

Visibility Spays
Scale: 1:2000

Indicative Junction Layout
Scale: 1:500

Arm	PROPOSED ROUNDABOUT: DMRB COMPLIANCE WITH TD 16/07							
	Entry Path Width (m)	Entry Radius Into Rotary (m)	Exit Radius From Rotary (m)	Stopping Sight Distance (m)	Entry Angle (°)	Exit Design Speed (mph)	Approx ICD Across Arm (m)	Maximum Radius of Deflection (m)
A12 Ring Road (North)	14.0	20	No Change	295	20	70	79	100
Newbourne Road	10.5	20	33	215	24	60	79	90
A12 Ring Road (South)	14.0	20	No Change	295	24	70	79	95
Foxhall Road	10.5	20	No Change	215	23	60	79	76

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR COMMENCE SITE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT HIS OWN RISK.

Construction Design and Management (CDM)
Key Residual Risks
Contractors entering the site should gain permission from the relevant land owners and/or principle contractor working on site at the time of entry. Contractors shall be responsible for carrying out their own risk assessments and for liaising with the relevant services companies and authorities. Listed below are Site Specific key risks associated with the project.

- 1) Overhead and underground services
- 2) Street Lighting Cables
- 3) Working adjacent to water courses and flood plain
- 4) Soft ground conditions
- 5) Working adjacent to live highways and railway line
- 6) Unchartered services
- 7) Existing buildings with potential asbestos hazards

NOTES:

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3. Brookbanks Consulting Ltd has prepared this drawing for the sole use of the client. The drawing may not be relied upon by any other party without the express agreement of the client and Brookbanks Consulting Ltd. Where any data supplied by the client or from other sources has been used, it has been assumed that the information is correct. No responsibility can be accepted by Brookbanks Consulting Ltd for inaccuracies in the data supplied by any other party. The drawing has been produced based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.
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5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
 - TA 23/81: Junctions and Accesses - Determination of Size of Roundabouts and Major-Minor Junctions
 - TD 16/07: The Geometric Design of Roundabouts.
 - TD 9/93: Highway Link Design;

KEY:

- Site Boundary
- Highway Boundary
- Stopping Sight Distance on Approach
- Forward Visibility on Exit

A Updates as per client requirements. MDM LW PAB 25.08.17
First Issue - - - 25.07.17

