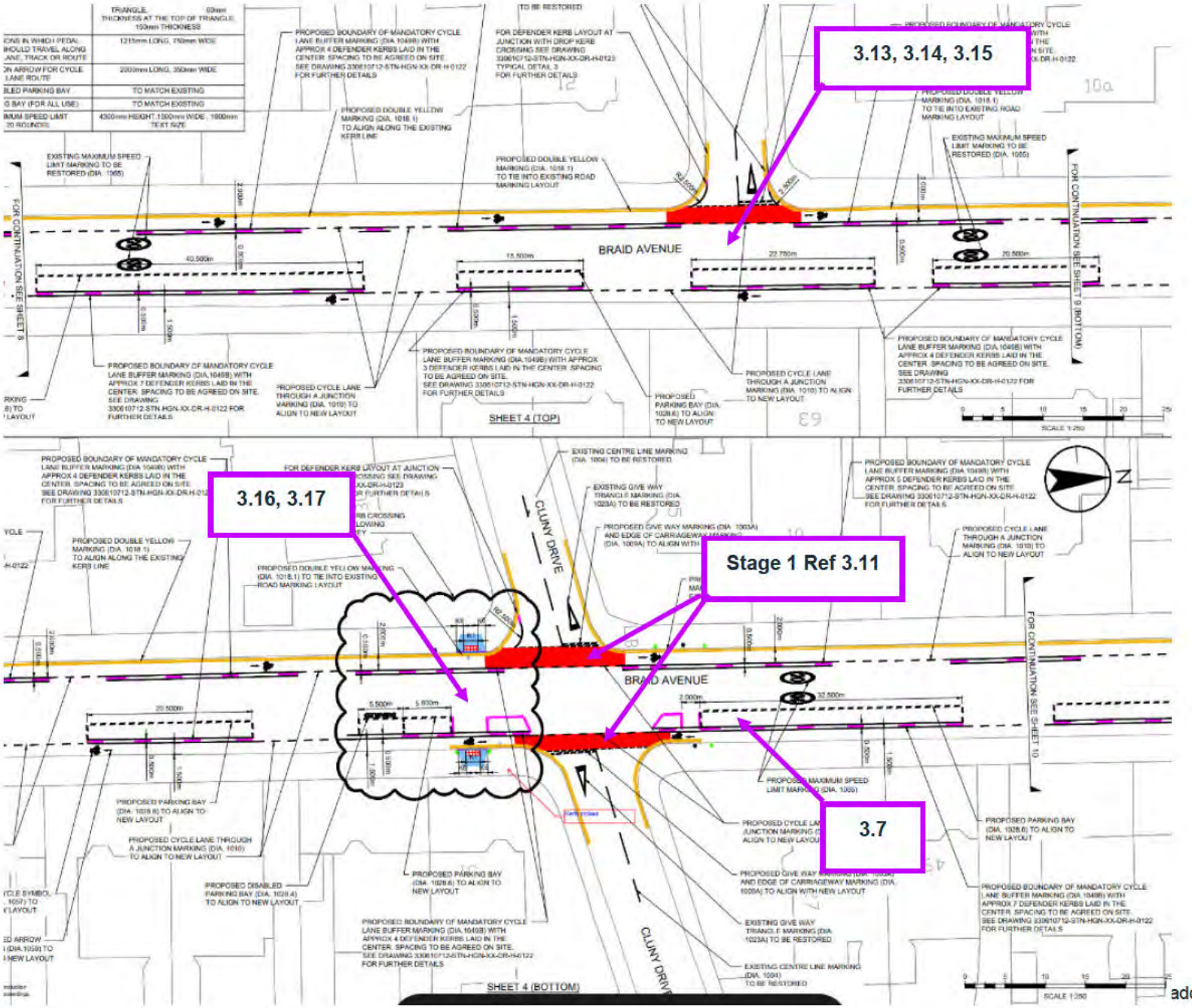
Problems 3.8 to 3.11 