

Cycle Enfield - Section 6

A105 Oaktree Avenue to Carpenters Gardens

Stage 2 Road Safety Audit

Ref: 2759.03.06/032/A105/BOR/2016

Prepared for:

London Borough of Enfield

By:

Road Safety Audit, TfL Asset Management Directorate

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Approved by: Andrew Coventry

Version	Status	Date
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1.0 INTRODUCTION

1.1 Commission

- 1.1.1 This report results from a Stage 2 Road Safety Audit carried out on the Cycle Enfield - Section 6, A105 Oaktree Avenue to Carpenters Gardens proposals.
- 1.1.2 The Audit was undertaken by TfL Road Safety Audit in accordance with the Audit Brief issued by the Client Organisation on 25th November 2016. It took place at the Palestra offices of TfL on 16th December 2016 and comprised an examination of the documents provided as listed in Appendix A, plus a visit to the site of the proposed scheme.
- 1.1.3 The visit to the site of the proposed scheme was made on 16th December 2016. During the site visit the weather was sunny and the existing road surface was dry.

1.2 Terms of Reference

- 1.2.1 The Terms of Reference of this Audit are as described in TfL Procedure SQA-0170 dated May 2014. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and how it impacts on all road users and has not examined or verified the compliance of the designs to any other criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem the Audit Team may, on occasion, have referred to a design standard without touching on technical audit. An absence of comment relating to specific road users / modes in Section 3 of this report does not imply that they have not been considered; instead the Audit Team feels they are not adversely affected by the proposed changes.
- 1.2.2 This Safety Audit is not intended to identify pre-existing hazards which remain unchanged due to the proposals; hence they will not be raised in Section 3 of this report as they fall outside the remit of Road Safety Audit in general as specified in the procedure SQA-0170 dated May 2014. Safety issues identified during the Audit and site visit that are considered to be outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in Section 6 of this report.
- 1.2.3 Nothing in this Audit should be regarded as a direct instruction to include or remove a measure from within the scheme. Responsibility for designing the scheme lies with the Designer and as such the Audit Team accepts no design responsibility for any changes made to the scheme as a result of this Audit.
- 1.2.4 In accordance with TfL Procedure SQA-0170 dated May 2014, this Audit has a maximum shelf life of 2 years. If the scheme does not progress to the next stage in its development within this period, then the scheme should be re-audited.
- 1.2.5 Unless general to the scheme, all comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan located in Appendix B.

- 1.2.6 It is the responsibility of the Design Organisation to complete the Designer's response section of this Audit report. Where applicable and necessary it is the responsibility of the Client Organisation to complete the Client comment section of this Audit report. Signatures from both the Design Organisation and Client Organisation must be added within Section 5 of this Audit report. A copy of which must be returned to the Audit Team.

1.3 Main Parties to the Audit

1.3.1 Client Organisation

Client contact details: Demos Kettenis – London Borough of Enfield

1.3.2 Design Organisation

Design contact details: Deepak Sharma - Jacobs

1.3.3 Audit Team

Audit Team Leader: Shane Martin – TfL Road Safety Audit

Audit Team Member: Kevin Seymour – TfL Road Safety Audit

Audit Team Observer: None present

1.3.4 Other Specialist Advisors

Specialist Advisor Details: None present

1.4 Purpose of the Scheme

The purpose of the scheme is to provide 5.5km of two-way segregated cycle route with public realm improvements at town centres*.

*Taken directly from the Audit Brief.

1.5 Special Considerations

- 1.5.1 This Audit Report covers Section 6 (Sheets 12 - 17) of this route only, along the A105 from Oaktree Avenue to outside Sainsbury's in proximity to Carpenters Gardens.
- 1.5.2 Full details of the traffic signal staging / timings have not yet been provided and therefore the Audit Team could not fully comment on this element of the proposals.

2.0 ITEMS RAISED IN PREVIOUS ROAD SAFETY AUDITS

The proposals were subject to a Stage 1 Road Safety Audit carried out in March 2016 by TfL Road Safety Audit, Asset Management Directorate (Ref 2524/032/A105/BOR/2016). This report covered the whole route and therefore many of the issues raised are not specific to this (Section 6) part of the proposals. Items raised in the previous Audit Report deemed relevant to this section can be summarised as follows:

- Problem 3.1.1 Combined zebra / cycle crossing facilities – Proposed zebra and cycle crossing layouts may result in drivers failing to give way to cyclists.
This problem remains in the detailed design proposals and is therefore raised again within this report as problem 3.2.1.
- Problem 3.1.3 Cycle lanes past junction locations - Segregated cycle lanes terminating just before side road junctions may increase left turning collisions between vehicles and cyclists.
This problem remains in the detailed design proposals and is therefore raised again within this report as problem 3.1.2.
- Problem 3.1.4 Side road cycle crossovers at raised junction tables - Drivers turning from main roads to side roads may brake late due to cyclists crossing side roads, leading to nose to tail collisions, or cycle to vehicle conflict.
This problem remains in the detailed design proposals and is therefore raised again within this report as problem 3.1.4.
- Problem 3.1.5 Bus stops / loading bays close to side road junctions and accesses – may restrict visibility splays and lead to failure to give way type collisions.
This problem remains in the detailed design proposals and is therefore raised again within this report as part of problem 3.3.2.
- Problem 3.6.2 Zebra crossing outside Sainsburys – Proximity of bus stops to the zebra crossing reduces forward visibility and may lead to failure to give way type collisions involving cyclists.
This problem remains in the detailed design proposals and therefore this is raised again as problem 3.2.3 in this Audit Report.

Items raised in the Stage 1 Road Safety Audit report that are outside the Terms of Reference:

- Issue 4.1 The revised kerb lines at side roads may alter vehicle swept paths and it is not clear if these have been assessed or may result in conflicts between turning vehicles.
This issue is considered to remain in part and will therefore be raised again as part of problem 3.3.1 in this Audit report.
- Issue 4.2 Bus boarders separated from the footways by cycle lanes may result in difficulties for some users to access the bus stop and may lead to low level cycle / pedestrian conflicts.

- Issue 4.11 This issue is considered to remain in part and will therefore be raised again as part of problem 3.1.3 in this Audit report.
- Issue 4.12 South of Eaton Park Road Removal of this pedestrian refuge island may result in pedestrians crossing close to the parking bays or bus stops.
- Issue 4.12 This issue is considered to remain in part and will therefore be raised again as part of problem 3.2.4 in this Audit report.
- Issue 4.12 Zebra crossing south of Stonard Road – High vehicle speeds may be incompatible with the proposed zebra crossing.
- Issue 4.12 This issue is considered to remain in part and will therefore be raised again as part of problem 3.2.5 in this Audit report.

3.0 ITEMS RAISED AT THIS STAGE 2 ROAD SAFETY AUDIT

This section should be read in conjunction with Paragraphs 1.2.1, 1.2.2 and 1.2.3 of this report.

3.1 CYCLING FACILITIES

3.1.1 PROBLEM

Location: General to scheme, multiple locations

Summary: The use of 'Orcas' as a segregation measure may lead to trips / falls for cyclists and pedestrians

The proposals include 'Orcas' as a semi / soft segregation measure alongside the cycle tracks. The Audit Team are concerned that the 'Orcas' may not be adequately visible to road users, particularly pedestrians, cyclists and powered-two-wheelers.

Pedestrians crossing the carriageway may fail to appreciate the raised nature of the 'Orcas', with a potential for trips and falls within the carriageway.