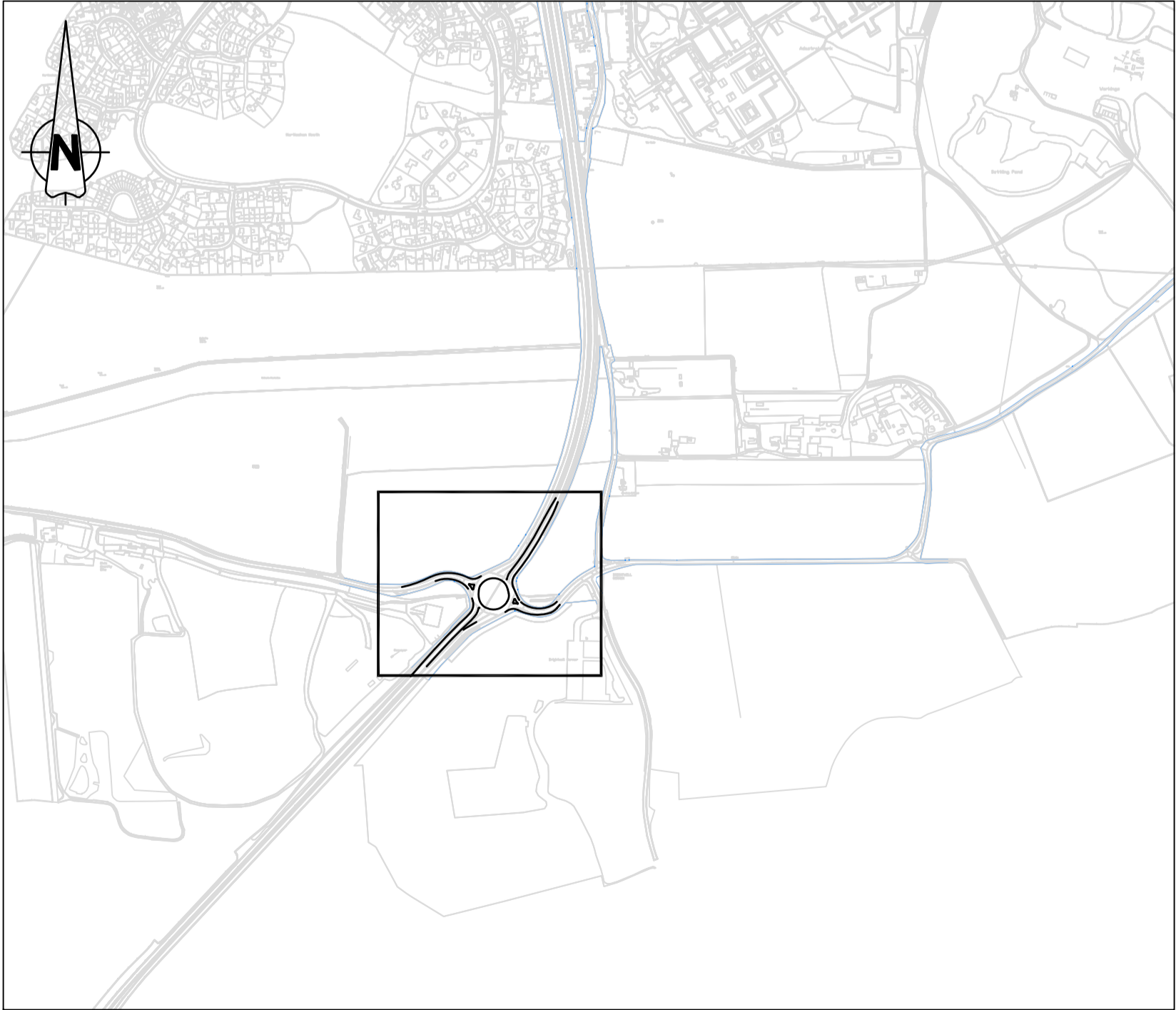
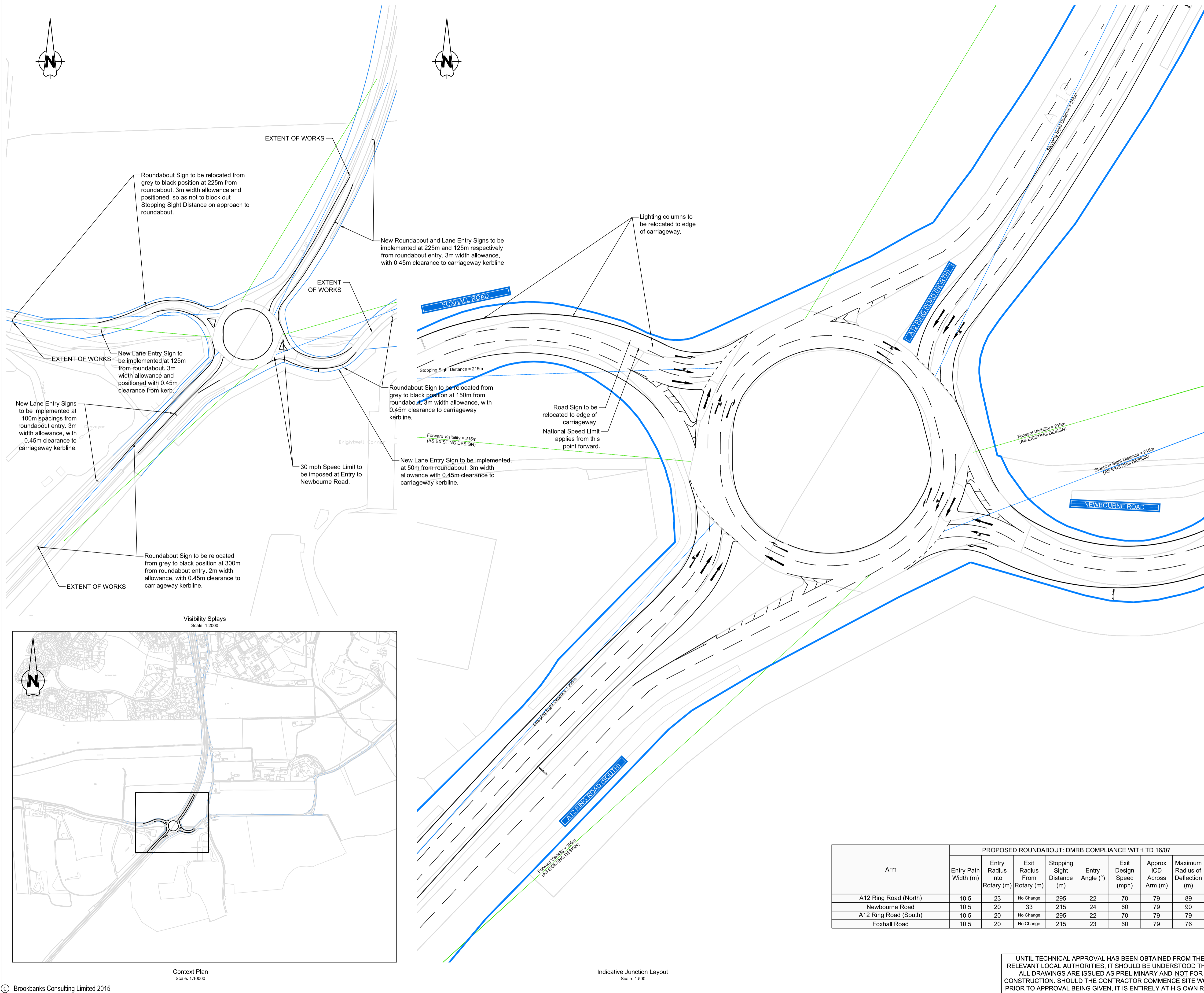
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www.brookbanks.com

Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

Off-site Highway Mitigation:
Foxhall Roundabout Mitigation

Status: Approval Status Date: July 2017
Drawn: MDM Checked: LW Date: 24.07.2017
Scale: As Shown Number: 10391-HL-31 Rev: A
0 10 20 30 40 50
METRES



Visibility Spays
Scale: 1:2000

Context Plan
Scale: 1:10000

Indicative Junction Layout
Scale: 1:500

Arm	PROPOSED ROUNDABOUT: DMRB COMPLIANCE WITH TD 16/07							
	Entry Path Width (m)	Entry Radius Into Rotary (m)	Exit Radius From Rotary (m)	Stopping Sight Distance (m)	Entry Angle (°)	Exit Design Speed (mph)	Approx ICD Across Arm (m)	Maximum Radius of Deflection (m)
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- First Issue - - - 25.07.17

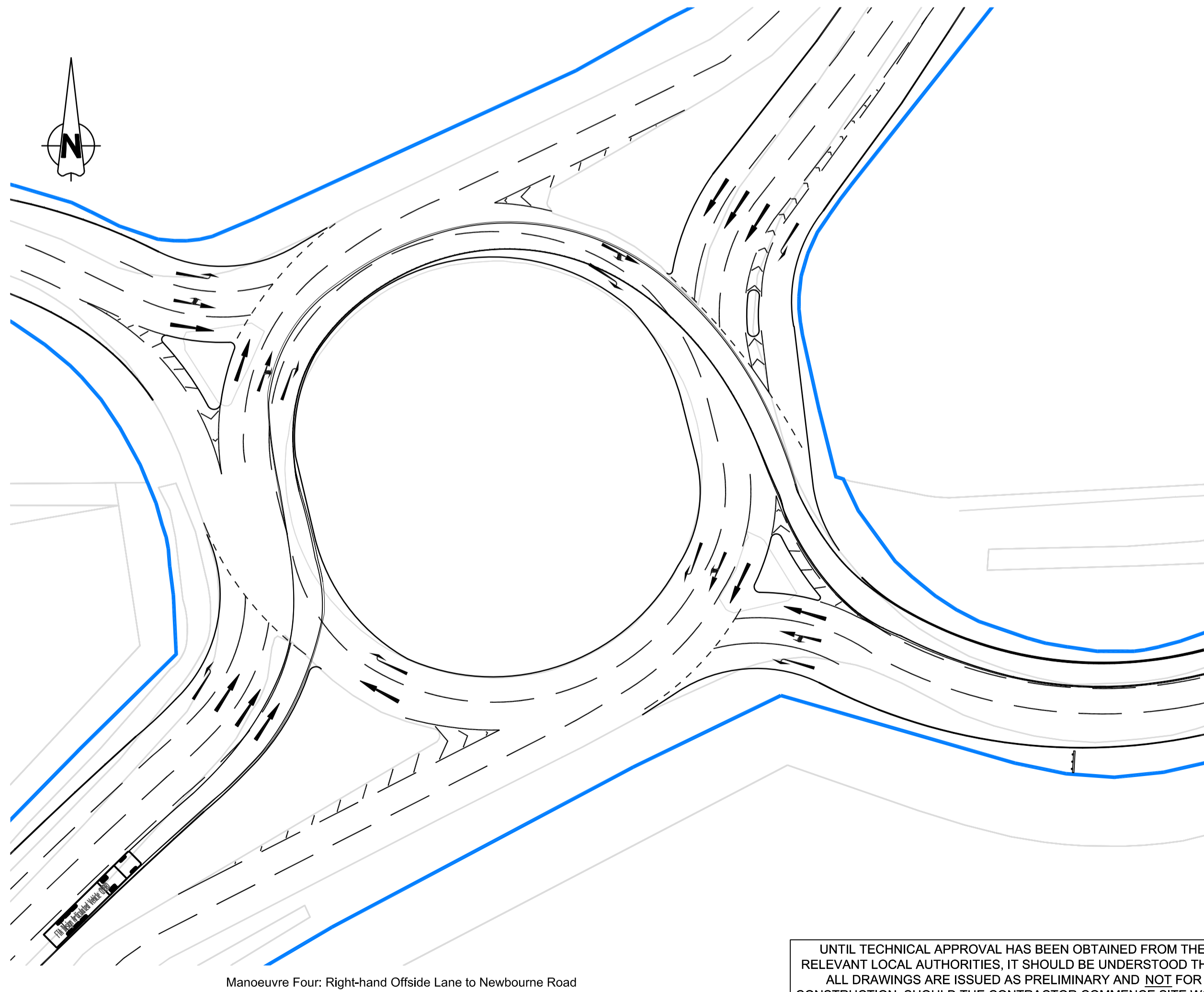
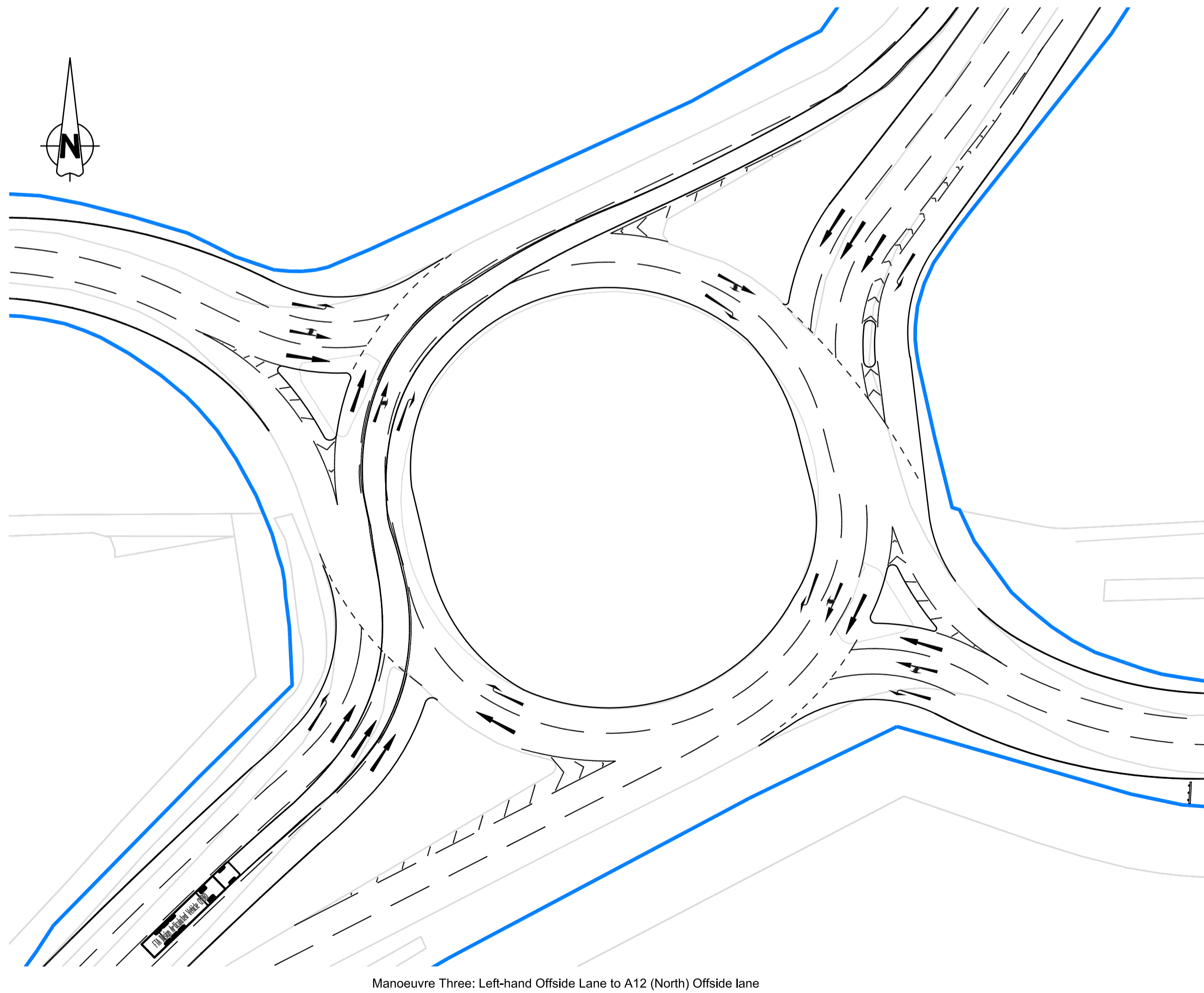
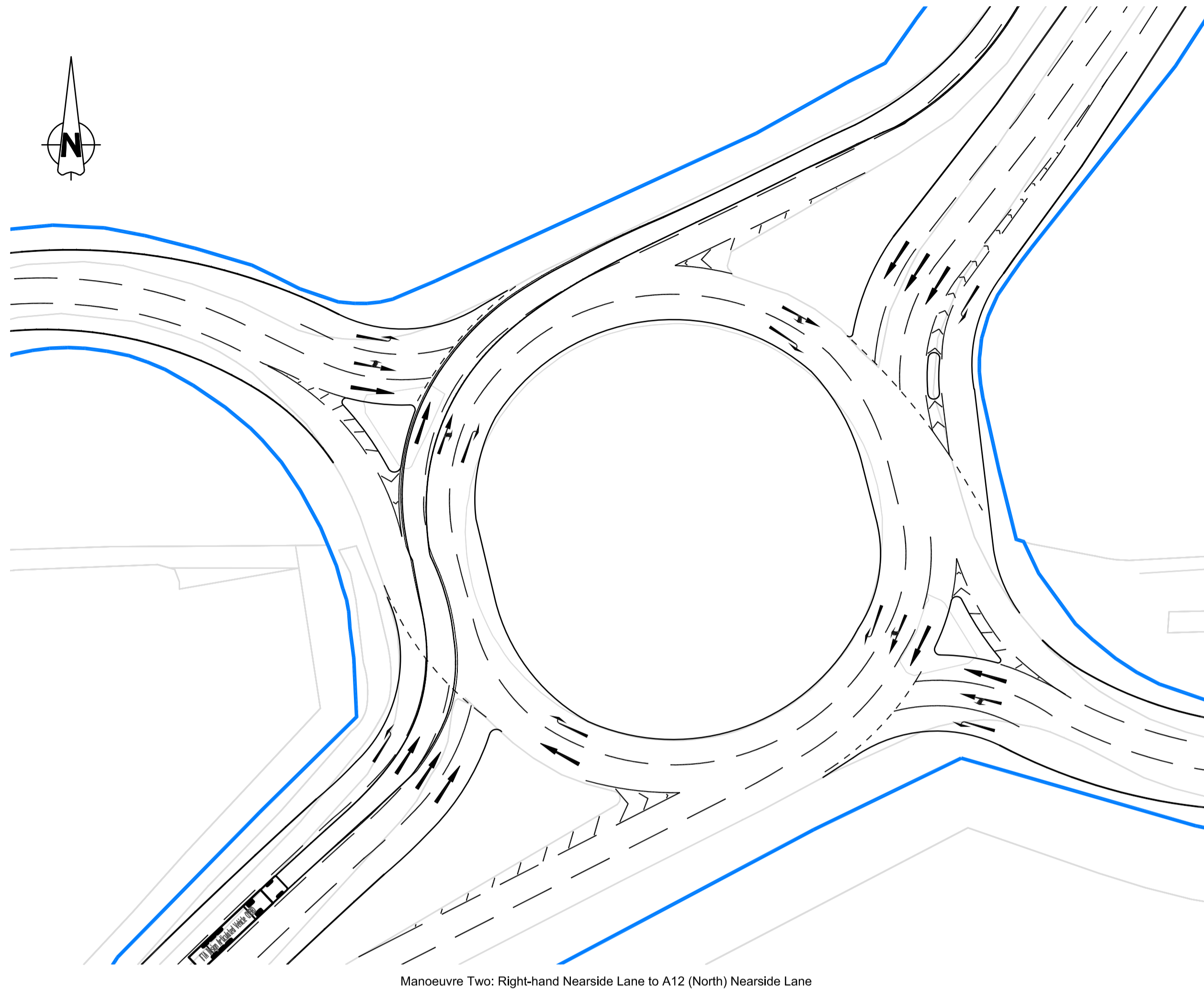
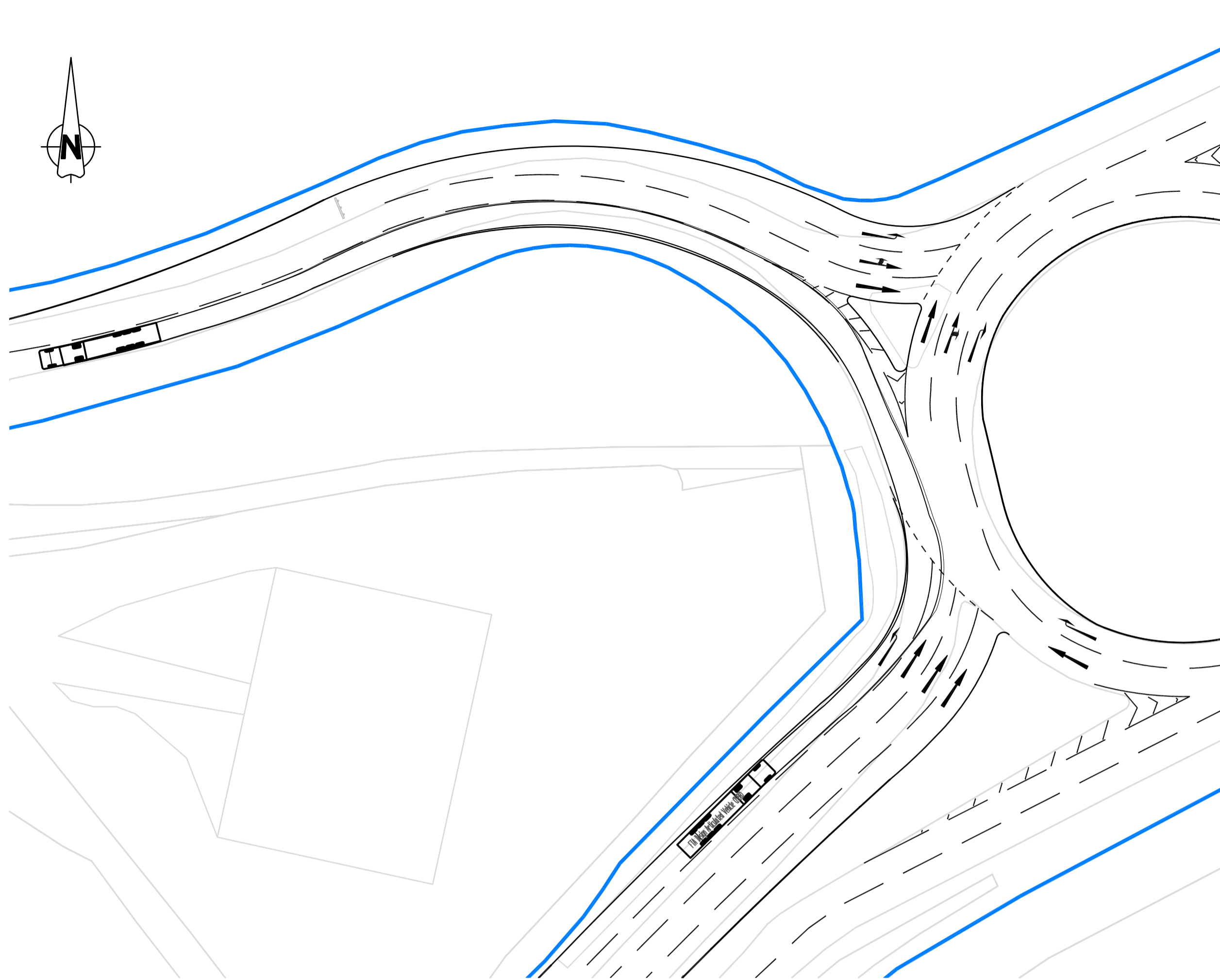
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Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