relate to the extents of Braid Avenue

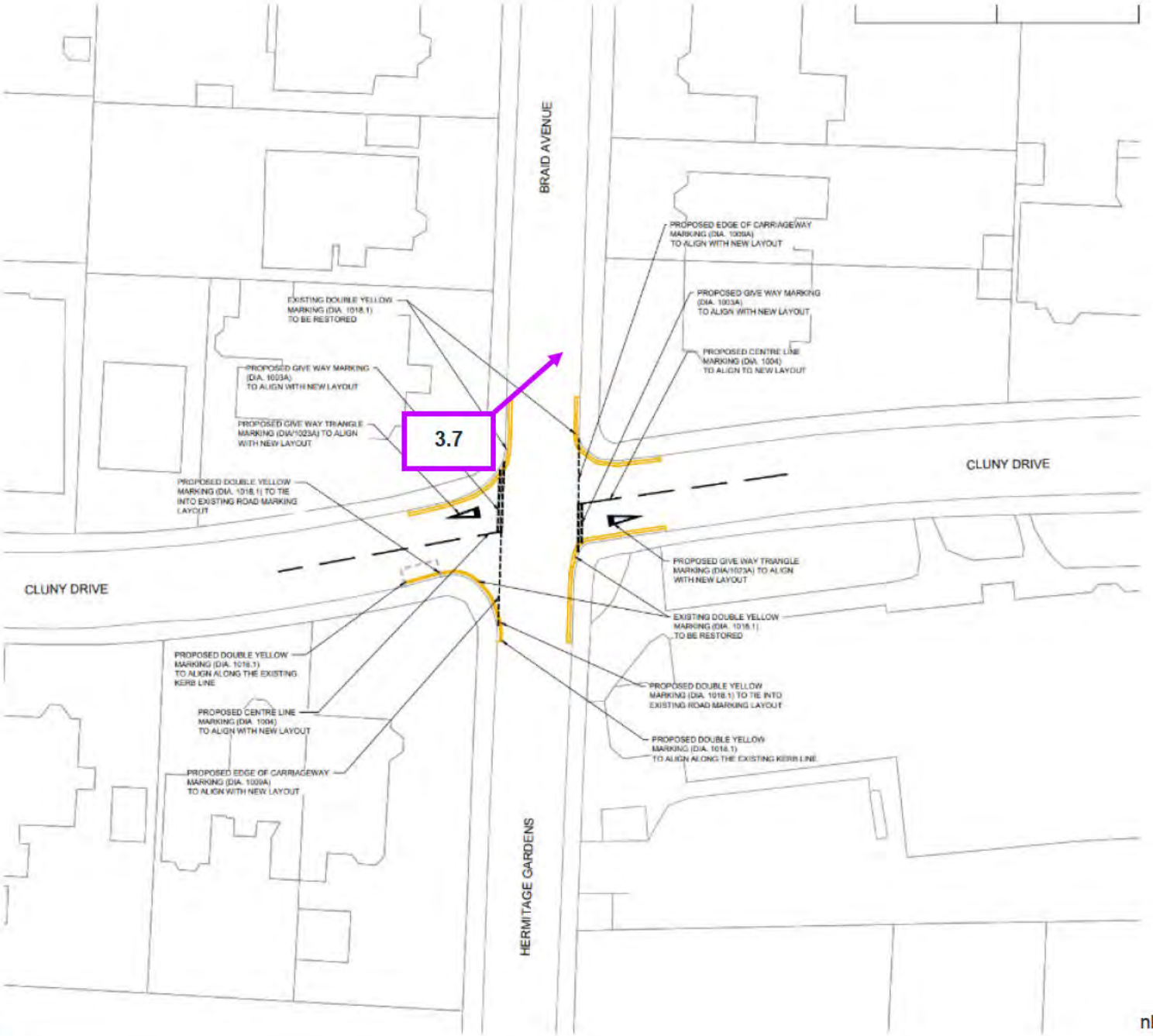