Riders of two wheeled vehicles may fail to appreciate that the 'Orcas' are raised, particularly in inclement weather. Riders may become destabilised as they over-run the features, leading to an increased potential to become unseated, with a resultant potential for personal injury.

The potential for injury is exacerbated as the features are situated in positions where they are encouraged to be traversed, such as outside residential accesses.

RECOMMENDATION

It is recommended that any potential trip hazards are removed; this may require the use of an alternative type of segregation measure.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The use of light segregation Orcas has been a proposed element of the scheme since initial development. The Orcas will be set inside the mandatory cycle lane marking (diag 1049B) and are white/black marked to stand out. In addition, the start and finish of an Orca line will be marked by a wand to further highlight the Orca line as it is approached. Orcas placed alongside vehicular access will be of a lower profile to allow vehicular over run. Orcas will be sited away from pedestrian crossing points to minimise the risk of trips.</p> <p>Post construction monitoring is recommended at a number of agreed locations to determine if there are any issues and to allow for modifications if necessary.</p>	
Client Organisation Comments	
<p>Designer's response accepted – post implementation monitoring will be carried out.</p>	

3.1.2 PROBLEM

Location: General to scheme, multiple locations

Summary: Semi segregated cycle lanes terminating just before the side road junction may increase left turning collisions between vehicles and cyclists

The proposed semi segregated cycle lanes return to the general carriageway just before various side road junctions. It may be difficult for both sets of road users to understand who has priority and this may lead to turning collisions involving cyclists. Cyclists may not anticipate and vehicles turning across their path in close proximity to them leaving the semi segregated cycle lane, which could lead to increased risk of side impact collisions as motorists cross the path of cyclists.

RECOMMENDATION

It is recommended that the priority is clearly defined. Furthermore, research from TRL (PPR703 – Trials of segregation set-back at side roads) indicates that setting back cycle lanes by at least 20m from side roads may improve cyclist safety at junctions.

Design Organisation Response	Accepted / Part Accepted / Rejected
Many of the side roads are tight residential streets. Therefore vehicles should be travelling at low speeds whilst turning into the side roads. The majority have been redesigned as Tables which should further reduce vehicular speed and reaction/assessment time. Cycle symbols have been provided on the carriageway across the mouths of the junctions to help warn motorists of the presence of cyclists.	
Client Organisation Comments	
Designer's response accepted	

3.1.3 PROBLEM

Location: General to scheme, multiple locations

Summary: Bus passengers boarding or alighting may result in collisions with cyclists on the track

The Audit Team are concerned that proposed cycle tracks run immediately adjacent to proposed bus stop boarders. Therefore bus passengers would board / alight a bus from / onto the cycle tracks. This may result in cyclists diverting away from the cycle track whilst their path is obscured, which may result in increased collisions with pedestrians or vehicles who may not expect cyclists diverting from the track. In addition, bus passengers alighting may not anticipate or be able to see approaching cyclists immediately adjacent to the bus, which may result in cycle to pedestrian type collisions. Visually impaired pedestrians, particularly those alighting from a bus may follow the kerb line and inadvertently enter the carriageway. Visually impaired pedestrian unknowingly within the carriageway are at an increased potential for collisions with motorists.

RECOMMENDATION

It is recommended that the layouts of the bus stop boarders / cycle tracks are altered to mitigate the potential interactions with bus passengers. This may include, but is not limited to, providing tramline tactile paving prior to the ramps down to carriageway level and an increased separation between the boarding / alighting area and the cycle track.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>Bus boarders have been introduced with a 0.5m buffer at locations where there is not scope to introduce a bus stop by-pass, to deliver an acceptable level of route continuity particularly at conflict points such as bus stops, where buses will be pulling into the kerb, through the desire line of a cyclist. The proposed bus stop boarders will use different material/tones to clearly show a change in environment from a segregated facility to a shared space. This is not dissimilar to a shared space environment adjacent to a toucan crossing, where pedestrian and cycles mix.</p> <p>Monitoring can be undertaken post-implementation to review the safe operation of the proposed design.</p>	
Client Organisation Comments	
Designer's response accepted – operation of the bus stop boarders will be monitored post-implementation.	

3.1.4 PROBLEM

Location: General to the scheme – side road cycle crossovers at raised junction tables

Summary: Drivers turning from main roads to side roads may brake late due to cyclists crossing side roads, leading to nose to tail collisions, or cycle / vehicle conflicts

The off-road cycle facilities cross this side road at a raised table area, drivers turning from the main road have a short stacking space between the main road and these cycle crossovers. No give way markings are present as vehicles enter Sherbrook Gardens, neither is there sufficient stacking space to accommodate a vehicle without it overhanging on to the main road. Therefore, drivers may be confused by the arrangement and / or reluctant to give way to cyclists as it results in them remaining partially within the main carriageway, which may lead to late braking nose to tail collisions. The potential for conflicts may be exacerbated by the proposed parking relatively close to the side road between the main carriageway and segregated cycle track.

Drivers entering the main road may be confused by the lack of give way markings and therefore an unclear priority. As a result motorists may fail to give way to traffic on the main road or stop across the cycle lane, which may lead to nose to tail collisions or cycle to vehicle conflict.

RECOMMENDATION

If such cycle priority is to be provided at side roads then this should be clearly designated, an appropriate stacking space should be provided between the main road and cycle crossing to allow vehicles to wait between the main road and cycle crossing without encroaching in to the main carriageway or blocking the cycle crossing (reference London Cycle Design Guide). Any 'floating' loading / parking bays should be located to ensure that sufficient intervisibility is provided between cyclists and motorists. Additionally, it may be beneficial to provide additional give way markings consistently as vehicles enter the main road.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The reference to Sherbrook Gardens is unclear as this is in Section 10 of the route.</p> <p>Give way markings have been provided at the exit from all side roads, being placed behind the cycle lanes crossing the side roads.</p> <p>Along the route, we have looked to provide stacking space for motor vehicles turning into side roads, wherever possible. However, providing suitable stacking space is often limited by road space constraints and the need to provide suitable space for pedestrians.</p>	
Client Organisation Comments	
<p>Designer's response accepted.</p>	

3.1.5 PROBLEM

Location: General – various footway level sections of cycle track

Summary: Potential lack of delineation may lead to collisions with visually impaired pedestrians

The Audit Team are concerned that the proposed measures do not appear to indicate a delineator between the footway and cycle tracks proposed at footway level. This could lead to visually impaired pedestrians inadvertently entering these sections of cycle lanes or potentially entering the carriageway via the ramp between the two facilities. Cyclists on the cycle track or motorists on the carriageway are unlikely to anticipate a visually impaired pedestrian and this may therefore result in increased collisions between these users.

RECOMMENDATION

It is recommended that as well as a good visual differentiation between the footway and cycle tracks, a detectable delineator should be provided to ensure that all users are aware of the edge of footway whilst not presenting a trip hazard.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The cycle lane edging will comprise of 3 x 100x100mm cropped silver grey setts. The texture and differing contrast will indicate to visually impaired pedestrians that they should not enter the cycle lane.</p> <p>The cycle track will be surfaced in a suitable colour, to provide tonal difference with the surrounding footway.</p>	
Client Organisation Comments	
Designer's response accepted.	

3.1.7 PROBLEM

Location: General – Parking permitted adjacent to cycle track

Summary: Parking / loading permitted adjacent to the cycle track may result in users exiting or unloading within the cycle track

The proposals include retention of existing parking bays There appears to be a buffer of approximately 0.5m between the parking bays and the proposed cycle track. The Audit Team are concerned that pedestrians, users unloading and disabled users entering / exiting these vehicles, may do so within the cycle track which may result in an increased potential for collisions between southbound cyclists and people using / loading to / from the parking bays.

