



Combined Stage 1-2 Road Safety Audit

Knowsley Business Park

Proposed S278 Highway Works

Date: 15/05/2025

Report produced for: Caddick Developments Ltd

Report requested by: Burrow Graham Ltd

On behalf of: Knowsley Council

Report prepared by: Elaine Bingham, Road Safety Consulting Ltd

Reference: RSC/EB/MC/24128

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1. Introduction

- 1.1. This report results from a Combined Stage 1-2 Road Safety Audit carried out on the proposal S278 Highway Works associated with the Knowsley Business Park on Ormskirk Road in Knowsley. The Audit was carried out during May 2025.
- 1.2. This Road Safety Audit was produced for (client): Caddick Developments Ltd, on behalf of (overseeing organisation): Knowsley Council. The Design Organisation is Burrow Graham Ltd.
- 1.3. The Audit Team membership was as follows:

Audit Team Leader
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
National Highways Certificate of Competence (Road Safety Audit)
Road Safety Consulting Ltd

Audit Team Member
Matt Cleggett
B Eng (Hons), CFILT, MCIHT
Consultant working on behalf of Road Safety Consulting Ltd
- 1.4. The audit took place at the offices of Road Safety Consulting Ltd between 12th and 15th May 2025. The audit was undertaken in accordance with the Audit Brief supplied by Burrow Graham Ltd. The Audit Brief and Audit Team was approved by Knowsley Council.
- 1.5. The report has been prepared with reference to the Design Manual for Roads and Bridges (DMRB) GG 119 Rev 2.0.1, with exceptions set out in paragraph 2.4.
- 1.6. The Audit Team visited the site together on the 12th May 2025 between 12 noon and 12.30pm. Weather at the time of the audit was sunny. The road surface was dry. Traffic flows were low. A few cyclist were observed. No pedestrians were observed.
- 1.7. The audit comprised an examination of the information provided by the Design Organisation which are listed in Appendix A.
- 1.8. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.
- 1.9. The Road Safety Audit is not a technical check that the design conforms to Standards and/or best practice guidance. Design Organisations are responsible for ensuring that their designs have been subjected to the appropriate design reviews (including, where applicable, Non-Motorised User (NMU) Audits) prior to Road Safety Audit.
- 1.10. All comments and recommendations are referenced to the design drawing and the locations have been indicated on plans in Appendix B.

2. Items Considered

2.1. Scheme Proposals

- 2.1.1.** The proposed Knowsley Business Park development consists of the erection of 3 no. commercial units (use class B2 or B8).
- 2.1.2.** The S278 highway works include a ghost island junction with nearside auxiliary lane for left turners giving way to right turners into the development site, shared cycleway and bus stop works on Ormskirk Road as shown on drawing 22075-BGL-XX-XX-DR-C-00300 P6.

2.2. Information Provided to the Audit Team

- 2.2.1.** Information that has been provided to the Audit Team, for the purpose of this audit, is as outlined within Appendix A of this report.

2.3. Departures from Standards (Design)

- 2.3.1.** The Audit Team have not been advised of any design departures.

2.4. Departures from Standards (Road Safety Audit)

- 2.4.1.** This Road Safety Audit has been produced with reference to DMRB – GG 119 – Road Safety Audit with the following exceptions.
- Section 4 of this report provides additional Observations, that are outside of the scope of GG119 (which specifically excludes the provision of additional comments within Road Safety Audit report). These comments, whilst considered outside the scope of the audit, have been produced to assist the designer in providing a safe design where any safety comment may be conditional on receiving more detailed information.

2.5. Items Raised at Previous Road Safety Audits

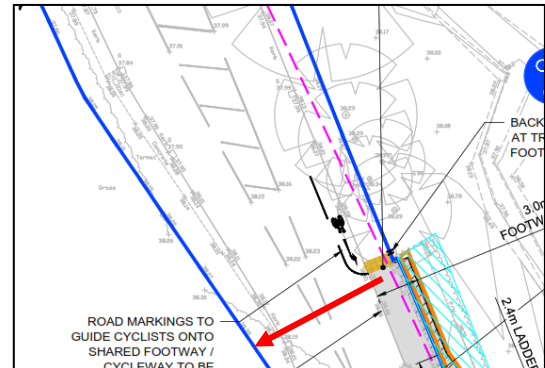
- 2.5.1.** The Audit Team is aware that a previous informal Stage 1/2 RSA was carried out in December 2022 during the earlier stages of the design. The Audit was carried out by Matt Chamberlain Associates Ltd (reference MCA.BG.014 RSA 1 and 2 S278 Works Knowsley Business Park v1.0 Final).
- 2.5.2.** The Designer's Response dated 06/01/2023 (ref 22075-BGL-XX-XX-TN-C-00001 V1) has been provided although no agreed actions with Knowsley Council has been provided. Where the RSA Team consider the problems previously raised remain they are repeated in Section 3.