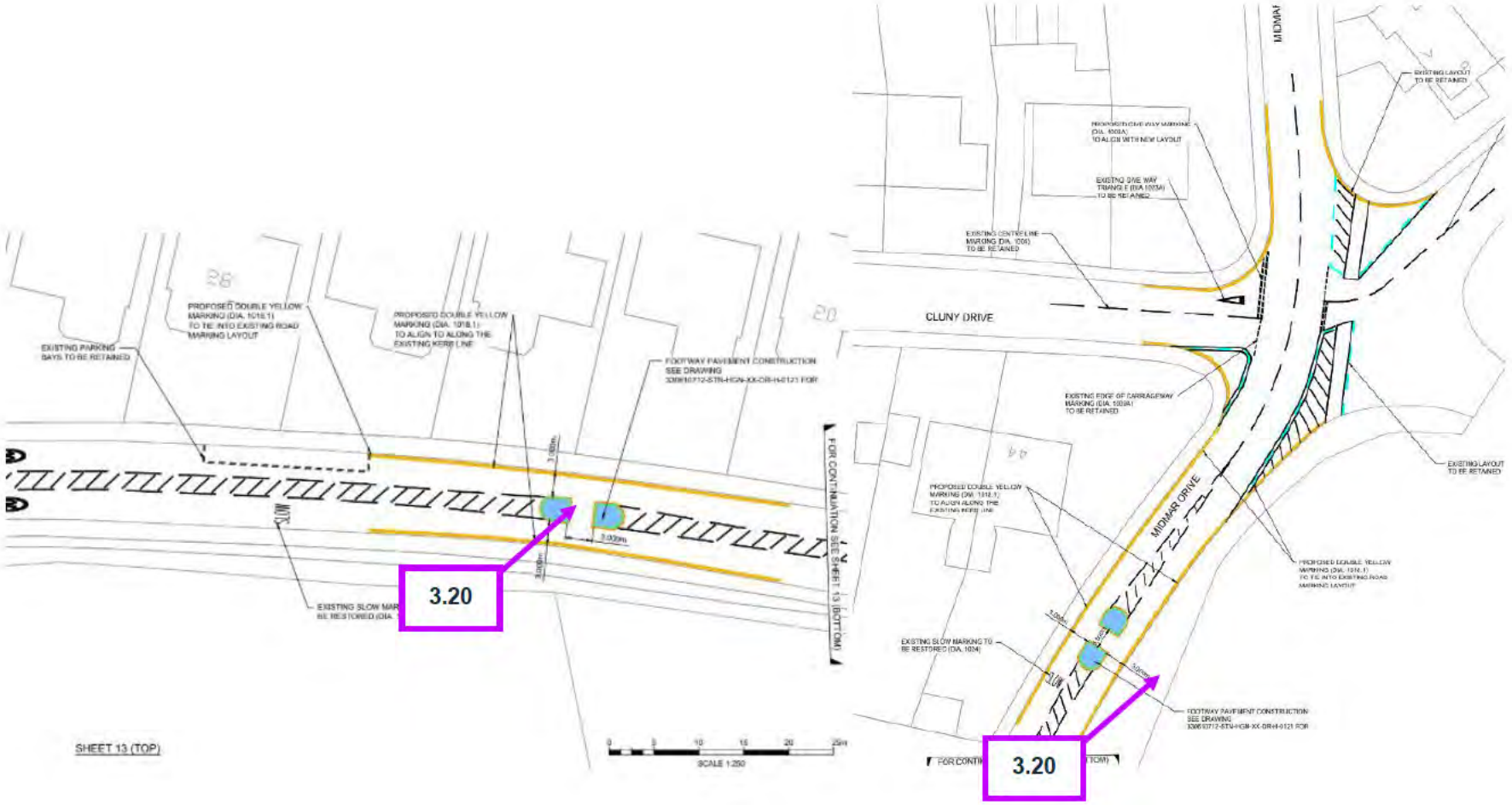