RECOMMENDATION

It is recommended that the buffer is increased to ensure that the cycle path is kept as clear as possible and suitable pedestrian and disabled user access to the parking bays is provided over the cycle track.

Design Organisation Response	Accepted / Part Accepted / Rejected
Due to site constraints a minimum of 0.5m buffer has been provided throughout the scheme between the edge of cycle lane and the carriageway/parking or loading bays. This is considered wide enough to allow for opening doors and people to disembark from vehicles without causing an obstruction to the cycle lane.	
On occasions where passengers are unloading vehicles, visibility ahead is good and cyclists will be given enough time to check speed and warn of approach, if necessary.	
Client Organisation Comments	
Designer's response accepted.	

3.1.8 PROBLEM

Location: Various – commencements of full height kerbs

Summary: Motorists may not notice and collide with the commencement of full height kerbs

The Audit Team are concerned that motorists may not appreciate that the edge of the cycle track includes a full height kerb alongside the 'floating bus stop' facility. This kerbed physical segregation commences within the carriageway running lane and it does not include a suitable vertical feature to highlight its presence or guide users alongside it. It may therefore, not be clear or conspicuous particularly during the hours of darkness. Motorists may collide with the kerb or swerve to avoid the features if they are noticed within close proximity, which may result in loss of control type collisions / injury to those on or within the vehicle.

RECOMMENDATION

It is recommended to alter the layout to suitably guide vehicles alongside the kerbs. This may include but is not limited to providing a vertical illuminated feature such as an Illuminated Guide Post (IGP) to provide suitable guidance alongside the feature.

Design Organisation Response	Accepted / Part Accepted / Rejected
Throughout the scheme there will be mandatory cycle lane marking (diag 1049B) 150mm width which will indicate to vehicles the edge of carriageway. On the	

approach to the kerbed segregation island this road marking will be splayed out so that it is offset 150mm from the edge of the kerb.

Client Organisation Comments

Designer's response accepted. The need for further measures to increase conspicuity of the kerbing will be reviewed post-implementation.

3.2 CROSSING FACILITIES

3.2.1 PROBLEM

Location: A – South of junction with Barrowell Green

Summary: Proposed parallel zebra and cycle crossing may result in drivers failing to give way to cyclists

The Audit Team are concerned that the proposed parallel zebra and cycle crossing may not be understood by motorists particularly as the layout is new to drivers. The following issues may result in an increased potential for collisions:

- Zebra crossings are well established and the conspicuousness of the thick black and white striped road markings help to clearly indicate that a pedestrian has priority over vehicular traffic in this area. The lack of these markings within the proposed cycle section of the crossing may lead to ambiguity over who has priority and motorists may fail to give way to cyclists it is also noted that no cycle road marking logos are proposed .
- Slow approach speeds by pedestrians enable an approaching motorist to notice they intend to cross, slow down and stop. Cyclists are likely to approach faster than pedestrians and may therefore fail to be noticed by approaching motorists.
- Motorists turning left out of Barrowell Green encounter the cycle element of the crossing immediately as they enter the A105 Green Lanes, they may not appreciate or expect to encounter a crossing in such close proximity, particularly as this element of the crossing is less conspicuous.
- The routes / dropped kerb facilities intended for cyclists to enter the cycle element of the crossing from the cycle track / carriageway are not clearly defined. This may result in cyclists using undetermined and inconsistent routes which may result in increased collisions with pedestrians.

These issues may lead to an increased potential for collisions between motorists and cyclists or shunt type collisions as motorists brake hard as they unexpectedly encounter a cyclist attempting to assert priority. It is also noted that the cycle part of the proposed crossing does not include cycle symbol road markings as prescribed in TSRGD 2016.

RECOMMENDATION

Provide measures which will allow cyclists to assert priority over motorists. This could include an alternative crossing type, or provide appropriate temporary signing etc to inform drivers of the intended usage until this layout becomes more commonplace. It may also be beneficial to relocate the crossing further away from the side roads and ensure the crossing complies with TSRGD 2016 which includes cycle symbols and to.

Design Organisation Response	Accepted / Part Accepted / Rejected
The exit radius has been reduced in order to slow vehicles existing Barrowell Green. Moving it further south would bring the pedestrian element of the crossing closer to the parking bay on the northbound carriageway. This may lead to exiting driver's attention being drawn to northbound approaching vehicles, rather than the zebra crossing.	
Client Organisation Comments	

Designer's response accepted.

3.2.2 PROBLEM

Location: B – South of junction with Barrowell Green

Summary: Proposed parallel zebra and cycle crossing may result in collisions between pedestrians and cyclists

The Audit Team are concerned that the proposed parallel zebra and cycle crossing layout may result in pedestrians unexpectedly encountering a cyclist crossing their path. Examples include on the western side of the crossing, cyclists continuing southbound are effectively guided straight across the area where pedestrians exit the carriageway. Also, users travelling north or southbound on the eastern footway may not anticipate cyclists crossing their path as they attempt to enter the cycle crossing.

Additionally, as the shared use extents on the eastern side of the crossing do not appear to be defined and as cyclists may make various / inconsistent manoeuvres to enter / exit the footway this may be difficult for pedestrians to anticipate which may further add to the potential for collisions between cyclists and pedestrians.

RECOMMENDATION

It is recommended to clarify the intended routes for cyclists and provide features to make these clear to both users, it may also be beneficial to clearly define the extents of the shared use area. This may require but is not limited to cycle logo markings to highlight the potential presence and intended route for cyclists and tactile paving / low level signs to indicate the extents of the shared use area on the eastern side of the crossing.

Design Organisation Response	Accepted/ Part Accepted / Rejected
<p>On the western side the southbound section of cycle track is intended to connect up to a Quiet Way. Cycle volume is not expected to be as high as for the a105 route. Similar applies to the eastern side.</p> <p>The extents of shared areas have been defined and low level shared area signage will be provided</p>	
Client Organisation Comments	
Designer's response accepted.	

3.2.3 PROBLEM

Location: C - Zebra crossing outside Sainburys

Summary: Proximity of bus stops to the zebra crossing reduces forward visibility and may lead to failure to give way type collisions involving cyclists

Bus stops on both sides of the crossing are located upstream of the zebra crossing location. When buses occupy the stops there may be poor forward visibility to the pedestrian waiting areas of the crossing for approaching drivers. Poor visibility may lead to drivers failing to stop at the crossing when a pedestrian is crossing, with consequent risk of pedestrian injury.

