ATKINS

Member of the SNC-Lavalin Group

Leith Connections

Stage 1 Road Safety Audit

City of Edinburgh Council

July 2021

Notice

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This document has 26 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	FINAL					28/07/21

Client signoff

Client	City of Edinburgh Council
RSA team organisation	Atkins
Report title	Leith Connections Stage 1 Road Safety Audit
Client Reference	RSA-21-032
Atkins reference	RSA008_SCO_S1A

Table of contents

Chapter		Page
1.	**Introduction**	**4**
1.1	Project Details	4
1.2	Terms of reference	4
1.3	RSA team	4
1.4	Site Visit	4
1.5	Scope	5
1.6	Report outline	5
1.7	Notes and clarifications	5
2.	**Items raised at this stage 1 RSA**	**6**
3.	**RSA team statement**	**13**
Appendix A.	**Drawings and Documents**	**15**
A.1.	Drawings	15
A.2.	Documents	17
Appendix B.	**Location of problems**	**18**

1. Introduction

1.1 Project Details

Report Title	Leith Connections Stage 1 Road Safety Audit
Date:	13-07-21
Document Reference and Revision:	RSA008_SCO_S1A
Prepared by:	Atkins
Overseeing Organisation:	City of Edinburgh Council

Atkins has been commissioned by City of Edinburgh Council (CEC), to undertake a Stage 1 Road Safety Audit (RSA) on proposals to develop a segregated cycle route, and low traffic neighbourhood, from the foot of Leith Walk to Ocean Terminal, in Leith, 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, this is the first RSA to be undertaken on the scheme.

1.2 Terms of reference

The RSA has been conducted in accordance with GG 119 Road safety audit, 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 provided by [redacted] of CEC.

1.3 RSA team

The RSA team, approved by [redacted] of CEC, was as follows:

[redacted]

1.4 Site Visit

The RSA comprised a desktop review of the information provided, and a site visit was undertaken during daylight hours on 8th July 2021 between 16:30 and 18:30 with all RSA team members in attendance. During the site visit the road surface was dry, the weather was fine, and traffic was steady with no congestion evident. Pedestrian levels were steady and cycle levels were low.

1.5 Scope

CEC are developing a segregated cycle route from the foot of Leith Walk to Ocean Terminal following an initial active travel appraisal. Alongside this, a low traffic neighbourhood is also being developed which encompasses the route of the proposed cycle track. The proposals include;

- Revised pedestrian environments;
- New / Revised pedestrians crossings;
- Footway buildouts;
- Traffic management alterations; and
- Segregated cycling.

The scheme is located on several roads in Leith, Edinburgh - Great Junction Street, onto Henderson Street, across Sandport Bridge, around Sandport Place, onto Dock Street and across Commercial Street.

1.6 Report outline

Section 2 documents the findings at the current RSA stage. Section 3 comprises the RSA team statement.

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

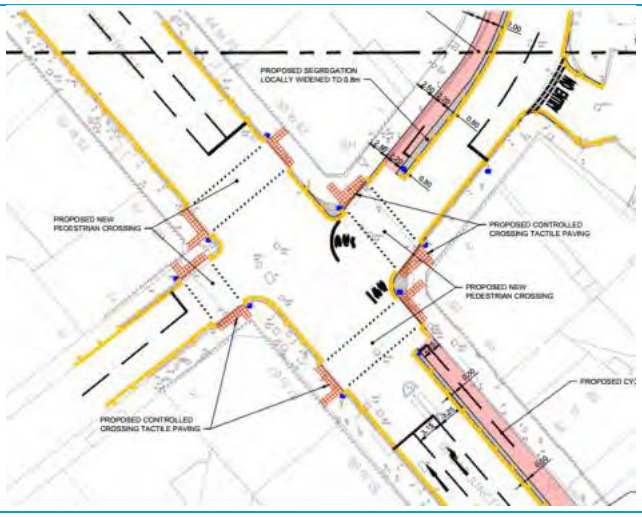
1.7 Notes and clarifications

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.

No previous RSA/RSA response reports were provided as part of the RSA brief.

2. Items raised at this stage 1 RSA

This section details the items raised in this stage 1 RSA.

Problem:	*2.1*	
Location(s):	Great Junction Street / Henderson Street Junction	
Drawing(s):	60592779-SHT-C-DD-0701	
Summary:	Risk of road user collisions at junction due to unclear lane destination information.	

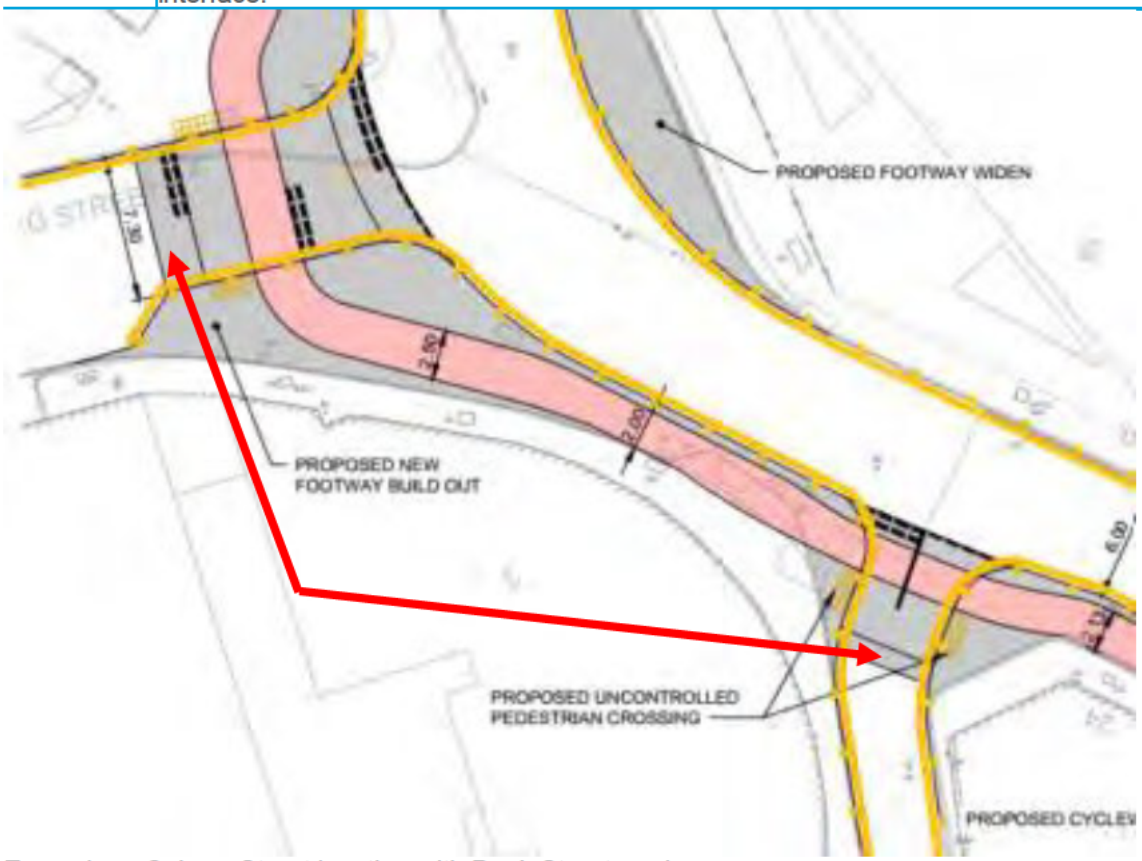
Description:

The scheme proposes that the existing wide single lane south-east of the Great Junction Street / Henderson Street Junction will be replaced with a narrower single lane with a 2.8m wide cycleway and island alongside the nearside kerb. This proposed change will mean that the two lanes on Great Junction Street north-west of the junction will lead into one lane past the junction. The proposals do not show any new road markings or signs at this junction to inform road users of the aforementioned new layout. If road users are not informed of the loss of a lane past the junction and/or which upstream lane is intended for downstream destinations, there is an increased risk of road users making last minute lane changes leading to collisions between road users in and around the junction.