3. Items Raised by this Combined Stage 1-2 Road Safety Audit

3.1. Problem

Location: Ormskirk Road

Summary: Lack of suitable linkage to surrounding shared footway/cycleway facilities may pose as a hazard for cyclists leading to rider injury.



In the vicinity of the development site, there is a dual use footway/cycleway along the southern side of the A580 with a toucan crossing facility across Ormskirk Road arm of the traffic signal junction. There is also a dual use footway/cycleway route along the northern side of the A580 into Coopers Lane.

The proposal includes for a section of shared footway/cycleway along the eastern side of Ormskirk Road, however the northern end of the proposed route does not tie in with the existing dual use footway/cycleway route along the A580 leaving a missing section of approximately 80m and the opportunity to use the controlled crossing facilities at the traffic signal junction.

The Audit Brief includes the following strategic decision that it is understood to have been accepted by Knowsley Council.

'The proposed cycleway cannot be extended north to facilitate a connection to the facility at the existing A580 East Lancs Road & A5208 Coopers Lane signal controlled junction. To sufficiently widen the existing footway to form a shared pedestrian/cycleway will require land outside of the developer's ownership, land that was also outside of the planning application boundary. The planning application made clear that this connection would not be delivered. Given the application was approved, there is no planning need for this connection. The drawings submitted for safety audit follow the principles approved in the planning application'.

However, the RSA Team are concerned that the proposed dual use route has been designed for cyclists travelling southbound only and has not taken into consideration how cyclists travelling northbound will return back to the carriageway and the ability to join the existing dual use facility on the A580 if they wish to do so. The lack of suitable transition back to the carriageway may lead to cyclists being hit by vehicles. Alternatively, cyclists may continue on the footway. This may lead to pedestrian to cyclist collisions leading to pedestrian injury.

Recommendation:

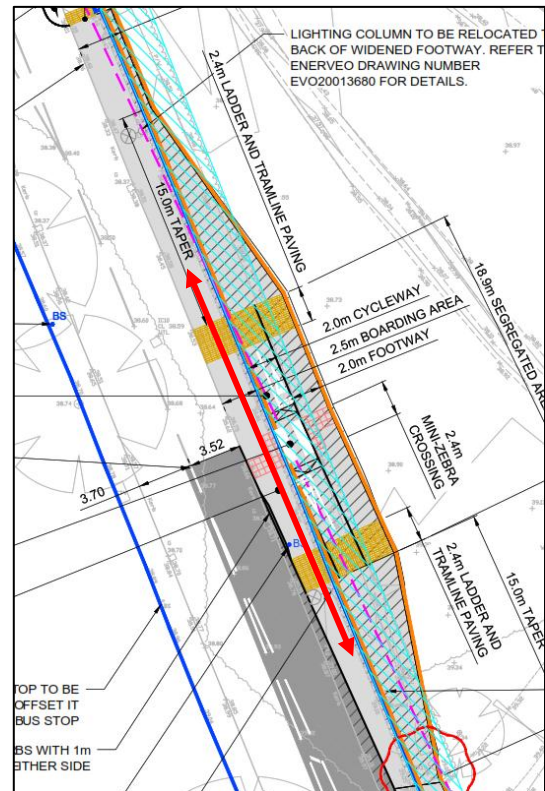
It is recommended that northbound cyclists are provided with an appropriate facility to allow them to safely return to the carriageway. The cycle dismount sign should be replaced with 'cyclists rejoin carriageway' as recommended in LTN 1/20.

However, it may be appropriate to cutback the vegetation encroaching at the back of the footway and widen the existing footway within the available highway boundary to link the existing and proposed route, albeit a substandard width to minimise rider conflicts with vehicles, and / or pedestrians. It is noted that the shared use route around the radii of the traffic signal junction is less than the minimum recommended and is also further narrowed by the pedestrian guard railing.