RECOMMENDATION

It is recommended that alterations are incorporated to ensure that adequate forward visibility should be provided to the pedestrian waiting areas on the approach to the crossing. This could be achieved by relocating the bus stops to a 'tail to tail' orientation.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>The suggested 'tail to tail' layout was considered either side of the crossing. However, the concern was that this would result in traffic regularly blocking back over the zebra crossings. A review of the bus stops has shown that the vast majority of passengers boarding and alighting at the two existing bus stops are travelling to/from the Sainsbury's store and therefore relocating the bus stops away from the supermarket was not considered satisfactory and tail to tail bus stops would result in the crossing being away from pedestrian desire lines, increasing the potential for informal crossing. Therefore it is felt that the proposed design represents the optimum layout for the location. The potential number of vehicles overtaking buses at speed is considered to be low.</p>	
Client Organisation Comments	
Client Organisation Comments	
<p>Designer's response accepted. Operation of crossing will be monitored post implementation and other measures, such as warning signage could be installed if necessary.</p>	

3.2.4 PROBLEM

Location: D – A105 Green Lanes near junction with Eaton Park Road

Summary: Removal of this crossing facility may result in pedestrians crossing at undetermined locations and an increased risk of potential collisions with motorists

The Audit Team are concerned that an existing pedestrian desire-line appears to exist at this informal crossing point. As the existing pedestrian refuge island and dropped kerbs are proposed to be removed as part of the scheme proposals users may cross around this area but at undetermined locations such as beside the proposed parking bays, where they may have reduced intervisibility between approaching vehicles. Additionally, the lack of dropped kerbs may result in some users such as those with pushchairs or wheelchairs potentially having difficulties and taking longer to exit the carriageway. Therefore if pedestrians continue to cross at this location they may be at an increased risk of collisions with vehicles. Also pedestrians rushing to cross may be less likely to notice the 'orcas' which may exacerbate the potential for trips and falls highlighted in 3.1.1.

RECOMMENDATION

It is recommended to determine the pedestrian desire-lines and ensure that they are suitably catered for. This may include, but is not limited to providing additional crossing facilities.

Design Organisation Response	Accepted / Part Accepted / Rejected
<p>A pedestrian refuge island could not be accommodated in the proposed design, whilst retaining acceptable carriageway widths of minimum 3.25m in each direction, the existing two on-street parking spaces (to satisfy local residents) and the proposed cycle lanes.</p> <p>The distance between the retained zebra crossing south of Barrowell Green and the proposed crossing outside St Monica's church is approximately 350m, which is considered a reasonable spacing along a residential corridor.</p> <p>Reduced carriageway widths are anticipated to reduce vehicles speeds, increasing the safety for informal crossing.</p>	
Client Organisation Comments	
Designer's response accepted.	

3.2.5 PROBLEM

Location: E – A105 Green Lanes near junction with Stonard Road

Summary: Proposed zebra crossing facility may not be compatible with vehicle speeds, which may result in collisions with pedestrians

The Audit Team are concerned that the existing speeds along this section appear as though they may be higher than the recommended maximum 35mph (LTN 1/95). If the 85th percentile speeds do exceed this then installation of a zebra crossing could lead to pedestrians being less likely to be able to assert priority over oncoming vehicles and / or for vehicles to not stop in time as a pedestrian tries to assert priority. This may therefore result in an increased potential for collisions with pedestrians, particularly whilst the bus stop (northeast bound approach) or parking bays (southwest bound approach) are not occupied, as these may have a traffic calming effect and reduce vehicle speeds on approach.

RECOMMENDATION

It is recommended to provide features to ensure that the approach speeds are suitable for the crossing type proposed. This may include, but is not limited to, providing more formalised / permanent speed reduction measures on approach to the crossing facility such as kerb build outs for the bus stop / parking bays.

Design Organisation Response	Accepted / Part Accepted / Rejected
The approaches from both sides have been narrowed by the introduction of semi-segregated cycle lanes. Speed monitoring could take place post installation to assess the 85% speed and, if necessary, introduce additional features.	
Client Organisation Comments	
Designer's response accepted – speed surveys will be undertaken post-implementation to determine approach speeds.	

3.3 JUNCTIONS

3.3.1 PROBLEM

Location: General to scheme, multiple locations

Summary: The altered kerb lines may result in increased collisions as turning vehicles increasingly encroach into the path of another user

The proposals include various kerb line alterations which may increase the potential for turning vehicles to encroach into another user's path. This could lead to an increased potential for head on or side impact type collisions as a user turning into or out of the side roads or accesses is encountered by a vehicle travelling in the opposing direction.

RECOMMENDATION

It is recommended to undertake / check swept path analysis and make alterations if necessary to ensure that the vehicles likely to use these roads can undertake typical manoeuvres with minimal intrusion into the path of another vehicle.

Design Organisation Response	Accepted / Part Accepted / Rejected
Swept paths have been checked.	
Client Organisation Comments	
Designer's response accepted.	

3.3.2 PROBLEM

Location: General to the scheme – bus stops / loading / parking bays close to side roads

Summary: Stationary vehicles close to side road junctions and accesses may restrict junction visibility splays and lead to failure to give way type collisions

At many locations the loading / parking bays are located close to side road junctions and accesses. Stationary vehicles close to side roads may restrict visibility for drivers emerging from the side roads and this may lead to failure to give way type collisions. Similarly, where bus stops are located close to the side roads the Audit Team are concerned that vehicles overtaking waiting buses may not suitably observe vehicles egressing from side roads which may result in side impact type collisions.

RECOMMENDATION

It is recommended to ensure that appropriate visibility splays at side roads should be provided and kept free of obstruction and stationary vehicles. This may require alterations to the positioning and / or extent of the bus stops / parking / loading bays.

Design Organisation Response	Accepted / Part Accepted / Rejected
In terms of bus stops close to side roads, these bus stops generally take up the full width of the running lane (due to carriageway widening to accommodate the cycle facilities). In these circumstances it is considered unlikely that following vehicles will look to overtake the full length of a stationary bus.	
Client Organisation Comments	
Designers response accepted.	

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Stage 2 Road Safety Audit Report

End of list of problems identified and recommendations offered in this Stage 2 Road Safety Audit

4.0 ISSUES IDENTIFIED DURING THE STAGE 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 Client 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: Various – junctions with proposed raised tables

Reason considered to be outside the Terms of Reference: Issue for clarification rather than a defined road safety concern.

Various junctions are proposed to have raised tables implemented. The kerb details indicate that away from crossing points where transition or flush kerbs are proposed the kerbs will have an upstand of 125mm or to match existing. It is not clear therefore what the upstand will be at the raised tables.

It is assumed that a detectable upstand will be provided away from pedestrian crossing points.

Design Organisation Response	Accepted / Part Accepted / Rejected
Upstand on tables will be 25mm away from crossing points.	
Client Organisation Comments	
Designer's response accepted	

4.2 ISSUE

Location: Various – shared use cycle / footway

Reason considered to be outside the Terms of Reference: Issue for clarification rather than a defined road safety concern.

It is not clear what the extents of the shared use surfaces are as none of the shared use extents appear to be defined. Additionally, at some locations it is not clear what the intended cyclist route is.

In order to avoid cyclists continuing on the footway and the potential for low level cycle / pedestrian conflicts / unexpected cycle manoeuvres, it may be beneficial to clearly determine what the intended cycle routes are. This may include but is not limited to appropriate tactile paving, dropped kerbs and road markings / signs to indicate the intended routes / manoeuvres.

Design Organisation Response	Accepted / Part Accepted / Rejected
Shared areas will be identified by appropriate signage and the change from specific cycle track surfacing (buff asphalt) to generic footway surfacing (paving slabs).	
Client Organisation Comments	

Designer's response accepted

4.3 ISSUE

Location: Various – throughout this section

Reason considered to be outside the Terms of Reference: Issue for clarification rather than a defined road safety concern.

Planting / SuDs 'Rain Gardens' are proposed immediately adjacent to the carriageway / cycle lanes at various junctions throughout this section.

The full details of the proposed features have not been provided but it is assumed that these will be of a type / maintained so that they do not restrict visibility or overgrow into the live carriageway areas.