Recommendation:

It is recommended that, advance lane marking destination arrows should be provided on the carriageway to enable road users to safely select, in a timely manner, the appropriate lane for their intended destination. These may also be supported by the provision of suitable destination signs at and approaching the junction.

Problem:	2.2
Location(s):	Various: Giles Street junction with Henderson Street; Car park junction with Sandport Place; Coburg Street junction with Dock Street; Quayside Street junction with Sandport Place; and Car park junction with Dock Street.
Drawing(s):	60592779-SHT-C-DD-0703; 60592779-SHT-C-DD-0704; 60592779-SHT-C-DD-0705; and 60592779-SHT-C-DD-0706.
Summary:	Risk of increased collisions between road users at the carriageway/cycleway interface.



Examples - Coburg Street junction with Dock Street; and
Quayside Street junction with Sandport Place

Description:

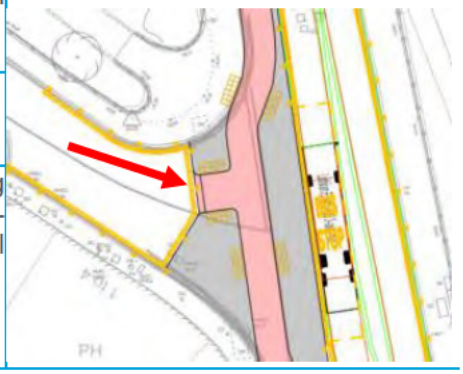
The proposals include new cycleways that will run across existing carriageway junctions. Several of these junctions have limited forward visibility to the proposed cycleway where cyclists may be travelling at speed. In addition, there appear to be no Give Way road markings and/or Warning signs to ensure vehicles/motorcyclists are aware and stop before proceeding across the cycleways.

If vehicles/motorcyclists are not made aware of the presence of cyclists at these junctions there is an increased risk of collisions occurring between these road users at these carriageway/cycleway interfaces.

Recommendation:

It is recommended that at each carriageway/cycleway interface junction should include the following measures:

- Give Way road markings on the carriageway prior to the cycleway, and
- Warning/Give Way signs for carriageway users prior to the cycleway (to warn of the presence of cyclists); and
- Cutting back of vegetation (where present).

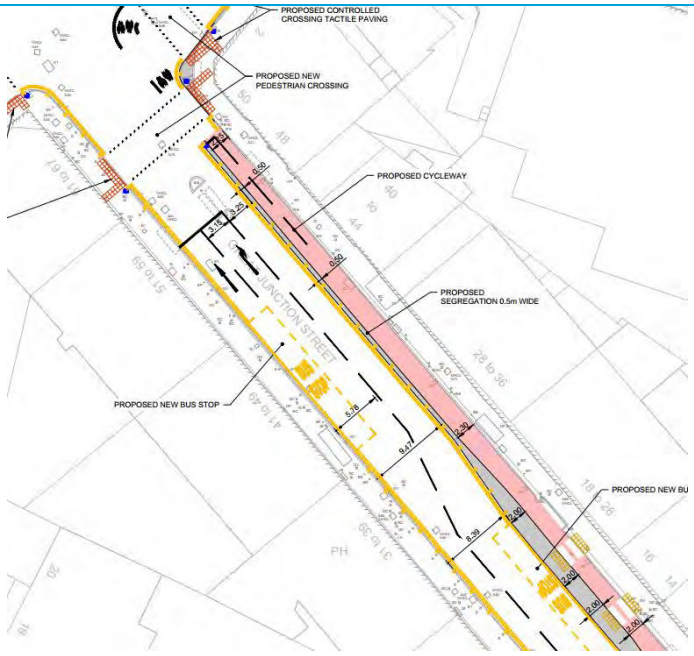
Problem:	2.3	
Location(s):	Various: Yardheads junction with Henderson Street; Parliament Street junction with Henderson Street; and Quayside Street junction with Sandport Place.	Example - Yardheads junction with Henderson Street: 
Drawing(s):	60592779-SHT-C-DD-0702; 60592779-SHT-C-DD-0704; and 60592779-SHT-C-DD-0705.	
Summary:	Risk of road user collisions where existing roads are being truncated by proposed non-vehicular sections, due to lack of physical barriers between the two sections.	

Description:

The proposals include the stopping up/truncation of several roads by proposed, new sections of footway/segregation island/cycleway. In some locations, the proposals show a kerb between the existing roads and the proposed non-vehicular areas and in other locations the proposals appear to show a dropped kerb to allow cyclists to leave the road and join the cycleway. Without a clear, physical separation between the truncated roads and the proposed, new non-vehicular sections there is the potential for vehicles to enter the non-vehicular sections potentially leading to collisions between vehicles and pedestrians and cyclists.

Recommendation:

It is recommended that, the truncated roads should have clearly visible street furniture at their interface with the non-vehicular sections, e.g. bollards, planters, etc. so that pedestrians and cyclists can access/egress but vehicles are physically restricted from doing the same.

Problem:	*2.4*	
Location(s):	Great Junction Street / Henderson Street Junction	
Drawing(s):	60592779-SHT-C-DD-0701	
Summary:	Risk of buses obscuring the traffic signals and vehicles overshooting the stop line and colliding with other road users.	

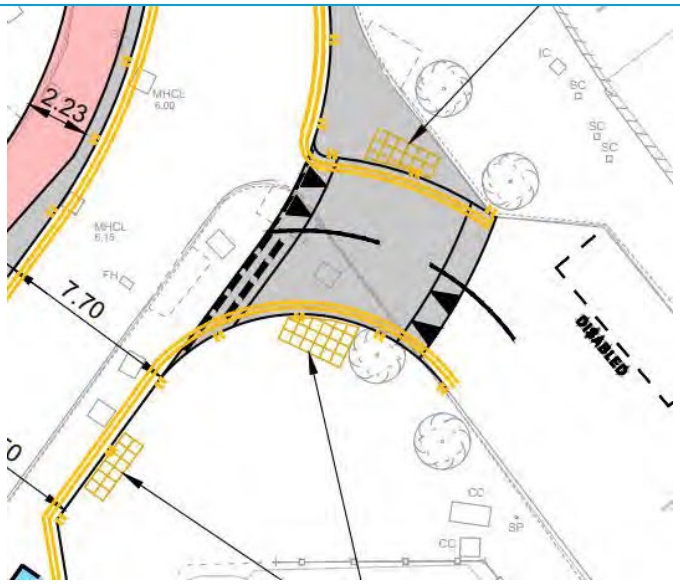
Description:

A bus stop is proposed southeast of the Great Junction Street / Henderson Street Junction. There is a risk that stationary buses will obscure the signal head and potentially result in drivers not seeing a red signal, overshooting the stop line and colliding with other road users.