3.2. Problem

Location: Southbound bus stop

Summary: Potential conflicts between cyclists and users at the bus stop



At the bus boarder by-pass, due to the route either side of the bus boarder being shared and there being no difference in surfacing colour for the cycle section, cyclists are likely to take the direct route following the kerb edge instead of using the short section of segregated route behind the waiting area, particularly if the bus stop is not well used.

Recommendation:

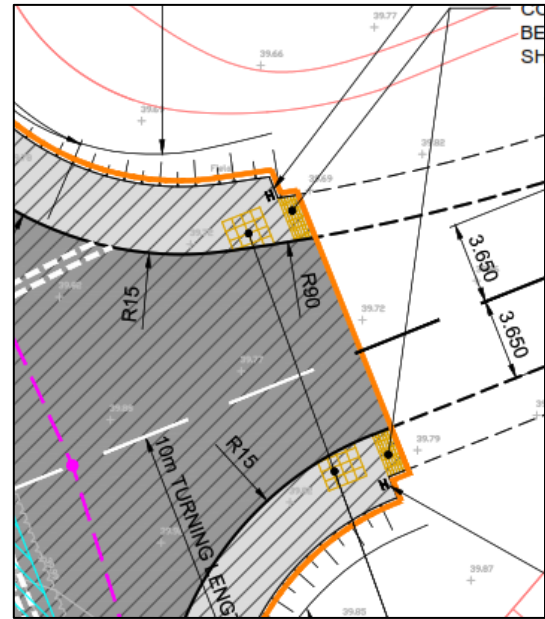
It is recommended that if a bus boarder bypass is required, the cycle lane section should be of a contrasting colour to the footway and waiting area, and cycle symbols added to guide cyclists to follow the route behind the bus stop.

It is acknowledged that recent research carried out by TfL indicates that there is a low risk of conflicts between bus passengers and cyclists at bus boarders.

3.3. Problem

Location: Uncontrolled crossing across site access

Summary: Narrow crossing point potential conflicts between users leading to injury



The proposed width of 1.6m for the shared use crossing facilities at the access is narrower than the recommended latest design advice. Insufficient width to allow users to pass one another at the crossing may lead to pedestrian to cyclist or cyclists to cyclists collisions.

Recommendation:

It is recommended that the width of the crossing point is increased to 3m.

3.4. Problem

Location: Ormskirk Road

Summary: Drop at back of shared use route may be a potential slip/fall hazard for pedestrians or cyclists

At the back of some of the sections of the shared use route there is a 1 in 3 slope. The lack of a flat buffer between the shared use route and the slope may lead to slip and fall type injuries, particularly during hours of darkness if users are unable to identify the slope.

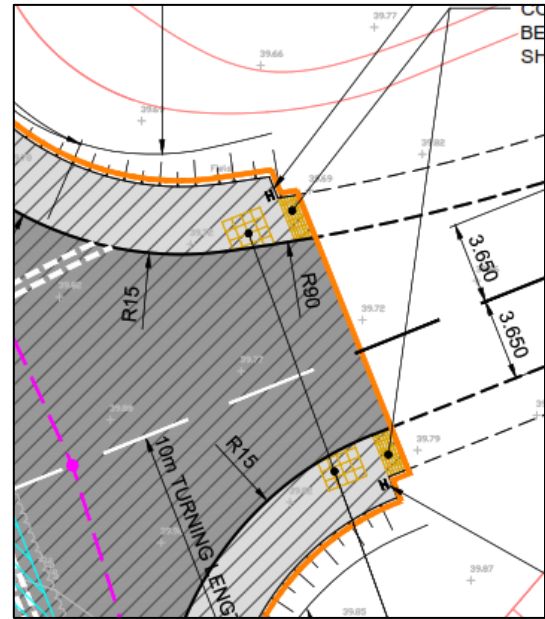
Recommendation:

It is recommended that a flat verge area should be provided between the back of the shared use route and the start of the slope: a minimum of 0.5m should be provided or measures installed to identify the back edge of the shared use route, such as a suitable fence.

3.5. Problem

Location: Site access

Summary: Risk of cyclists being hit and injured by vehicles.



The shared footway/cycleway does not extend into the development with the facility starting/terminating at the junction.

