



Appendix D – Junction Layout Drawings

## Technical Note for Design Strategy

**Project Name:** Land South and East of Adastral Park, Ipswich, Suffolk  
**Project Number:** 10391  
**Client Name:** Carlyle Land Ltd and Commercial Estates Group  
**Note Number:** 02  
**Date:** June 2017  
**Prepared By:** Matthew Moss  
**Checked By:** Lee Witts  
**Subject/Topic:** Proposed Traffic Signals Access off A12 Dual Carriageway

Item	Subject
1	<p>Brookbanks Consulting Limited is appointed by CEG to provide transportation advice for a proposed mixed-use development on land at Adastral Park near Ipswich in Suffolk. The aim of this roundabout design is to provide an access from the west of the proposed development via the A12 Dual Carriageway.</p> <p>This note should be read in conjunction with drawing no: 10391-HL-02. The existing length of the A12 Dual Carriageway affected by this scheme is:</p> <ul style="list-style-type: none"><li>• Approximate carriageway and footway dimensions: 2 No. 7.3m Carriageways, 1 No. 5m Central Reservation, 1 No. 2m footway on north-eastern edge with 1.5m verge.</li><li>• Local Vegetation/Existing Constraints: Ministry of Defence Training Base to north-east of development site. Laybys on northbound and southbound carriageways to be removed as agreed with responsible highway authority. Artificial Embankment on east side of dual carriageway to be partially removed to accommodate roundabout.</li><li>• Local Speed Limits: 70 mph (120 kph), however a speed reduction to 50 mph is required if pedestrian/Pegasus crossings are to be implemented.</li><li>• Street Lighting: None.</li><li>• Local water courses that may constrain the site: None.</li><li>• Local Accesses that must be maintained: Existing Bridleway Alignment to be maintained.</li></ul> <p>No discussions have taken place with the Local Authority or Highways England at the time of writing.</p> <div></div> <p><b>Figure 1:</b> Northbound Carriageway looking North</p> <p><b>Figure 2:</b> Northbound Carriageway looking South</p>



**Figure 3:** Southbound Carriageway looking North



**Figure 4:** Southbound Carriageway looking South

## 2 Design Standards:

The design parameters of the proposed junction have been determined following a review of the following documents:-

- Design Manual for Roads and Bridges:
  - TA 23/81: Junctions and Accesses – Determination of Size of Roundabouts and Major-Minor Junctions;
  - TA 90/05: The Geometric Design of Pedestrian, Cycle and Equestrian Routes;
  - TA 91/05: Provision for Non-Motorised Users;
  - TD 9/93: Highway Link Design;
  - TD 50/04: The Geometric Layout of Signal-controlled Junctions and Signalized Roundabouts
- LTN 2/95: Pedestrian Crossings;
- Traffic Signs Manual Design Standard: Chapter 5 Road Markings

## 3 Site Surveys:

No surveys were carried out for the site at the time of writing.

## 4 2D Design Elements:

- Northern Arm (Major):                      A12 Ring Road (North)                      70 mph
- Eastern Arm (Minor):                      Adastral Park Road                      30 mph
- Southern Arm (Major):                      A12 Ring Road (South)                      70 mph
  
- Design Speed for the Major Road = 120 kph on Departure; 85 kph on Approach (TD 9/93, Table 2);
- Design Speed for the Minor Road = 60 kph (TD 9/93, Table 2);
- Desirable Minimum Stopping Sight Distance Major Road = 295m on Departure, 160m on Approach (TD 9/93, Table 3. TD 50/04 Item 2.7.);
- Desirable Minimum Stopping Site Distance Minor Road = 90m (TD 9/93, Table 3. TD 50/04 Item 2.7.);
- Inter-visibility Zone for a traffic signalised junction of up to 70m (TD 50/04 Item 2.10, Figure 2/2 and 2/3).

	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width into Junction (m)	Number of Lanes into Junction	Exit Lane Width from Junction (m)	Number of Lanes from Junction	Stopping Sight Distance (m)	Corner Radii to Left (m)	Exit Design Speed (mph)	Approx. Intervisibility Splay across Arm (m)
A12 Ring Road (North)	6.8	2	3.6	2	160	15	50	51
A12 Ring Road (South)	6.7	2	6.9	2	160	N/A	50	46
Adastral Park Road	7.0	2	4.5	1	90	15	30	70

#### 5 **Buffer Zone**

It is recommended in LTN 1/12 that shared use routes alongside high speed roads (i.e. 85<sup>th</sup> percentile speed of 35mph or more), user comfort and safety can be improved by maximising the separation distance between the carriageway and the shared use facility to create a buffer zone.