There is a secondary risk of collisions between buses emerging to turn right onto Henderson Street and vehicles overtaking to go straight ahead.

Recommendation:

It is recommended that stationary buses should not obscure the traffic signals. Buses heading towards Henderson Street should not use the bus stop location as currently presented.

Problem:	*2.5*	
Location(s):	Tolbooth Wynd	
Drawing(s):	60592779-SHT-C-DD-0704	
Summary:	Risk of visual impaired pedestrians (VIPs) missing the tactile paving, entering the carriageway and potentially being hit by a road user.	

Description:

A raised table is provided across the junction, however the tactile paving does not cover the full width of the table. The raised table is likely to be flush with the footway, therefore, if pedestrians (particularly those who are visually-impaired) do not intercept the tactile paving they may venture into the carriageway unintentionally, increasing the risk of collision with road users.

Recommendation:

It is recommended that an upstand is provided at the aforementioned flush sections without tactile paving, or alternatively provide tactile for the full width of the crossing.

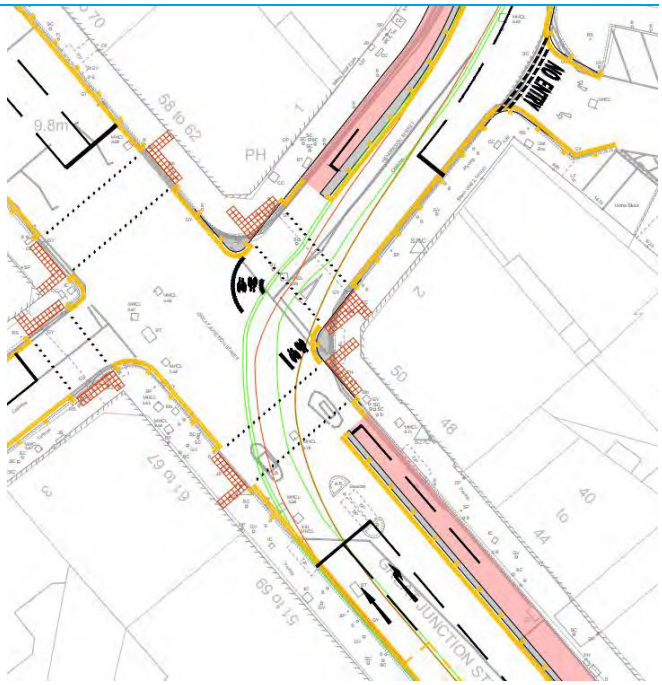
Problem:	*2.6*	
Location(s):	Tolbooth Wynd	
Drawing(s):	60592779-SKE-C-LTN-0004	
Summary:	Risk of turning vehicles colliding with cyclists and / or pedestrians.	

Description:

A swept path analysis indicates a turning vehicle overrunning both the footway and the proposed mass barrier. This could result in collision with pedestrians and / or cyclists.

Recommendation:

It is recommended that all vehicle movements can be safely accommodated within the proposed road environment.

Problem:	*2.7*	
Location(s):	Great Junction Street / Henderson Street Junction	
Drawing(s):	60592779-SHT-C-2601	
Summary:	Risk of turning vehicles colliding with pedestrians / street furniture.	

Description:

A swept path analysis indicates buses turning right from Great Junction Street into Henderson Street will do so from the ahead lane not the right-turn lane. There is a risk that if buses (or similar vehicles) use the right-turn lane to turn right then they will have insufficient space to safely complete their manoeuvre. As a result, the vehicles may mount the footway and collide with street furniture and potentially pedestrians.

Recommendation:

It is recommended that all vehicle movements can be safely accommodated within the proposed road environment.

3. RSA team statement

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

AUDIT TEAM LEADER:

Name: [redacted] BEng MSc CEng FCIHT MSoRSA HE CoC Signed:

Position: [redacted] Date:

Organisation: Atkins

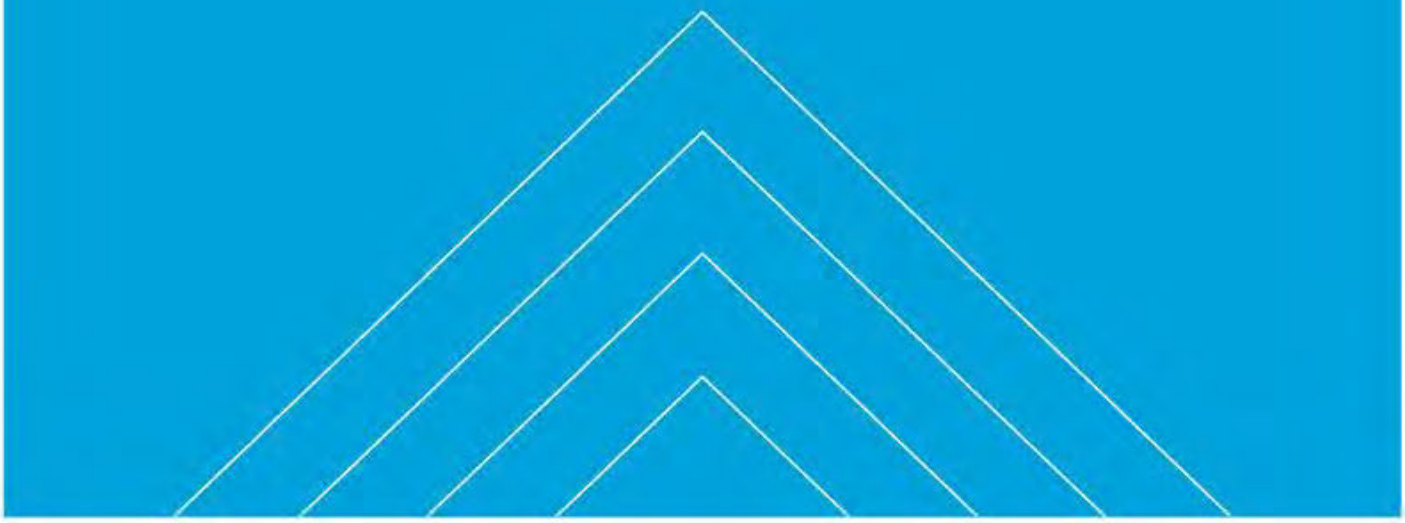
AUDIT TEAM MEMBER:

Name: [redacted] BTech PgDip MCIHT Signed: [redacted]