Cyclists who rejoin the carriageway at the crossing point may be vulnerable to being hit by vehicles turning into the junction. In particular, by left turning vehicles whose drivers are likely to be concentrating on looking to the right towards vehicles turning off Ormskirk Road as they need to give way to them.

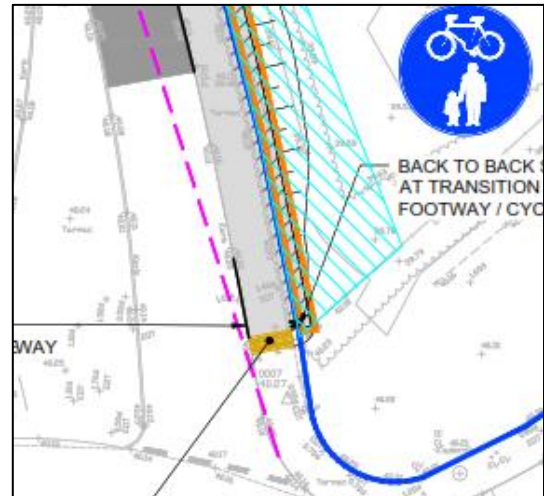
The start of the shared facility for cyclists travelling along the development access road towards Ormskirk Road may not be easily identifiable and they may end up missing the start of the facility and have to negotiate the junction instead with the potential of being hit and injured by passing vehicles.

Recommendation:

It is recommended that the shared route on both sides of the development access road is extended further into the development away from the potential conflict with manoeuvring vehicles at the junction. Appropriately positioned lengths of dropped kerbs should be provided to allow cyclists to rejoin/leave the carriageway. The start/end of the route should be clearly identifiable. This may include the use of cycle markings (cycle logos, give way lines and arrows). The cycle dismount sign should be replaced with 'cyclists rejoin carriageway' as recommended in LTN 1/20.

3.6. Problem

- Location: Southern termination of shared route
- Summary: Risk of cyclists being hit and injured by vehicles.



The width of the approach to the roundabout is a wide single lane and cyclists rejoining the carriageway at this location may be vulnerable to being struck by overtaking vehicles. Cyclists may also find it difficult to position themselves correctly at the roundabout in relation to which exit they are travelling to, particularly during peak periods or when vehicles are queuing back from the junction.

Recommendation:

It is recommended that the end of the route is relocated further north to enable cyclists to position themselves in the correct position prior to the junction. It may also be appropriate to highlight to drivers that cyclists are returning to the carriageway by providing a short length of on-carriageway cycle lane markings.

The cycle dismount sign should be replaced with 'cyclists rejoin carriageway' as recommended in LTN 1/20.

3.7. Problem

- Location: Ormskirk Road roundabout
- Summary: Risk of cyclists being hit and injured by vehicles.

There is no connectivity for cyclists travelling northbound along Ormskirk Road from the roundabout to access the shared use facility on the eastern side. The lack of connectivity may lead to cyclists remaining on the carriageway with the risk of being hit and injured by vehicles overtaking them. Cyclists turning right into the development may be particularly vulnerable when turning right into the access.

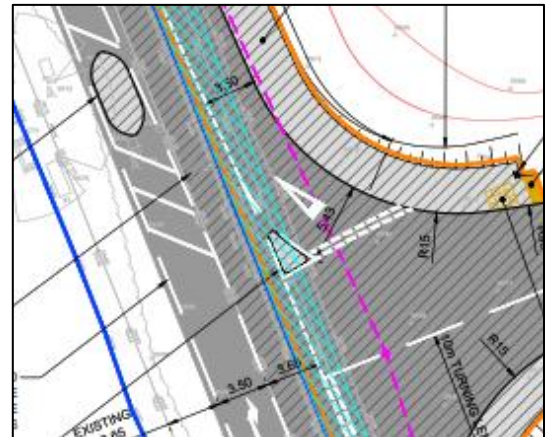
Recommendation:

It is recommended that a suitable location to enable northbound cyclists to join the shared use route should be provided. It may be appropriate to provide a short length of shared use route on the western side and increase the size of the proposed pedestrian refuge island so that it is suitable for cyclists to use.