Design Organisation Response	Accepted / Part Accepted / Rejected
Confirmed.	
Client Organisation Comments	
Designer's response accepted	

5.0 SIGNATURES AND SIGN-OFF

5.1 AUDIT TEAM STATEMENT

We certify that we have examined the drawings and documents listed in Appendix A. to this Safety Audit report. The Road Safety Audit has been carried out in accordance with TfL Procedure SQA-0170 dated May 2014, with the sole purpose of identifying any feature that could be removed or modified in order to improve the safety of the measures. The problems identified have been noted in this report together with associated suggestions for safety improvements that we recommend should be studied for implementation.

No one on the Audit Team has been involved with the design of the measures.

AUDIT TEAM LEADER:

Name: Shane Martin MCIHT, MSoRSA Signed: 

Position: Principal Road Safety Auditor Date: 11/01/2017

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: shane.martin@tfl.gov.uk (020 3054 2590)

AUDIT TEAM MEMBER:

Name: Kevin Seymour Signed: 
B Sc, PG Dip TS, MCIHT, MSoRSA

Position: Principal Road Safety Auditor Date: 11/01/2017

Organisation: Transport for London, Road Safety Audit
Asset Management Directorate

Address: 4th Floor Palestra, 197 Blackfriars Road, London, SE1 8NJ

Contact: kevinseymour@tfl.gov.uk (020 3054 1037)

5.2 DESIGN TEAM STATEMENT

In accordance with SQA-0170 dated May 2014, I certify that I have reviewed the items raised in this Stage 2 Safety Audit report. I have given due consideration to each issue raised and have stated my proposed course of action for each in this report. I seek the Client Organisation's endorsement of my proposals.

Name: Colin Aarons

Position: Project Manager

Organisation: Jacobs

Signed: *Colin Aarons*

Dated: 24.02.17

5.3 CLIENT ORGANISATION STATEMENT

I accept these proposals by the Design Organisation.

Name: David Taylor

Position: Head of Traffic & Transportation

Organisation: LB Enfield

Signed:



Dated: 07.04.2017

5.4 SECONDARY CLIENT ORGANISATION STATEMENT (where appropriate)

I accept these proposals by the Design Organisation.

Name:

Position:

Organisation:

Signed:

Dated:

APPENDIX A

Documents Forming the Audit Brief

DRAWING NUMBER	DRAWING TITLE
B240A024-DG-A105-0100-012 Rev -	Cycle Enfield A105 - General Arrangement Sheet 12 of 47
B240A024-DG-A105-0100-013 Rev -	Cycle Enfield A105 - General Arrangement Sheet 13 of 47
B240A024-DG-A105-0100-014 Rev -	Cycle Enfield A105 - General Arrangement Sheet 14 of 47
B240A024-DG-A105-0100-015 Rev -	Cycle Enfield A105 - General Arrangement Sheet 15 of 47
B240A024-DG-A105-0100-016 Rev -	Cycle Enfield A105 - General Arrangement Sheet 16 of 47
B240A024-DG-A105-0100-017 Rev -	Cycle Enfield A105 - General Arrangement Sheet 17 of 47
B240A024-DG-A105-0200-012 Rev -	Cycle Enfield A105 - Site Clearance Sheet 12 of 47
B240A024-DG-A105-0200-013 Rev -	Cycle Enfield A105 - Site Clearance Sheet 13 of 47
B240A024-DG-A105-0200-014 Rev -	Cycle Enfield A105 - Site Clearance Sheet 14 of 47
B240A024-DG-A105-0200-015 Rev -	Cycle Enfield A105 - Site Clearance Sheet 15 of 47
B240A024-DG-A105-0200-016 Rev -	Cycle Enfield A105 - Site Clearance Sheet 16 of 47
B240A024-DG-A105-0200-017 Rev -	Cycle Enfield A105 - Site Clearance Sheet 17 of 47
B240A024-DG-A105-0500-012 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 12 of 47
B240A024-DG-A105-0500-013 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 13 of 47
B240A024-DG-A105-0500-014 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 14 of 47
B240A024-DG-A105-0500-015 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 15 of 47
B240A024-DG-A105-0500-016 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 16 of 47
B240A024-DG-A105-0500-017 Rev A	Cycle Enfield A105- Proposed drainage plan Sheet 17 of 47

Cycle Enfield - Section 6, A105 Oaktree Avenue to Carpenters Gardens

Stage 2 Road Safety Audit Report

B240A024-DG-A105-0700-012 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 12 of 47
B240A024-DG-A105-0700-013 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 13 of 47
B240A024-DG-A105-0700-014 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 14 of 47
B240A024-DG-A105-0700-015 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 15 of 47
B240A024-DG-A105-0700-016 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 16 of 47
B240A024-DG-A105-0700-017 Rev -	Cycle Enfield A105 – Road Pavements General Sheet 17 of 47
B240A024-DG-A105-1100-012 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 12 of 47
B240A024-DG-A105-1100-013 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 13 of 47
B240A024-DG-A105-1100-014 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 14 of 47
B240A024-DG-A105-1100-015 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 15 of 47
B240A024-DG-A105-1100-016 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 16 of 47
B240A024-DG-A105-1100-017 Rev -	Cycle Enfield A105 - Kerbs footways and paved areas Sheet 17 of 47
B240A024-DG-A105-1200-012 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 12 of 47
B240A024-DG-A105-1200-013 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 13 of 47
B240A024-DG-A105-1200-014 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 14 of 47
B240A024-DG-A105-1200-015 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 15 of 47
B240A024-DG-A105-1200-016 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 16 of 47
B240A024-DG-A105-1200-017 Rev B	Cycle Enfield A105 - Traffic signs and road markings Sheet 17 of 47

Cycle Enfield - Section 6, A105 Oaktree Avenue to Carpenters Gardens

Stage 2 Road Safety Audit Report

B240A024-DG-A105-1300-012 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 12 of 47
B240A024-DG-A105-1300-013 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 13 of 47
B240A024-DG-A105-1300-014 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 14 of 47
B240A024-DG-A105-1300-015 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 15 of 47
B240A024-DG-A105-1300-016 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 16 of 47
B240A024-DG-A105-1300-017 Rev A	Cycle Enfield A105 – MCHW Series 1300 Road Lighting Column & Bracket Mainline Layout Plan Sheet 17 of 47

DOCUMENTS

- Safety Audit Brief
- Site Location Plan
- Traffic signal details
- TfL signal safety checklist
- Departures from standard
- Previous Road Safety Audits
- Previous Designer Responses
- Collision data
- Collision plot
- Traffic flow / modelling data
- Pedestrian flow / modelling data
- Speed survey data
- Other documents

DETAILS (where appropriate)

2524/032/A105/BOR/2016

A105 Enfield - Proposed Road Marking Schedule
A105 Enfield - Sign Schedule - Section 6

APPENDIX B

Problem Locations



FOR CONTINUATION PLEASE REFER TO DRAWING 012

FOR CONTINUATION PLEASE REFER TO DRAWING 014



We warrant that the information contained in this drawing has been prepared by us or on our behalf by a qualified professional person and that it complies with the requirements of the relevant legislation and standards. We do not warrant that the information is complete, correct or that it will be suitable for any purpose other than that for which it is intended. We accept no liability for any loss or damage, whether direct or indirect, arising from the use of this drawing.