Position: [redacted] Date: 13 July 2021

Organisation: Atkins

Appendices



Appendix A. Drawings and Documents

A.1. Drawings

Reference	Description	Revision	Date
60592779-SHT-C-DD-0700	Location Plan	A	25/05/21
60592779-SHT-C-DD-0701	General Arrangement 1 of 7	A	25/05/21
60592779-SHT-C-DD-0702	General Arrangement 2 of 7	A	25/05/21
60592779-SHT-C-DD-0703	General Arrangement 3 of 7	A	25/05/21
60592779-SHT-C-DD-0704	General Arrangement 4 of 7	A	25/05/21
60592779-SHT-C-DD-0705	General Arrangement 5 of 7	A	25/05/21
60592779-SHT-C-DD-0706	General Arrangement 6 of 7	A	25/05/21
60592779-SHT-C-DD-0707	General Arrangement 7 of 7	A	25/05/21
60592779-SHT-C-DD-0901	Construction Details	-	25/05/21
60592779-SHT-C-DD-2601	Swept Path Analysis Henderson Street / Great Junction Street	-	25/05/21
60592779-SHT-C-DD-2602	Swept Path Analysis Henderson Street / Yardheads	-	25/05/21
60592779-SHT-C-DD-2603	Swept Path Analysis Henderson Street / Henderson Gardens	-	25/05/21
60592779-SHT-C-DD-2604	Swept Path Analysis Great Junction Street	-	25/05/21
60592779-SHT-C-DD-2605	Swept Path Analysis Sandport Place	-	25/05/21
60592779-SHT-C-DD-2606	Swept Path Analysis Dock Street / Coburg Street	-	25/05/21
60592779-SHT-C-DD-2607	Swept Path Analysis Dock Street / Commercial Street	-	25/05/21
60592779-SHT-C-DD-2608	Swept Path Analysis Dock Street / Coburg Street	-	25/05/21
60592779-SHT-C-DD-2609	Swept Path Analysis Dock Street / Commercial Street	-	25/05/21
60592779-SHT-C-DD-0701	PM Comments - General Arrangement 1 of 7	A	25/05/21
60592779-SHT-C-DD-0702	PM Comments - General Arrangement 2 of 7	A	25/05/21
60592779-SHT-C-DD-0703	PM Comments - General Arrangement 3 of 7	A	25/05/21
60592779-SHT-C-DD-0704	PM Comments - General Arrangement 4 of 7	A	25/05/21
60592779-SHT-C-DD-0705	PM Comments - General Arrangement 5 of 7	A	25/05/21

60592779-SHT-C-DD-0706	PM Comments - General Arrangement 6 of 7	A	25/05/21
60592779-SHT-C-DD-0707	PM Comments - General Arrangement 7 of 7	A	25/05/21
60592779-SHT-C-DD-0901	PM Comments - Construction Details	-	25/05/21
60592779-SHT-C-DD-2601	PM Comments - Swept Path Analysis Henderson Street / Great Junction Street	-	25/05/21
60592779-SHT-C-DD-2602	PM Comments - Swept Path Analysis Henderson Street / Yardheads	-	25/05/21
60592779-SHT-C-DD-2603	PM Comments - Swept Path Analysis Henderson Street / Henderson Gardens	-	25/05/21
60592779-SHT-C-DD-2604	PM Comments - Swept Path Analysis Great Junction Street	-	25/05/21
60592779-SHT-C-DD-2605	PM Comments - Swept Path Analysis Sandport Place	-	25/05/21
60592779-SHT-C-DD-2606	PM Comments - Swept Path Analysis Dock Street / Coburg Street	-	25/05/21
60592779-SHT-C-DD-2607	PM Comments - Swept Path Analysis Dock Street / Commercial Street	-	25/05/21
60592779-SHT-C-DD-2608	PM Comments - Swept Path Analysis Dock Street / Coburg Street	-	25/05/21
60592779-SHT-C-DD-2609	PM Comments - Swept Path Analysis Dock Street / Commercial Street	-	25/05/21
60592779-SKE-C-LTN-0000	Draft Overview Plan	1	27/07/20
60592779-SKE-C-LTN-0001	Coburg Street Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0002	Sandport Bridge Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0003	Shore / Tolbooth Wynd / Shore Place Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0004	Tolbooth Wynd at Queen Ch St Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0005	Burgess Street at Shore Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0006	Shore at Broad Wynd Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0007	Parliament Street Temporary Arrangement	1	27/07/20
60592779-SKE-C-LTN-0008	Yardheads Temporary Arrangement	1	27/07/20

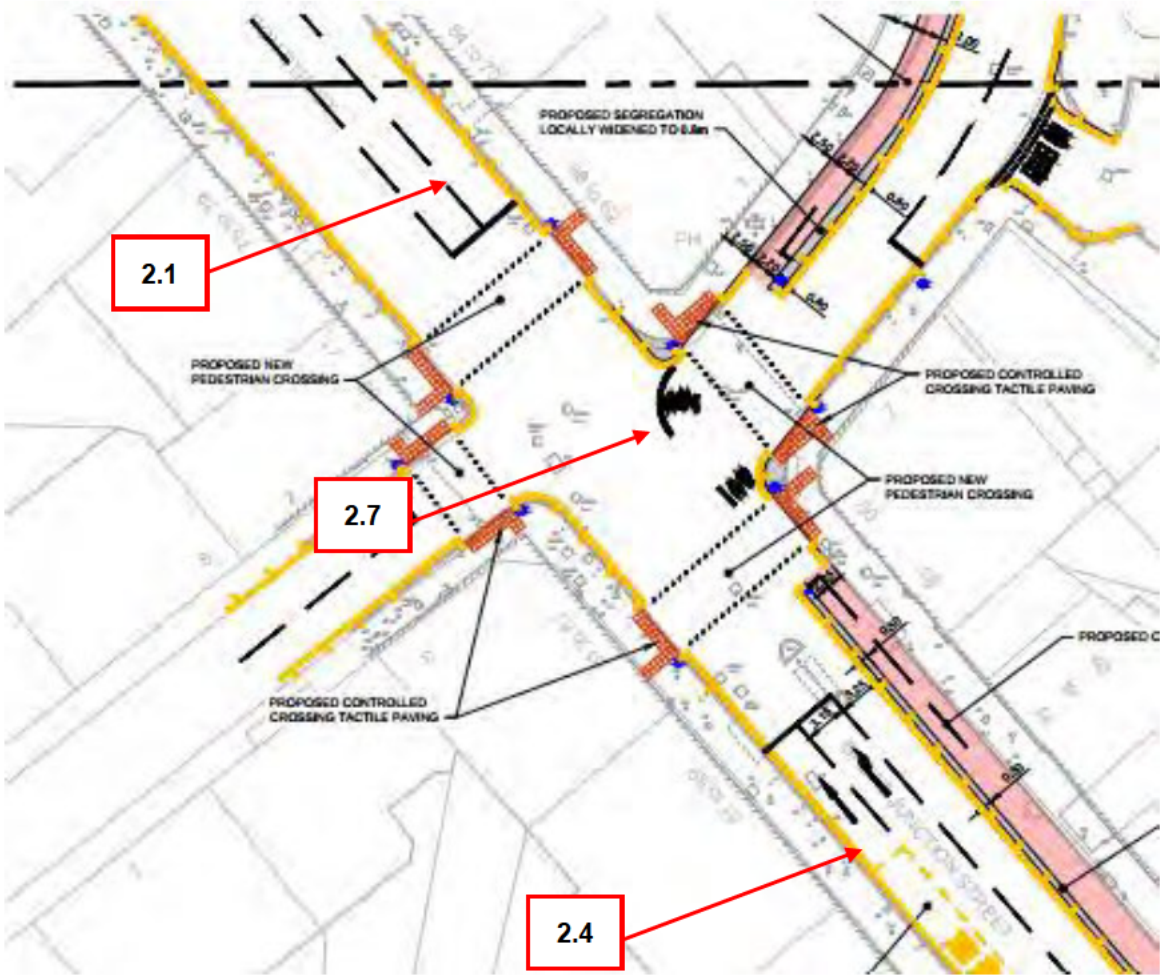
60592779-SKE-C-LTN-0009	John's Place Temporary Arrangement	1	27/07/20