OSED BOUNDARY OF MANDATORY CYCLE
BUFFER MARKING (DIA.1049B) WITH
OX 8 DEFENDER KERBS LAID IN THE
R. SPACING TO BE AGREED ON SITE.
RAWING 330610712-STN-HGN-XX-DR-H-0122
JRTHER DETAILS
EXISTING CENTRE LINE MARKING
(DIA. 1004)
TO BE RESTORED
EXISTING DOUBLE YELLOW
MARKING (DIA. 1018.1)
TO BE RESTORED
CORENNIE GARDE
FOR DEFENDER KERB LAYOUT AT
JUNCTION WITH DROP KERB
CROSSING SEE DRAWING
330610712-STN-HGN-XX-DR-H-0123
TYPICAL DETAIL 5
FOR FURTHER DETAILS
EXISTING GIVE WAY MARKING
(DIA. 1003A)
TO BE RESTORED
PROPOSED DOUBLE YELLOW
MARKING (DIA. 1018.1)
TO TIE INTO EXISTING ROAD
MARKING LAYOUT
PROPOSED DOUBLE YELLOW
MARKING (DIA. 1018.1)
TO TIE INTO EXISTING ROAD
MARKING LAYOUT
3.6
R2.500m
6.800m
2.000m
0.500m
3.800
33.500m
HERMITAGE DRIVE
3.000
3.000
3.7
PROPOSED CENTRE LINE
MARKING (DIA. 1004)
TO ALIGN TO NEW LAYOUT
NG BAY
IGN TO
EXISTING EDGE OF CARRIAGEWAY
MARKING (DIA. 1009A)
TO BE RESTORED
EXISTING GIVE WAY MARKING
(DIA. 1003A)
TO BE RESTORED
CORRENNIE GARDENS
EXISTING DOUBLE YELLOW
MARKING (DIA. 1018.1)
TO BE RESTORED
EXISTING CENTRE LINE MARKING
(DIA. 1004)
TO BE RESTORED

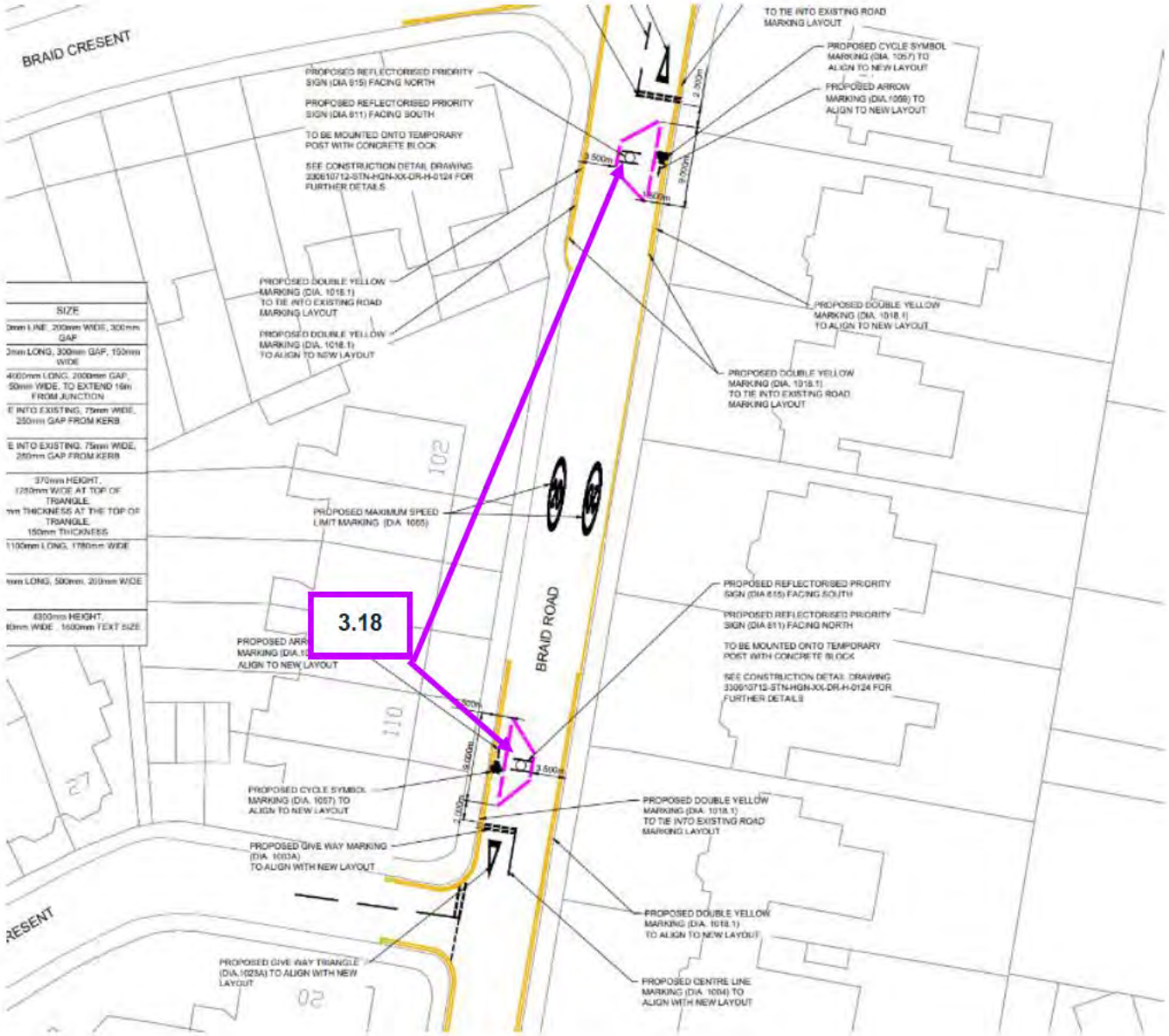


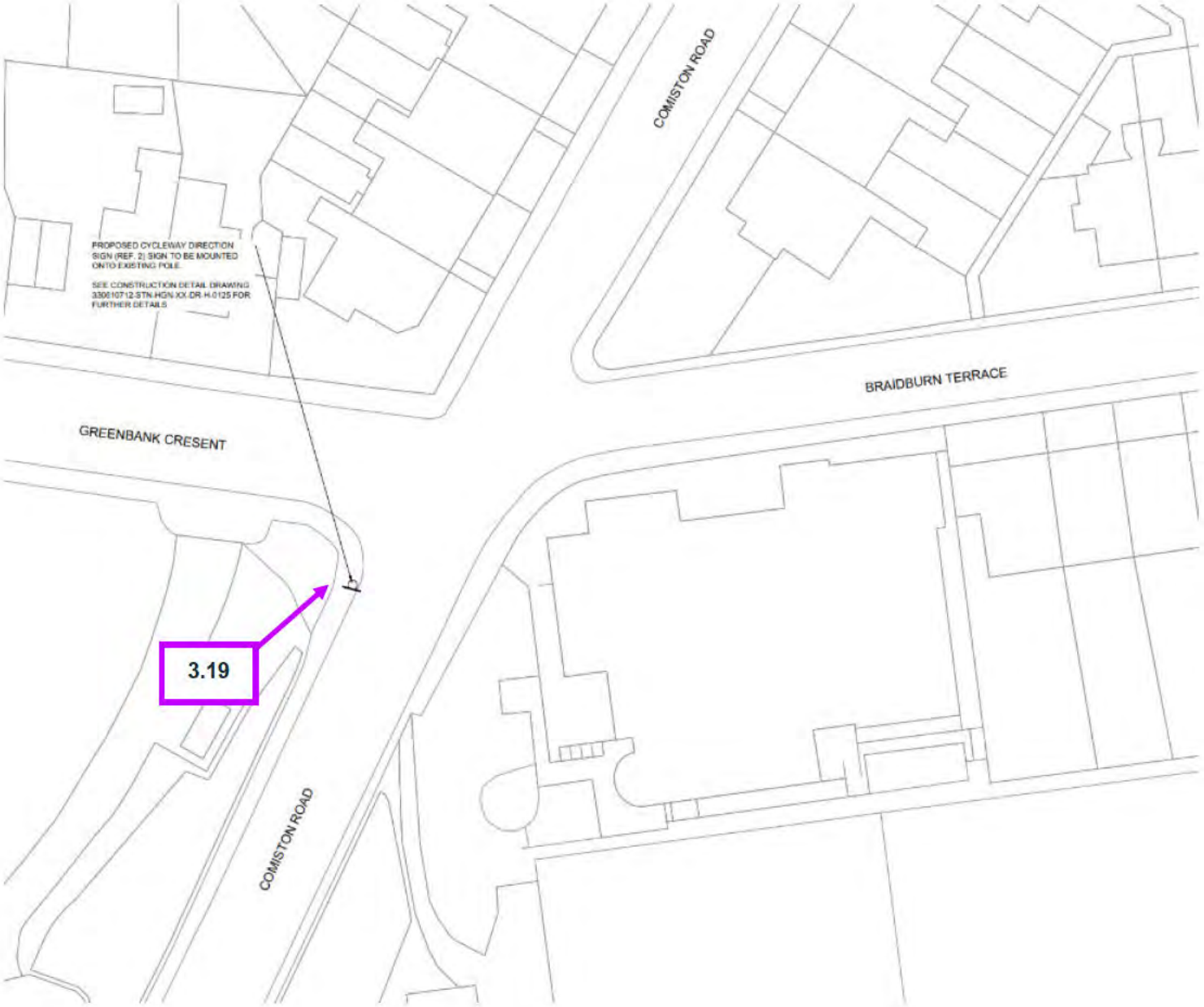