Alternative Off-site Mitigation:
Foxhall Roundabout Mitigation
A12(S) 3 lanes; A12(N) 3 lanes

Status	Approval		Status Date	July 2017	
Drawn	MDM	Checked	LW	Date	25.07.2017
Scale	As Shown	Number	10391-HL-33	Rev	A
0 10 20 30 40 50 METRES					



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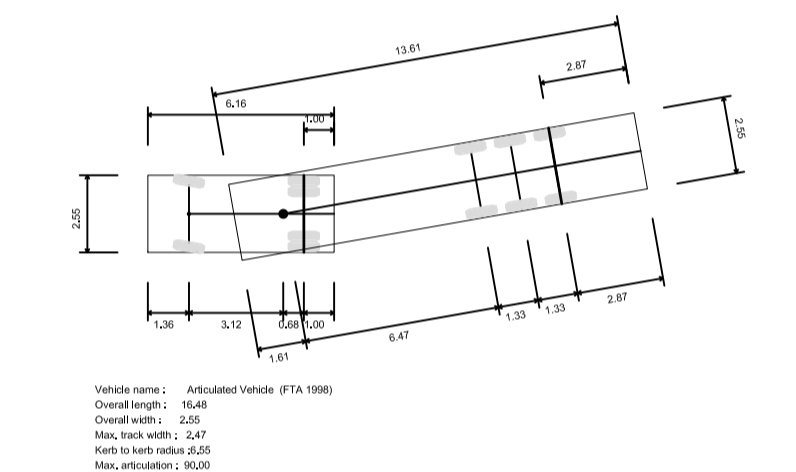
- 1) Overhead and underground services
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KEY:

— Highway Boundary



Articulated Lorry Dimensions and Details
Scale: 1: 250

- First Issue	-	-	-	12.09.17
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Carlyle Land Ltd and
Commercial Estates Group

Land South and East of
Adastral Park, Ipswich

Off-site Highway Mitigation: Foxhall Roundabout Mitigation Swept Paths from A12 (South)

Status		Status Date	
Approval		September 2017	
Drawn	Checked	Date	
MDM	LW	12.09.2017	
Scale	Number	Rev	
1:500	10391-HL-35	-	

Adastral Park, Ipswich : Offsite Highway Mitigation to A12 / Barrack Square / Eagle Way Roundabout and Gloster Road / Barrack Square Priority Junction

Technical Note : Designer's Response to Road Safety Audits at Stage 1

14th September 2017

1 Introduction

Brookbanks Consulting Limited (BCL) is commissioned by Commercial Estates Group (CEG) Ltd to provide technical advice on viability and delivery on a proposed mixed use development at Adastral Park, Martlesham Heath, Suffolk. A Transport Assessment has been produced that has assessed the potential implications. A range of highway interventions has been subsequently identified.

For the Outline Planning Application, the following access strategy was offered:

- Traffic Signals Access off the A12 Dual Carriageway;
- Two simple priority junction accesses off Ipswich Road;
- Simple priority junction access off Gloster Road through the North-west Quadrant.

The Transport Assessment also identified that off-site highway mitigation measures were necessary at the following locations:

- A14 / A12 / A1156 Interchange;
- A12 / Newbourne Rd / Foxhall Road Roundabout;
- A12 / Barrack Square / Eagle Way Roundabout and Gloster Road / Barrack Square Priority Junction;
- A12 / Anson Road / Eagle Way Roundabout;
- A12 / A1214 Roundabout;
- A1189 Heath Road / Foxhall Road Roundabout;
- A1189 Bixley Road / A1156 Felixstowe Road Bixley Roundabout;
- A1214 / A1189 Gyratory Junction.

All design options, at the request of Suffolk County Council, have been subject to a Stage 1 Road Safety Audit. This note sets out the findings of the audit for the A12 / Barrack Square / Eagle Way Roundabout and Gloster Road / Barrack Square Priority Junction together with a designers response.

2 Designer's Response

The Designers Response should be read in conjunction with the Road Safety Audit (ref SESL1731) as attached in Appendix A and revised Drawing No: 10391-HL-23E, 10391-HL-36 and 10391-HL-37 as attached in Appendix B.

Problem 1

Problem: Location: A12 north and southbound approaches.

Summary: Confusing lane markings could result in lane change accidents. All 3 lanes are marked as ahead lanes. However, the offside lane is actually a right turn only lane, and as the default offside lane from the south and possibly also from the north (the tie-in is beyond the drawing extents) this is likely to result in lane changes on approach and also possibly last-minute on the circulatory carriageway itself when drivers are suddenly presented with a right turn arrow.

Recommendation: Amend the approach lane lining so that the offside lanes allow ahead movements, with right turn lanes developing from these. If this is not done, provide significant suitable advance signing advising drivers of the lane destinations at detailed design.

BCL Response: *The lanes cannot be amended so that the off-side lanes allow ahead movements as for this to be safe there would need to be three lanes on the opposite exit. Right-turn arrows are prohibited on entry to roundabouts in accordance with TD 16/07 Paragraph 8.28. Therefore lane destination signs will be provided, the design of which will be discussed at detailed design stage.*

Problem 2

Location: Barrack Square / Gloster Road

Summary: Layout of junction could lead to lane change and shunt accidents. The default lane on approach to the A12 is also the right turn lane into Gloster Road. Drivers may assume that any right turn indicators shown are for the A12 roundabout and the vehicle ahead may stop unexpectedly to turn into Gloster Road. It will also mean that drivers held up by right turners may change lane at this junction, risking conflict, but may also change lane past Gloster Road/on the circulatory carriageway as this lane, whilst marked with an ahead arrow, is actually a right turn only lane.