REVISIONS		DATE	BY	CHKD
1	ISSUED FOR INFORMATION			

REV.	DATE	DESCRIPTION	DESIGNED	CHECKED	APPROVED

Building layout
 Proposed layout
 Proposed emergency construction (refer to notes 010 drawing for details)
 Proposed kerbside parking (refer to notes 010 drawing for details)
 Proposed wheel table (refer to notes 010 drawing for details)
 Proposed safety construction under existing (refer to notes 100 drawing for details)
 Proposed cycle path construction (refer to notes 100 drawing for details)
 Proposed cycle lane - proposed in carriageway (including kerbside parking (refer to notes 010 drawing for details)
 Proposed BS24124 Non-Standard
 Proposed parking
 Cycleway table

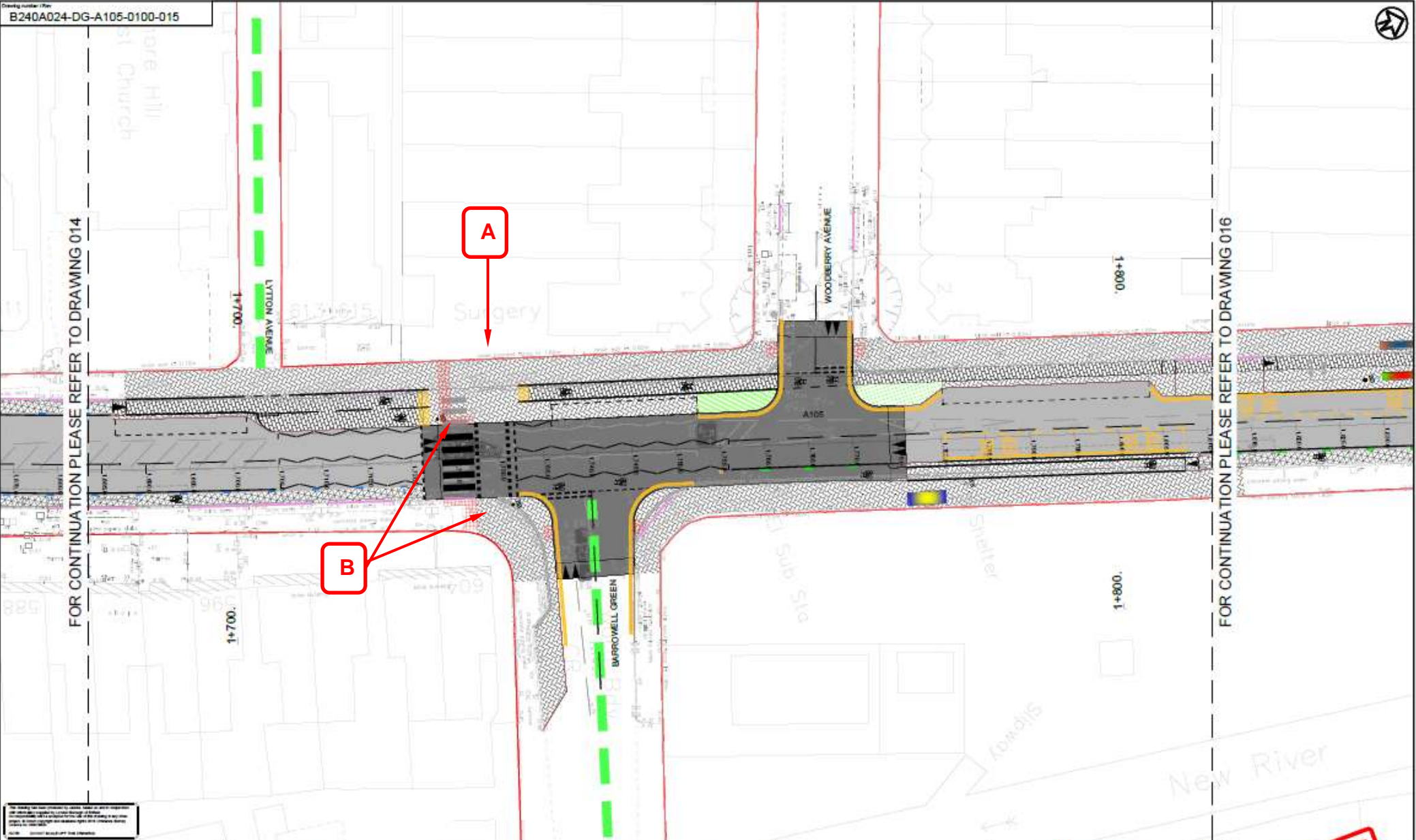
Building extension
 Proposed extension
 Highway boundary
 Proposed kerbside outside shared cycle table parking
 Vehicle secondary signal head
 Vehicle primary signal head
 Protection signal head
 Riding CCTV head to be retained
 Proposed CCTV head
 Proposed vehicle beacon
 Proposed vehicle beacons
 Proposed kerb stop flag to be retained
 Proposed kerb stop flag

Proposed cycle path
 Proposed cycle lane
 Proposed kerb stop table to be retained
 Proposed kerb stop table
 Riding kerb stop table to be retained
 Proposed kerb stop table
 Proposed kerbside outside shared cycle table parking

- Notes**
- All dimensions are in metres unless otherwise stated. Dimensions shown are for illustrative purposes. Contractor is to refer to relevant drawings for setting out details.
 - Do not work from this drawing.
 - All road markings and signs to be in accordance with the Traffic Signs Regulations and General Directions 2016.
 - Landscape is a combination of both landscape garden and Chelsea Farm. Where landscape garden information is not provided on drawings, all dimensions shown have been measured on site. Contractor and landscaper to be brought to the attention of the Site Engineer.
 - For further details of proposed signs please refer to Sign Schedule.
 - All existing damaged gully grates to be replaced.
 - All gully grates within proposed carriageway cycle lane to be replaced with cycle friendly grates and rectangular kerbside grates to be retained to allow.
 - Riding kerb stop table to be retained. Kerbside kerb stop table to be replaced with proposed cycle table to be replaced, where indicated on the drawing by a red circle. Note that proposed kerbside table. Construction will vary depending on underlying structure.
 - Lamp columns (indicated by white dots) have been replaced by L.E.D. units, by which the carriageway is not being resurfaced, a 1m maintenance strip has been shown adjacent to the perimeter cycle lane.

RINGWAY
 Landscape & Arboriculture
ENFIELD
 Council
 enfield@ringway.gov.uk
CYCLE ENFIELD - A105

DRIFT
 GENERAL ARRANGEMENT SHEET 13 OF 13 FOR COMMENTS ONLY
 FOR APPROVAL
 Scale: 1:50 @ A1
 Drawing number: B240A024-DG-A105-0100-013
 Rev: -



FOR CONTINUATION PLEASE REFER TO DRAWING 014

FOR CONTINUATION PLEASE REFER TO DRAWING 016

The drawing has been prepared to advise clients of the proposed works and is not to be used for construction purposes. It is the responsibility of the client to ensure that the drawing is used for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

31/05/2018		FOR 2018/2019		2018	AD	SR	DA
Rev	Rev Date	Purpose of revision		Drawn	Checked	Revised	Approved

	Proposed cycle lane
	Proposed cycle lane with contraflow
	Proposed cycle lane with contraflow and contraflow
	Proposed cycle lane with contraflow and contraflow
	Proposed cycle lane with contraflow and contraflow
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	Proposed cycle lane

- All dimensions are in metres unless otherwise stated.
- Construction shown on this drawing is for illustrative purposes. Contractor is to refer to relevant drawings for setting out details.
- Do not locate from this drawing.
- All road markings and signs to be in accordance with the Traffic Signs Regulations and General Directions 2016.
- Landscape site a combination of both topographical survey and Ordnance Survey. Where topographical survey information is not provided on drawings, all dimensions shown have been measured on site. Contourlines and elevations to be brought to the attention of the Site Engineer.
- For further details of proposed signs please refer to Signs Schedule.
- All existing drainage/gully points to be replaced.
- All gully grates unless proposed otherwise shall be replaced with cycle friendly grates and underdrains/gullies to be replaced to site.
- Proposed cycle lanes are to be replaced, unless indicated on the drawings by break markings. Note where proposed further works. Construction will vary depending on underlying conditions.
- Large volumes unconflicted by works will have barriers replaced by L.E.C. units, by others.
- Where the carriageway is not being widened, a 1.5m wide safety strip shall be shown adjacent to the permanent cycle lane.