UNDARY OF MANDATORY CYCLE LANE	150mm THICKNESS
RECTIONS IN WHICH PEDAL LES SHOULD TRAVEL ALONG CLE LANE, TRACK OR ROUTE	1215mm LONG, 750mm WIDE
ECTION ARROW FOR CYCLE LANE ROUTE	2000mm LONG, 350mm WIDE 2000mm LONG, 500mm WIDE (RIGHT TURN)
MAXIMUM SPEED LIMIT 20 ROUNDEL	4300mm HEIGHT, 1500mm WIDE, 1600mm TEXT SIZE

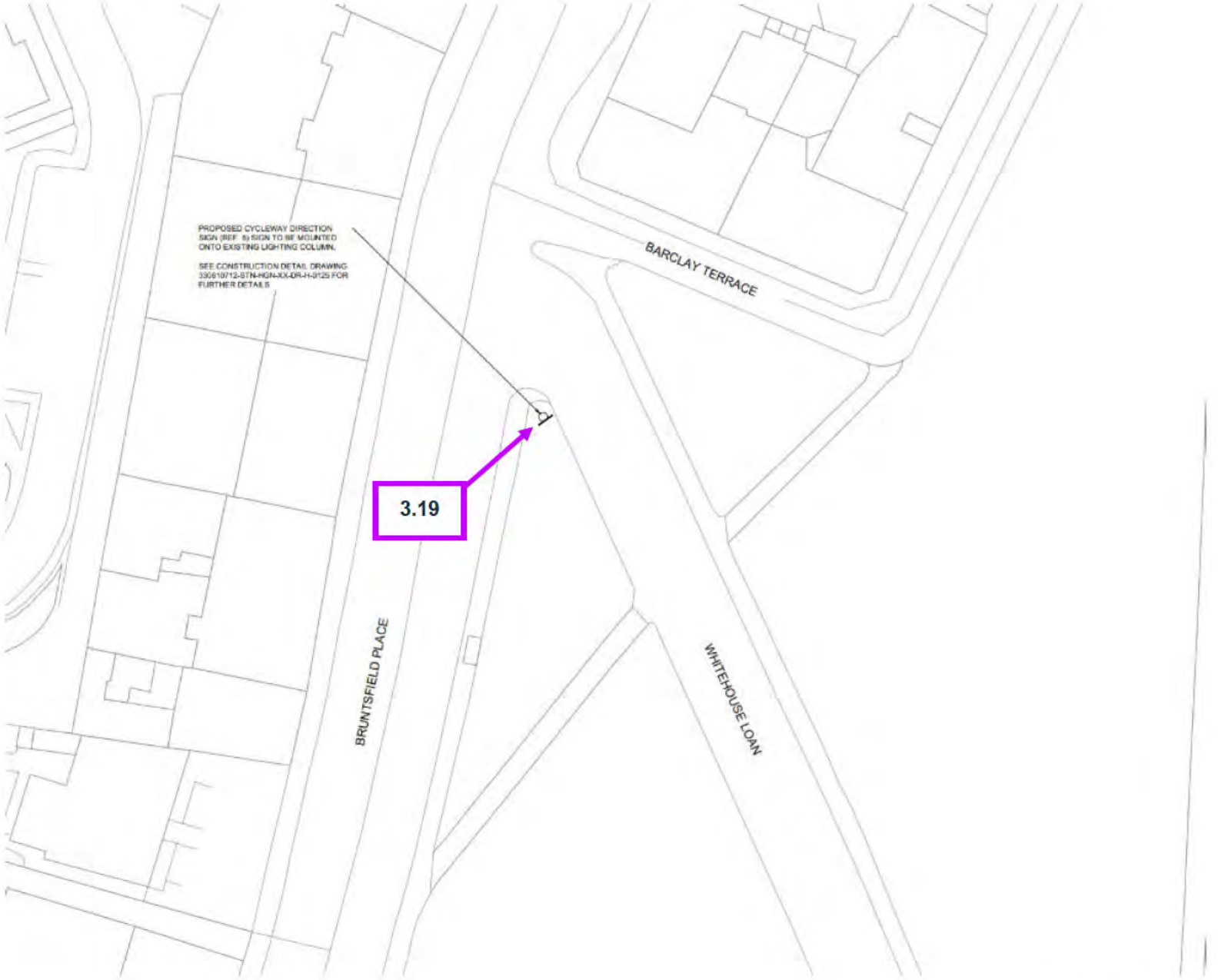

3.13, 3.14, 3.15
3.16, 3.17
Stage 1 Ref 3.11
3.7
BRAID AVENUE
CLUNY DRIVE
SHEET 4 (TOP)
SHEET 4 (BOTTOM)
FOR CONTINUATION SEE SHEET 8
FOR CONTINUATION SEE SHEET 8 (BOTTOM)
FOR CONTINUATION SEE SHEET 10
PROPOSED BOUNDARY OF MANDATORY CYCLE LANE BUFFER MARKING (DIA.1049B) WITH APPROX 4 DEFENDER KERBS LAID IN THE CENTER. SPACING TO BE AGREED ON SITE. SEE DRAWING 330610712-STN-HGN-XX-DR-H-0122 FOR FURTHER DETAILS
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO ALIGN ALONG THE EXISTING KERB LINE
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO TIE INTO EXISTING ROAD MARKING LAYOUT
EXISTING MAXIMUM SPEED LIMIT MARKING TO BE RESTORED (DIA. 1055)
PROPOSED CYCLE LANE THROUGH A JUNCTION MARKING (DIA. 1010) TO ALIGN TO NEW LAYOUT
PROPOSED PARKING BAY (DIA. 1028.6) TO ALIGN TO NEW LAYOUT