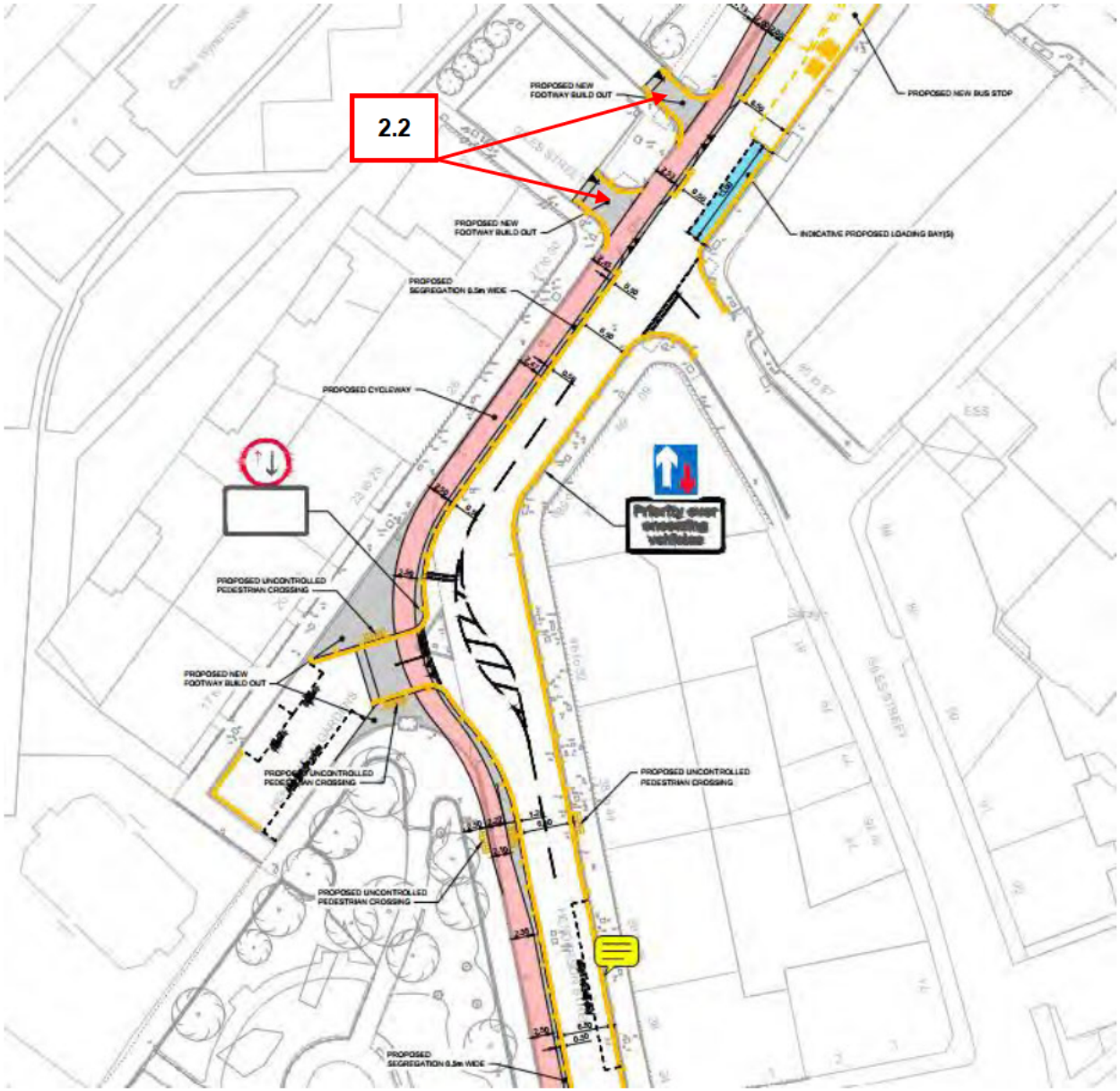
A.2. Documents

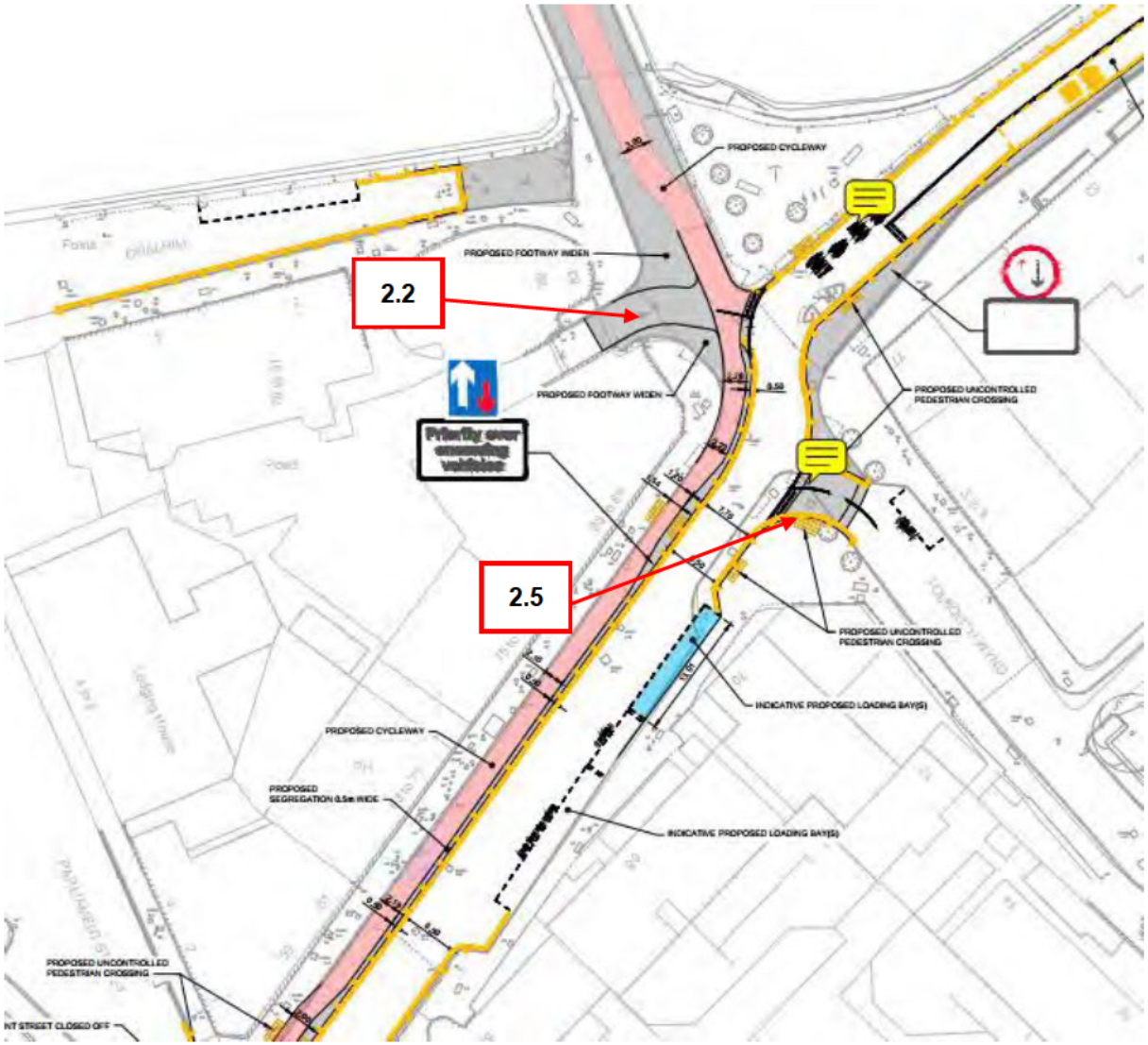
Type	Reference	Revision	Date
RSA Brief	-	-	-