Ringsway Jacobs

ENFIELD Council

Client: ENFIELD Council

Project: CYCLE ENFIELD - A105

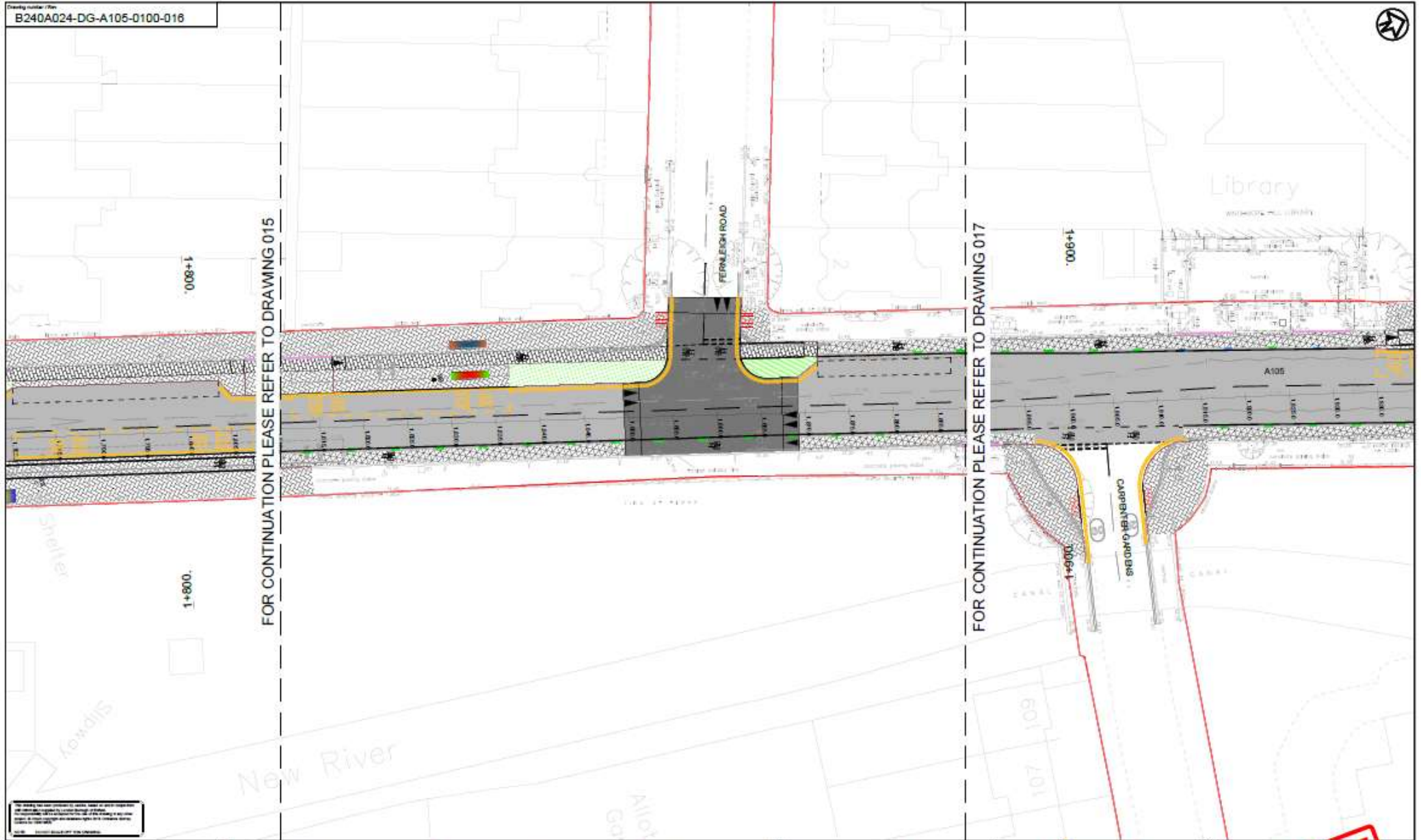
GENERAL ARRANGEMENT SHEET 15 OF 175

DRAFT FOR COMMENTS ONLY

FOR APPROVAL

Sheet No:	240000001	DO NOT SCALE
Sheet No.:	B240A024	
Client No.:		
Drawing No.:		

B240A024-DG-A105-0100-015



FOR CONTINUATION PLEASE REFER TO DRAWING 015

FOR CONTINUATION PLEASE REFER TO DRAWING 017

This drawing has been prepared to enable tender to be placed. It is not intended for use for construction purposes. It is for the use of the contractor only. It is the contractor's responsibility to check the drawing for any errors and to advise the contractor of any errors.

No.	Rev.	Date	By	Checked	Author	Project
1		20/10/2024	PR	AW	AK	EA

- Building level
- Proposed highway construction (refer to notes 010 drawings for details)
- Carriageway construction (refer to notes 010 drawings for details)
- Proposed wheel side (refer to notes 010 drawings for details)
- Proposed kerb and channel (refer to notes 010 drawings for details)
- Proposed cycle path construction (refer to notes 010 drawings for details)
- Proposed cycle lane - proposed to carry heavy loads (refer to notes 010 drawings for details)
- Proposed BS2768 Cycle
- Proposed parking
- Gateway/Gate

- Existing pavement
- Proposed pavement
- Highway boundary
- Proposed outside kerb (refer to notes 010 drawings for details)
- Vehicle secondary signal head
- Vehicle primary signal head
- Pedestrian signal head
- Existing CCTV to be retained
- Proposed CCTV head
- Proposed BS2768 kerb
- Proposed kerb to be retained
- Existing kerb to be retained
- Proposed kerb to be retained

- Proposed cycle path
- Proposed lane
- Proposed kerb to be retained
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- Proposed cycle path
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- Proposed kerb to be retained

1. All dimensions are in metres unless otherwise stated. Dimensions shown are for illustrative purposes. Contractor is to refer to relevant drawings for setting out details.
2. Do not work from this drawing.
3. All road markings and signs to be in accordance with the Traffic Signs Regulations and General Directions 2016.
4. Layouts are a combination of both Kingfisher Survey and Ordnance Survey. Where Kingfisher Survey information is not provided on drawings, all dimensions shown have been measured on site. Callmaker and discrepancies to be brought to the attention of the Site Engineer.
5. For further details of proposed signs please refer to Sign Schedule.
6. All existing damaged gully grates to be replaced.
7. All gully grates with proposed carriageway cycle lane to be replaced with cycle friendly grates and undamaged existing grates to be retained in situ.
8. Existing utility covers to be marked in correct levels where required. Proprietary covers within proposed cycle tracks are to be replaced, where indicated on the drawings by legend symbols. Proprietary covers within kerbside are to be replaced where indicated on the drawings by legend symbols.
9. Lamp columns (classified by weight) will have ballasts replaced by LED, with, by default, where the carriageway is not being resurfaced, a 1m maintenance strip has been shown adjacent to the permanent cycle lane.