PROPOSED DISABLED PARKING BAY (DIA. 1028.4) TO ALIGN TO NEW LAYOUT
EXISTING CENTRE LINE MARKING (DIA. 1004) TO BE RESTORED
EXISTING GIVE WAY TRIANGLE MARKING (DIA. 1023A) TO BE RESTORED
PROPOSED GIVE WAY MARKING (DIA. 1003A) AND EDGE OF CARRIAGEWAY MARKING (DIA. 1009A) TO ALIGN WITH NEW LAYOUT
PROPOSED MAXIMUM SPEED LIMIT MARKING (DIA. 1055)
SCALE 1:250


BRAID AVENUE
HERMITAGE GARDENS
CLUNY DRIVE
CLUNY DRIVE
3.7
EXISTING DOUBLE YELLOW MARKING (DIA. 1018.1) TO BE RESTORED
PROPOSED GIVE WAY MARKING (DIA. 1003A) TO ALIGN WITH NEW LAYOUT
PROPOSED GIVE WAY TRIANGLE MARKING (DIA/1023A) TO ALIGN WITH NEW LAYOUT
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO TIE INTO EXISTING ROAD MARKING LAYOUT
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO ALIGN ALONG THE EXISTING KERB LINE
PROPOSED CENTRE LINE MARKING (DIA. 1004) TO ALIGN WITH NEW LAYOUT
PROPOSED EDGE OF CARRIAGEWAY MARKING (DIA. 1009A) TO ALIGN WITH NEW LAYOUT
PROPOSED EDGE OF CARRIAGEWAY MARKING (DIA. 1009A) TO ALIGN WITH NEW LAYOUT
PROPOSED GIVE WAY MARKING (DIA. 1003A) TO ALIGN WITH NEW LAYOUT
PROPOSED CENTRE LINE MARKING (DIA. 1004) TO ALIGN TO NEW LAYOUT