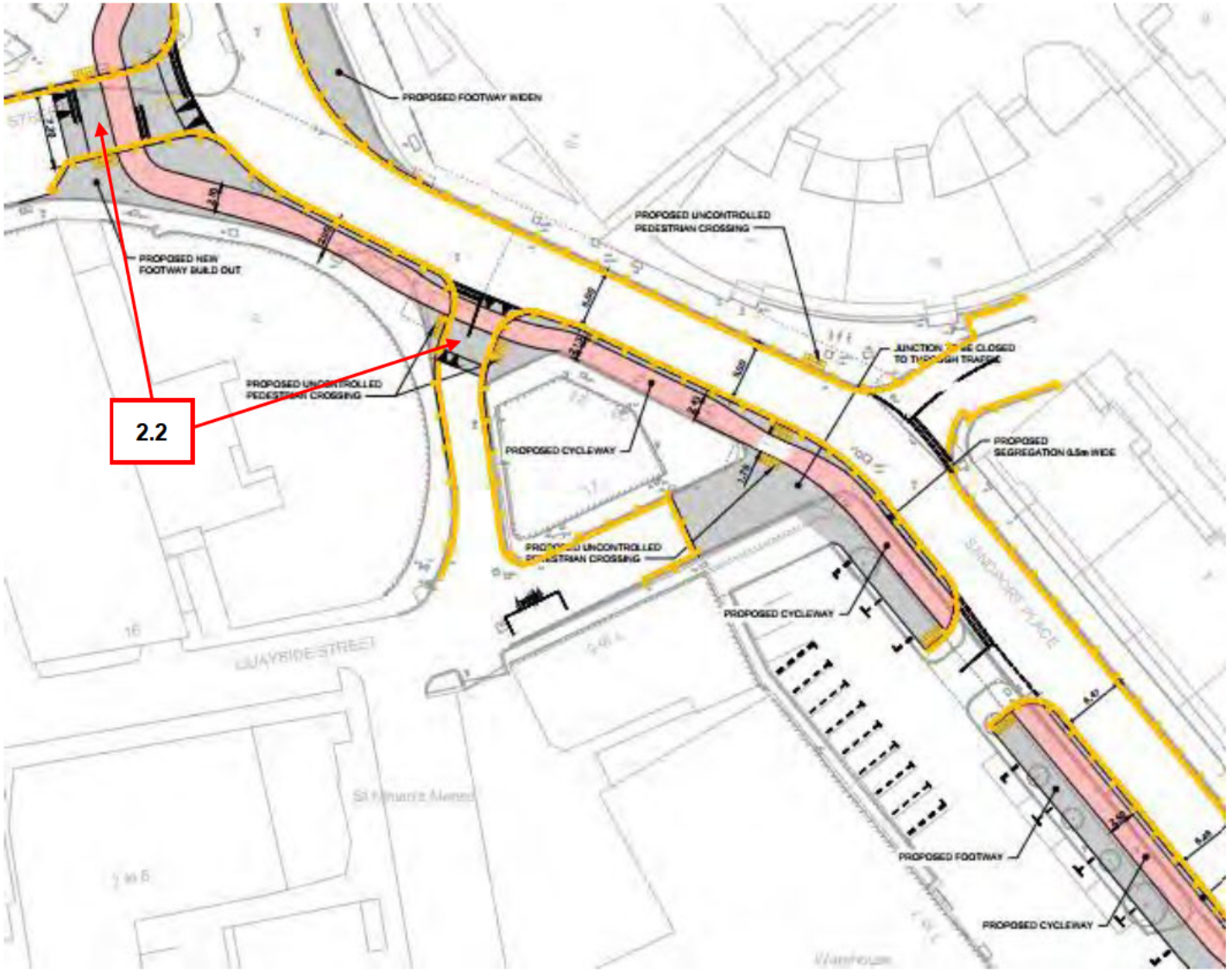
Appendix B. Location of problems

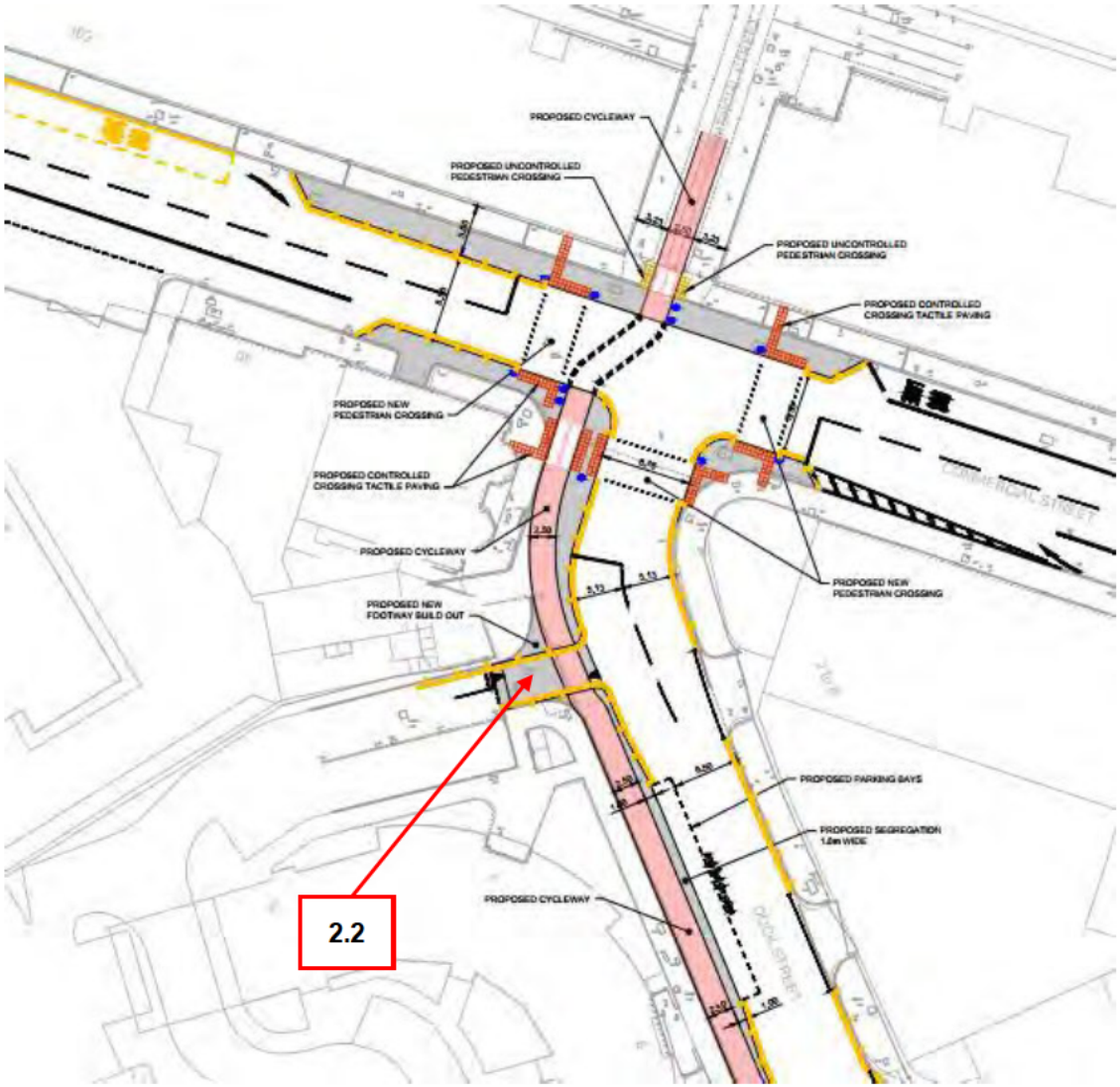
Note: The locations of the problems, and associated recommendations, are approximate and indicative only. Some of the problems identified are shown over several drawings.