Recommendation: Amend the lining on this arm to ensure that the default lane is not the one for turning right into Gloster Road/right turn only lane at the roundabout. A separate area should be made available for right turners into Gloster Road with a traffic island on the northwesternmost side to ensure drivers do not misuse this area to access the roundabout.

BCL Response: *There is not sufficient space to provide an additional right-turning lane. Therefore this lane has been provided with Ahead/Right-turn Arrows on approach to Gloster Road and then ahead arrows on approach to the roundabout.*

Problem 3

Location: Southeast and southwest quadrant of circulatory carriageway.

Summary: Risk of sideswipe accidents. The layout indicates a very narrow centre lane on the southeast quadrant and a risk of the nearside lane not being wide enough for the radius required to be traversed on the southwest quadrant from the A12 southern arm.

Recommendation: Carry out swept path analysis to ensure that all vehicles can travel within the intended lanes and make adjustments as required.

BCL Response: *Swept path analysis has been carried out for all the possible manoeuvres across the south-east and south-west quadrants of the roundabout. These are indicated on drawings 10391-HL-36 and 10391-HL-37 in Appendix B.*

3 Limitations

Third party information has been used in the preparation of this report, which Brookbanks Consulting Ltd, by necessity assumes is correct at the time of writing. While all reasonable checks have been made on data sources and the accuracy of data, Brookbanks Consulting Ltd accepts no liability for same.

The benefits of this report are provided to Carlyle Land Ltd and Commercial Estates Group for the proposed development on Land at Adastral Park.

Brookbanks Consulting Ltd excludes third party rights for the information contained in the report.

Safety Engineering Services Ltd

Land South and East of Adastral Park, Ipswich
**Adastral Park Roundabout
and Gloster Road Mitigation**

Stage 1 Road Safety Audit

Stage 1 Road Safety Audit

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2 ROAD SAFETY AUDIT FINDINGS 2

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Report Number	Client Reference	Report Status
SESL1731	10391	FINAL

1 **INTRODUCTION**

This report presents the findings of a Road Safety Audit carried out on the A12 / Gloster Road Roundabout off-site highway mitigation works, proposed as part of a suite of works to enable site access to land to the south and east of Adastral Park, Ipswich, at the request of Brookbanks Consulting Ltd. The development will consist of up to 2000 dwellings, local centres, with facilities to serve recreation and education.

The audit was carried out by the following:

S Hancock	Road Safety Audit Team Leader Safety Engineering Services Ltd
D Ramsden Certificate of Competency gained in June 2015	Road Safety Audit Team Member Safety Engineering Services Ltd

The audit took place on Wednesday 13 September 2017 and comprised a desktop study of the plans provided and a drive and walk through of the site by both team members. During the site visit, the weather was raining and the road surfaces were wet. Traffic at the time of the audit was moderate to heavy.

A list of drawings and documents provided for the purpose of audit is in Appendix A. The locations of any problems have been identified on an annotated drawing in Appendix B.

The main terms of reference of the audit are as described in HD19/15. The 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.

The proposals consist of measures at the Adastral Park Roundabout to increase capacity and amendments to the adjacent priority junction with Gloster Road.

2 ROAD SAFETY AUDIT FINDINGS

2.1 PROBLEM

Location: A12 north and southbound approaches.

Summary: Confusing lane markings could result in lane change accidents.

All 3 lanes are marked as ahead lanes. However, the offside lane is actually a right turn only lane, and as the default offside lane from the south and possibly also from the north (the tie-in is beyond the drawing extents) this is likely to result in lane changes on approach and also possibly last-minute on the circulatory carriageway itself when drivers are suddenly presented with a right turn arrow.

RECOMMENDATION

Amend the approach lane lining so that the offside lanes allow ahead movements, with right turn lanes developing from these. If this is not done, provide significant suitable advance signing advising drivers of the lane destinations at detailed design.

2.2 PROBLEM

Location: Barrack Square / Gloster Road

Summary: Layout of junction could lead to lane change and shunt accidents.

The default lane on approach to the A12 is also the right turn lane into Gloster Road. Drivers may assume that any right turn indicators shown are for the A12 roundabout and the vehicle ahead may stop unexpectedly to turn into Gloster Road. It will also mean that drivers held up by right turners may change lane at this junction, risking conflict, but may also change lane past Gloster Road/on the circulatory carriageway as this lane, whilst marked with an ahead arrow, is actually a right turn only lane.

RECOMMENDATION

Amend the lining on this arm to ensure that the default lane is not the one for turning right into Gloster Road/right turn only lane at the roundabout. A separate area should be made available for right turners into Gloster Road with a traffic island on the northwesternmost side to ensure drivers do not misuse this area to access the roundabout.