3.8. Problem

Location: Site Access

Summary: Drivers striking kerb lines of splitter island may lead to loss of control type collisions



The splitter island segregating the through lane and the auxiliary lane is located close to the edge of the running lane and is likely to be at risk of being hit by passing vehicles. This may lead to kerb strikes and tyre damage as a result, which may lead to tyre blow-outs and loss of control type collisions elsewhere on the highway network.

Recommendation:

It is recommended that the splitter island should be setback a minimum of 1m from the edge of the running lane.

3.9. Problem

Location: Site Access

Summary: Cycle to vehicle collisions, involving vehicle overtaking manoeuvres

The traffic lane widths through the ghost island junction, passed the pedestrian refuge island and traffic island are 3.65m wide. Gaps of 3.1 to 3.9 metres are the least satisfactory from a cyclist's perspective, as a driver may perceive that the carriageway is wide enough to overtake a cyclist through the refuge/traffic island, which may result in a cyclist being squeezed and hit.

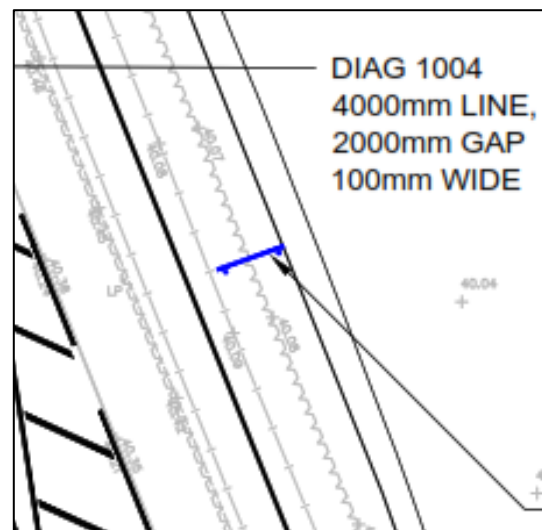
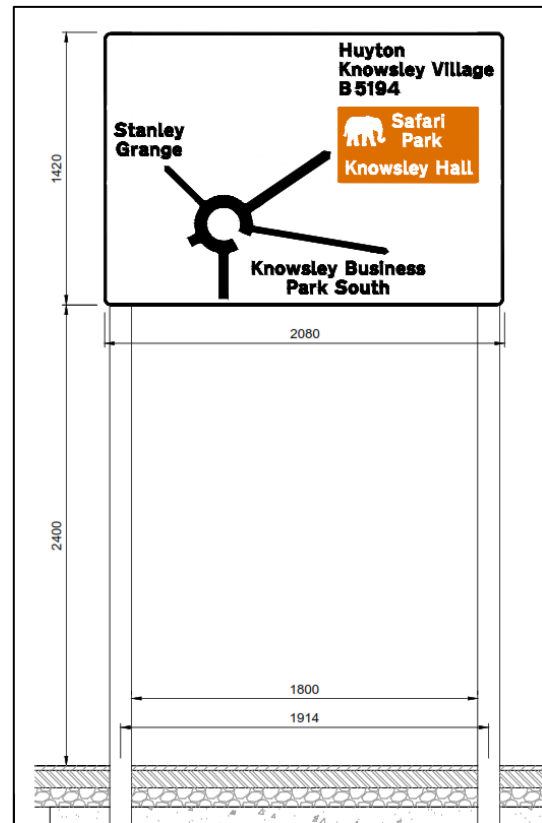
Recommendation:

It is recommended that lane widths between 3.1m and 3.9m should be avoided, to safeguard cyclists at gaps. It is acknowledged that swept paths may require that the traffic lanes through the junction are wider than desirable for cycle safety, therefore it may be appropriate to visually narrow the lane widths by widening hatched markings.

3.10. Problem

Location: Relocated directional sign

Summary: Sign posts - obstruction and a potential hazard for cyclists and pedestrians.



The spacing between the posts for the relocated directional sign will reduce the effective width of the shared use width and may pose as a hazard for users, particularly during hours of darkness.