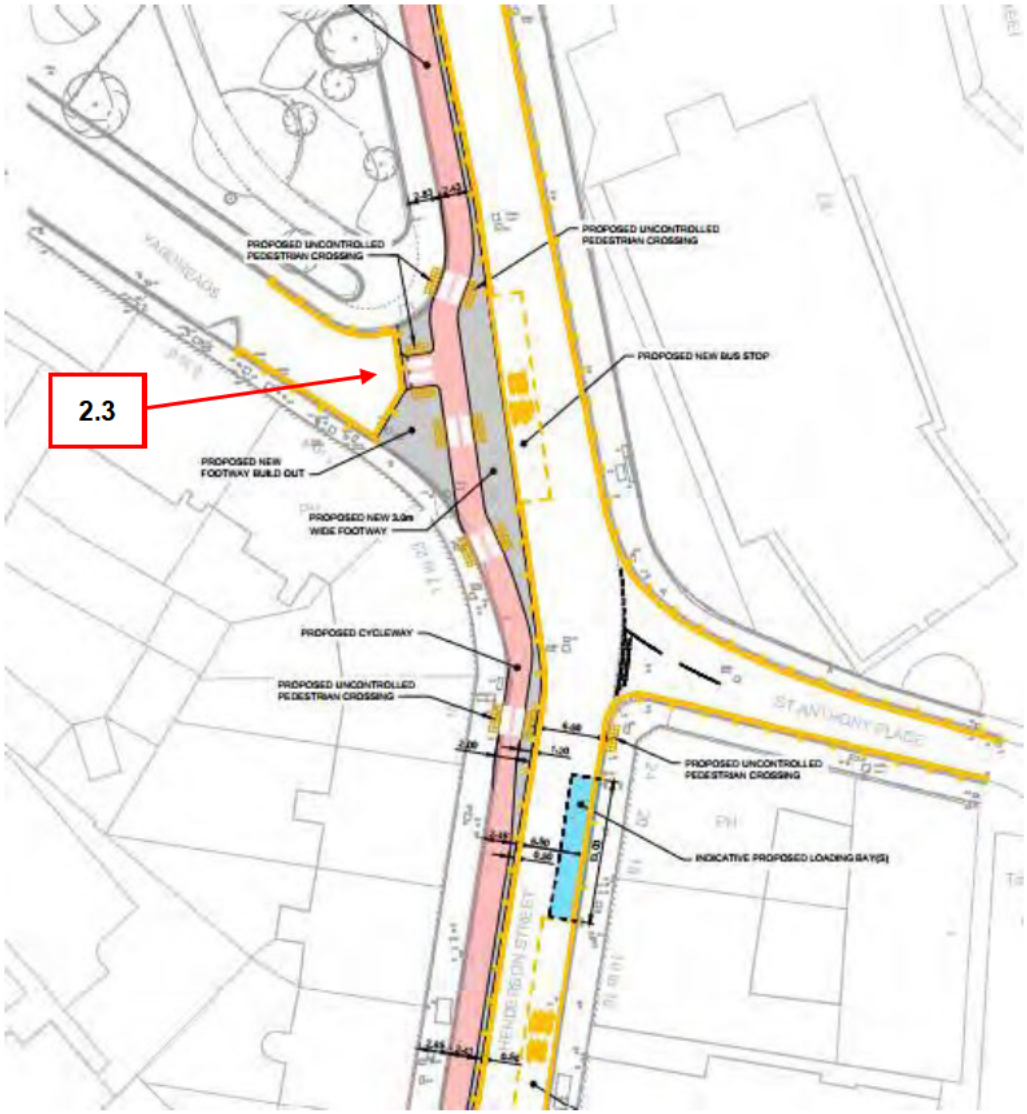


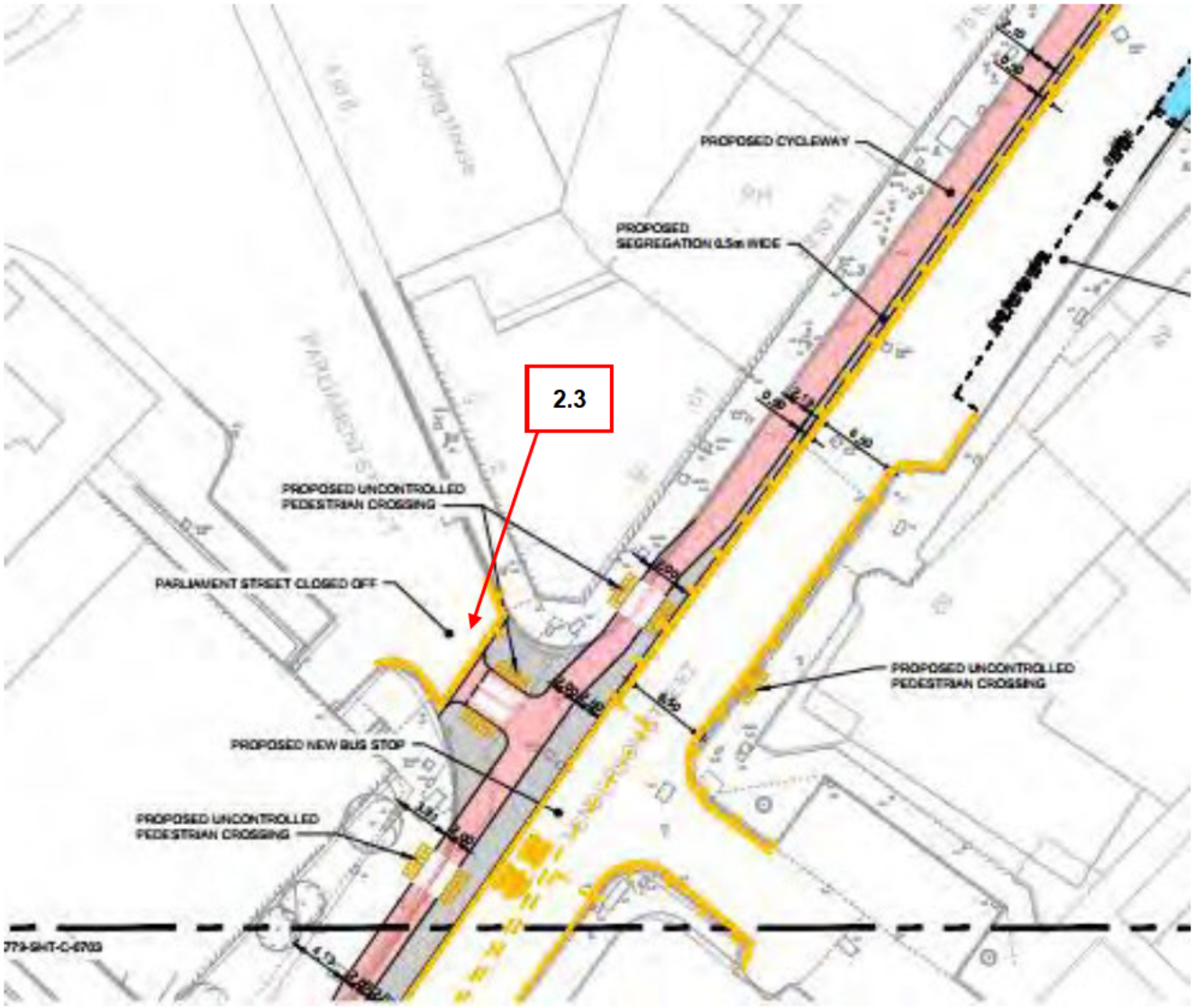

2.2
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED NEW BUS STOP
PROPOSED NEW FOOTWAY BUILD OUT
INDICATIVE PROPOSED LOADING BAY(S)
PROPOSED SEGREGATION 0.5m WIDE
PROPOSED CYCLEWAY
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED SEGREGATION 0.5m WIDE

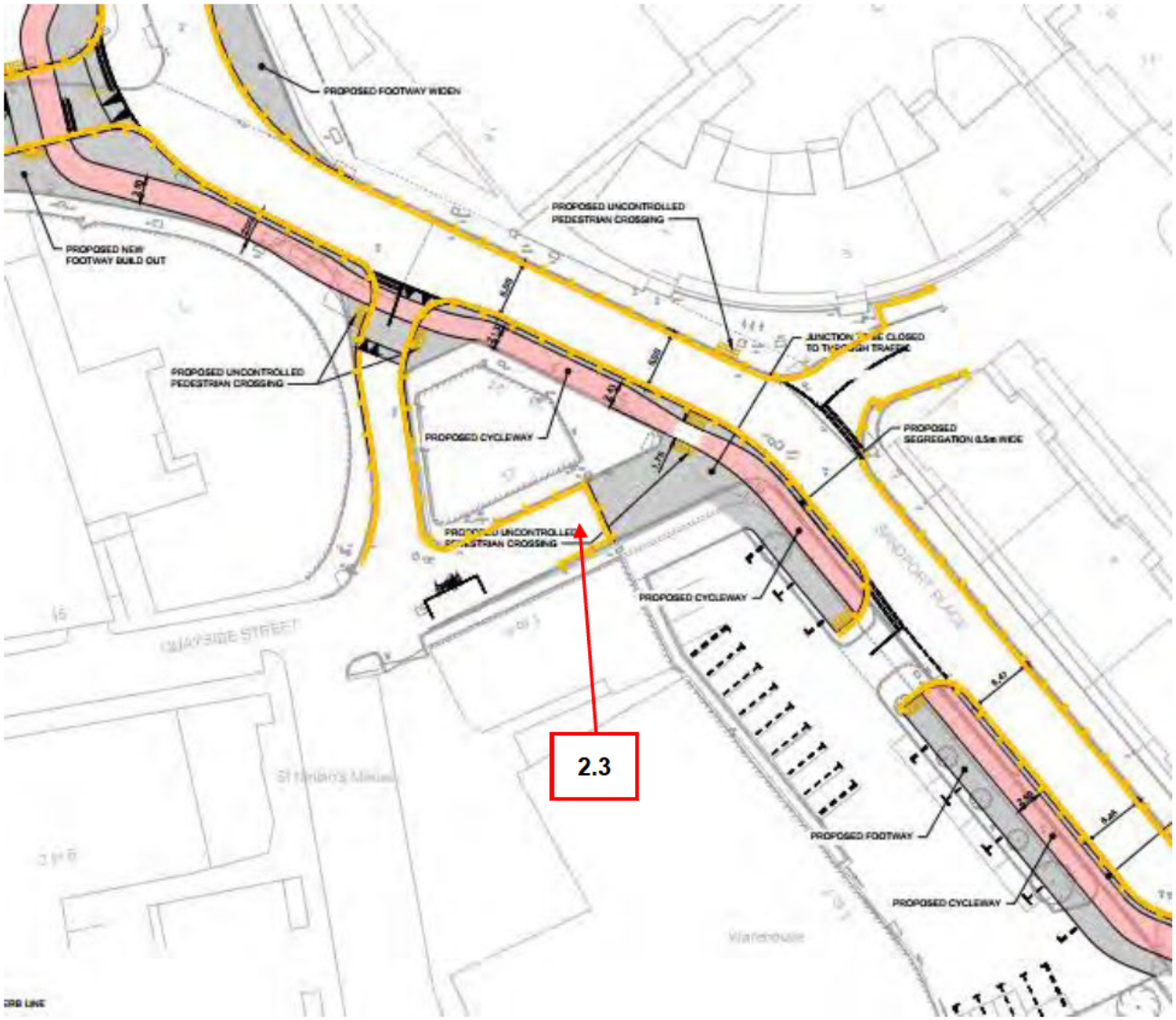

2.2
2.5
PROPOSED CYCLEWAY
PROPOSED FOOTWAY WIDEN
PROPOSED FOOTWAY WIDEN
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
INDICATIVE PROPOSED LOADING BAY(S)
PROPOSED CYCLEWAY
PROPOSED SEGREGATION 0.5m WIDE
INDICATIVE PROPOSED LOADING BAY(S)
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING


PROPOSED FOOTWAY WIDEN
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
2.2
PROPOSED CYCLEWAY
PROPOSED SEGREGATION 0.5m WIDE
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED CYCLEWAY
PROPOSED FOOTWAY
PROPOSED CYCLEWAY


PROPOSED CYCLEWAY
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED CONTROLLED CROSSING TACTILE PAVING
PROPOSED NEW PEDESTRIAN CROSSING
PROPOSED CONTROLLED CROSSING TACTILE PAVING
PROPOSED CYCLEWAY
PROPOSED NEW PEDESTRIAN CROSSING
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED PARKING BAYS
PROPOSED SEGREGATION 1.2m WIDE
PROPOSED CYCLEWAY
2.2


2.3
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED NEW BUS STOP
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED NEW 3.0m WIDE FOOTWAY
PROPOSED CYCLEWAY
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
INDICATIVE PROPOSED LOADING BAY(S)
ST ANTHONY PLACE
HENDERSON STREET


PROPOSED CYCLEWAY
PROPOSED SEGREGATION 0.5m WIDE
2.3
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PARLIAMENT STREET CLOSED OFF
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED NEW BUS STOP
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING


PROPOSED FOOTWAY WIDEN
PROPOSED NEW FOOTWAY BUILD OUT
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED UNCONTROLLED PEDESTRIAN CROSSING
PROPOSED CYCLEWAY
PROPOSED SEGREGATION 0.5m WIDE
PROPOSED CYCLEWAY
PROPOSED FOOTWAY
PROPOSED CYCLEWAY
2.3

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