RINGWAY ACCESS
 ENFIELD COUNCIL
 CYCLE ENFIELD - A105

GENERAL ARRANGEMENT SHEET 16 OF 18 FOR COMMENTS ONLY

DRAWING APPROVAL

Drawn by: AT

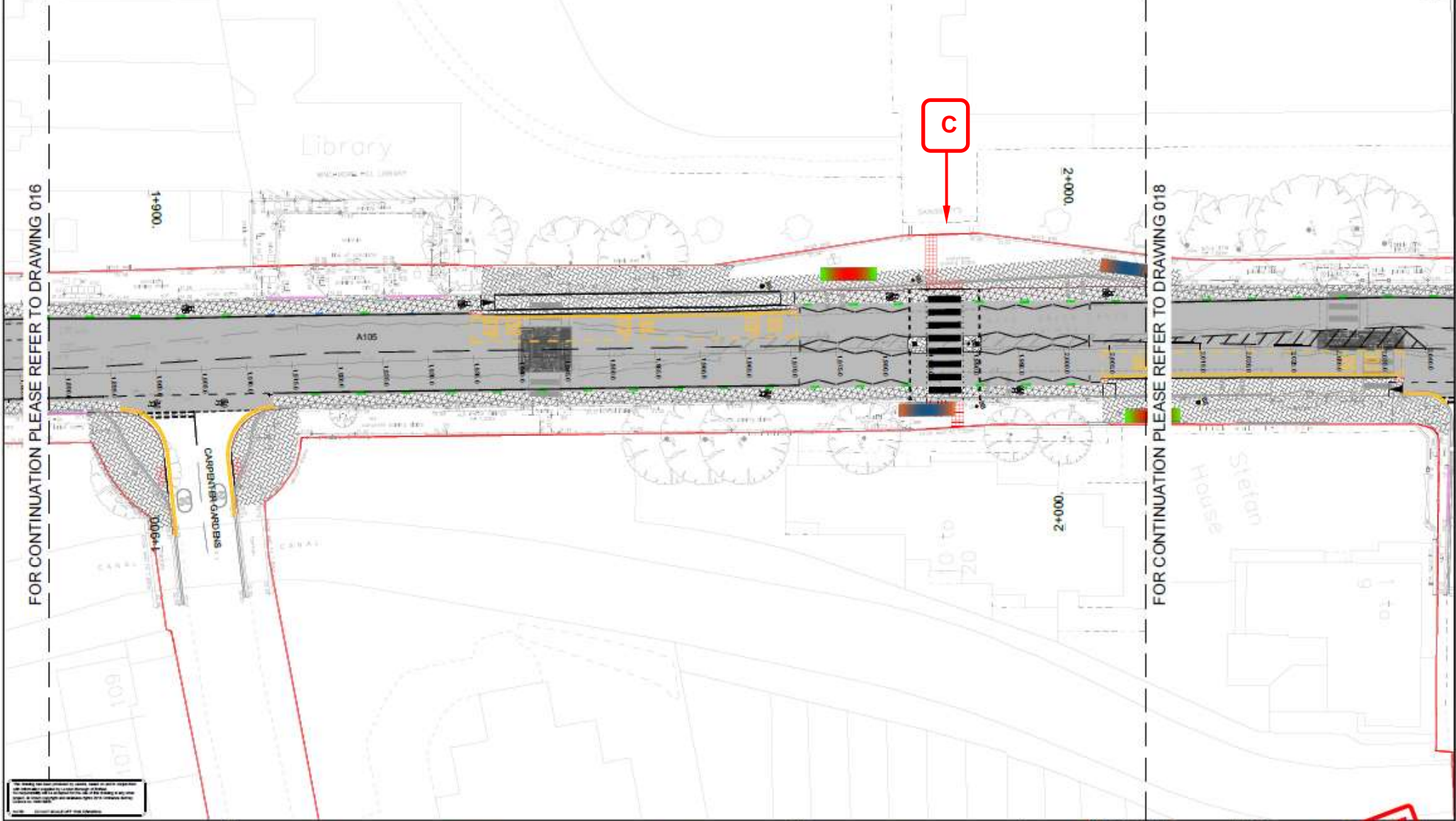
Checked by: AT

Date: 20/10/24

Scale: DO NOT SCALE

Drawing number: **B240A024-DG-A105-0100-016**

Rev: -



FOR CONTINUATION PLEASE REFER TO DRAWING 016

FOR CONTINUATION PLEASE REFER TO DRAWING 018

No liability is accepted for errors due to omissions or errors in the drawings or any other information provided. The user of these drawings is advised to check the accuracy of the information and to ensure that all necessary permissions and consents have been obtained. The user of these drawings is advised to check the accuracy of the information and to ensure that all necessary permissions and consents have been obtained.

Rev.	Date	Description of revision	Drawn	Check	Appr'd
1	20/02/24	PERMITTED	DM	AS	MR. CA.

This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.

Site

- Existing layout
- Proposed layout
- Proposed highway construction (refer to notes 012 drawings for details)
- Contingency roadwork (refer to notes 012 drawings for details)
- Proposed road work (refer to notes 012 drawings for details)
- Proposed roadwork construction (refer to notes 012 drawings for details)
- Proposed cycle lane - proposed contingency (including roadwork refer to notes 012 drawings for details)
- Proposed cycle lane - proposed contingency (including roadwork refer to notes 012 drawings for details)
- Proposed parking
- Gateway (refer to notes 012 drawings for details)

Proposed signage

- Proposed signage
- Highway boundary
- Proposed variable message board
- Variable message board
- Variable primary signal head
- Variable secondary signal head
- Variable signal head
- Variable signal head
- Proposed CCTV
- Proposed CCTV head
- Proposed mobile beacon
- Proposed low slip flag to be retained
- Proposed low slip flag

Proposed signs

- Proposed sign pole
- Proposed sign
- Proposed sign (refer to notes)
- Proposed low shelter
- Proposed low shelter to be removed
- Proposed low shelter
- Proposed bollard shelter
- Proposed variable message board
- Proposed low slip flag

- Notes**
- All dimensions are in metres unless otherwise stated. Dimensions shown are for illustrative purposes. Contractor to refer to relevant drawings for setting out details.
 - Do not work from this drawing.
 - All road markings and signs to be in accordance with the Traffic Signs Regulations and General Directions 2016.
 - Layouts are a combination of both topographical survey and Ordnance Survey. Where topographical survey information is not provided on drawing, all dimensions shown have been measured on site. Contour and elevations to be brought to the attention of the Site Engineer.
 - For further details of proposed signs please refer to sign schedule.
 - All existing drainage gully grates to be replaced.
 - All gully grates within proposed carriageway cycle lane to be replaced with cycle friendly grates and surrounding existing grates to be retained if able.
 - Drinking water services to be laid to correct levels where required. Pushing cables within proposed cycle tracks to be retained, where indicated on the drawing by brown cross-hatch show proposed surface details. Contour lines will vary depending on underlying geology.
 - Large volumes of material will have to be removed by L.C. work, by others, if the carriageway is not being resurfaced, a 1m maintenance strip has been shown adjacent to the permeable cycle lane.

RINGWAY Jacobs
Temporary expense

ENFIELD Council
enfield.gov.uk

Project: **CYCLE ENFIELD - A105**

Drawing title: **GENERAL ARRANGEMENT SHEET 7 OF 17**

DRAFT FOR COMMENTS ONLY

FOR APPROVAL

Issue: **PROB @ A1** | DO NOT SCALE

Issue No: **B240A024**

Drawing number: **B240A024-DG-A105-0100-017**