PROPOSED GIVE WAY TRIANGLE MARKING (DIA/1023A) TO ALIGN WITH NEW LAYOUT
EXISTING DOUBLE YELLOW MARKING (DIA. 1018.1) TO BE RESTORED
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO TIE INTO EXISTING ROAD MARKING LAYOUT
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO ALIGN ALONG THE EXISTING KERB LINE


CLUNY DRIVE
MIDMAR DRIVE
EXISTING PARKING BAYS TO BE RETAINED
PROPOSED DOUBLE YELLOW MARKING (DIA. 1015.1) TO TIE INTO EXISTING ROAD MARKING LAYOUT
PROPOSED DOUBLE YELLOW MARKING (DIA. 1015.1) TO ALIGN TO ALONG THE EXISTING KERB LINE
FOOTWAY PAVEMENT CONSTRUCTION SEE DRAWING
EXISTING CENTRE LINE MARKING (DIA. 1006) TO BE RETAINED
EXISTING EDGE OF CARRIAGEWAY MARKING (DIA. 1003A) TO BE RETAINED
EXISTING LAYOUT TO BE RETAINED
EXISTING SLOW MARKING TO BE RESTORED (DIA. 1024)
FOR CONTINUATION SEE SHEET 13 (BOTTOM)
SHEET 13 (TOP)
SCALE 1:250
3.20
3.20


BRAID CRESENT
BRAID ROAD
3.18
TO TIE INTO EXISTING ROAD MARKING LAYOUT
PROPOSED CYCLE SYMBOL MARKING (DIA. 1057) TO ALIGN TO NEW LAYOUT
PROPOSED ARROW MARKING (DIA.1009) TO ALIGN TO NEW LAYOUT
PROPOSED REFLECTORISED PRIORITY SIGN (DIA 615) FACING NORTH