Recommendation:

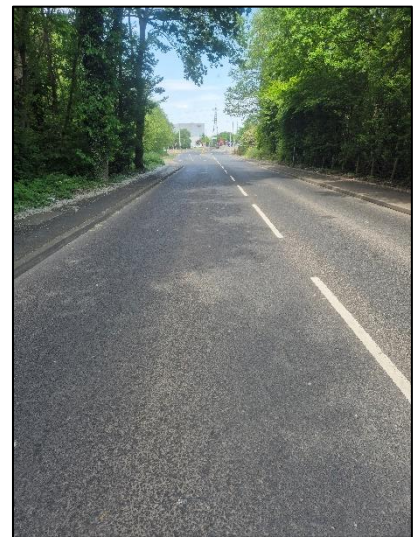
It is recommended that the sign assembly is redesigned to prevent the sign posts obstructing the route. It is also recommended that reflective colour contrasting bands are added to the post if they are located within the route.

4. Issues identified during the Combined Stage 1-2 road safety audit that are outside the terms of reference

Safety issues identified during the audit and site inspection that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Overseeing Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrants that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.1. Issue

Location: Northbound approach to A580 traffic signal junction



The carriageway markings shown on the drawing for the development of the right turn lane at the traffic signal junction is different to that on site. It is recommended that the road markings on the drawing match those currently on site.

4.2. Issue

Location: Ormskirk Road

LTN 1/20 states the use of the 'Cyclists Dismount' signs should be avoided and the alternative permitted variant 'Cyclists Rejoin Carriageway' may be more appropriate in this circumstance.

4.3. Existing Issue

Location: Ormskirk Road

There are no repeater signs to indicate that Ormskirk Road is subject to a 50 mph limit. It is recommended that if the 50mph speed limit is to remain, appropriately positioned '50' repeaters are installed.

4.4. Existing Issue

Location: Knowsley Lane/Ormskirk Road
roundabout, Knowsley Road
(E)



At the roundabout junction, there are no pedestrian dropped kerb crossing facilities on any of the arms of the roundabout. There is a single dropped kerb on Ormskirk Road (SE) and on Knowsley Lane (E) but there is no receiving dropped kerb. It is recommended that suitable dropped kerb pedestrian crossings are provided at the junction on likely pedestrian desire lines.

4.5. Existing Issue

Location: Northbound approach to A580
traffic signal junction

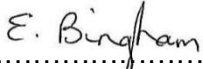
On the Ormskirk Road approach to the traffic signals there is no dropped kerb provision to allow cyclists to access the existing shared use route along the A580 prior to the left turn slip. Cyclists wishing to use the route would need to cross the left turn slip and use the dropped kerbs at the crossing point. Cyclists may be vulnerable to being hit by vehicles turning left. It is recommended that a suitable length of dropped kerbs are provided before the left turn slip to allow cyclists to leave the carriageway to join the existing shared use route, if the recommendation for Problem 3.7 is not actioned.

5. Audit Team Statement

We certify that this Combined Stage 1-2 Road Safety Audit has been carried out in accordance with GG 119 Rev 2.0.1.

Audit Team Leader

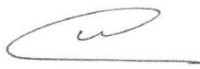
Elaine Bingham
B Eng (Hons), MCIHT, MSoRSA
National Highways Certificate of Competence (Road Safety Audit)
Road Safety Consulting Ltd.

Signed:  Dated 15th May 2025

Director of Road Safety Consulting Ltd

Audit Team Member

Matt Cleggett
B Eng (Hons), CFILT, MCIHT

Signed:  Dated 14th May 2025

Consultant working on behalf of Road Safety Consulting Ltd

Road Safety Consulting Ltd
4 Paramore Close
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APPENDIX A: Information Provided**List of Information Provided**

Drawing Reference Number	Revision	Title
22075-BGL-XX-XX-DR-C-00300	P6	S278 General Arrangement
22075-BGL-XX-XX-DR-C-00301	P3	S278 Swept Path Analysis
22075-BGL-XX-XX-DR-C-00302	P6	S278 Finished Surface Levels
22075-BGL-XX-XX-DR-C-00303	P5	S278 Long and Cross Sections
22075-BGL-XX-XX-DR-C-00304	P6	S278 Pavement Construction
22075-BGL-XX-XX-DR-C-00305	P6	S278 Kerbs and Edgings
22075-BGL-XX-XX-DR-C-00306	P6	S278 Road Markings and Signage
22075-BGL-XX-XX-DR-C-00307	P6	S278 Drainage and Services
22075-BGL-XX-XX-DR-C-00308	P6	S278 Site Clearance
EVO20013680-LD-001	B	Street lighting design

APPENDIX B: Drawing Showing Proposed Scheme and Problem Locations