PROPOSED REFLECTORISED PRIORITY SIGN (DIA 611) FACING SOUTH
TO BE MOUNTED ONTO TEMPORARY POST WITH CONCRETE BLOCK
SEE CONSTRUCTION DETAIL DRAWING 330610712-STN-HGN-XX-DR-H-0124 FOR FURTHER DETAILS
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO TIE INTO EXISTING ROAD MARKING LAYOUT
PROPOSED DOUBLE YELLOW MARKING (DIA. 1018.1) TO ALIGN TO NEW LAYOUT
PROPOSED MAXIMUM SPEED LIMIT MARKING (DIA. 1055)
PROPOSED GIVE WAY MARKING (DIA. 1003A) TO ALIGN WITH NEW LAYOUT
PROPOSED GIVE WAY TRIANGLE (DIA.1023A) TO ALIGN WITH NEW LAYOUT
PROPOSED CENTRE LINE MARKING (DIA. 1004) TO ALIGN WITH NEW LAYOUT
SIZE


COMISTON ROAD
PROPOSED CYCLEWAY DIRECTION SIGN (REF. 2) SIGN TO BE MOUNTED ONTO EXISTING POLE.
SEE CONSTRUCTION DETAIL DRAWING 3300107 12-STN-HGN-XX-DR-H-0125 FOR FURTHER DETAILS
BRAIDBURN TERRACE
GREENBANK CRESENT
3.19
COMISTON ROAD


PROPOSED CYCLEWAY DIRECTION SIGN (REF. 6) SIGN TO BE MOUNTED ONTO EXISTING LIGHTING COLUMN.
SEE CONSTRUCTION DETAIL DRAWING 33061072-STN-HGN-XX-DR-H-9125 FOR FURTHER DETAILS
BARCLAY TERRACE
3.19
BRUNTSFIELD PLACE
WHITEHOUSE LOAN

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Greenbank - Meadows Cycle Route
Stage 2 RSA
July 2025