Furthermore, TA 90/05 states that it is desirable to provide physical separation between Non-Motorised User (NMU) routes and carriageways. Item 7.22 states that the recommended preferred separation between NMU routes and the carriageway is 1.5m, with an acceptable separation of 0.5m. There should be no street furniture or vegetation (except grass) within the separation distance.

Therefore, a buffer zone of 1.5m will be provided. This buffer zone has been formed by a 1.5m continuous grass verge and the total width of footway area is 2m.

#### 6 **Relation to Existing Access Points**

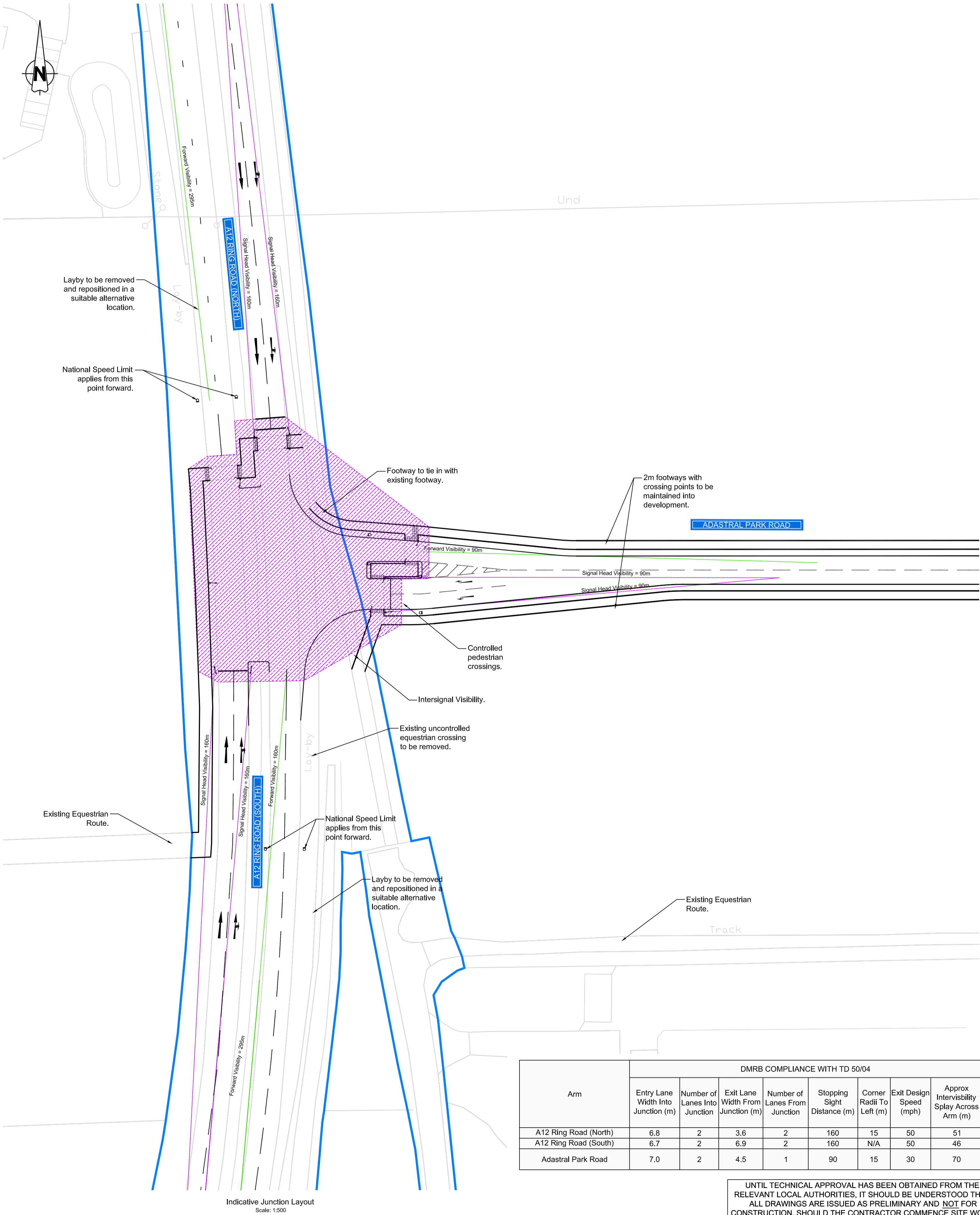
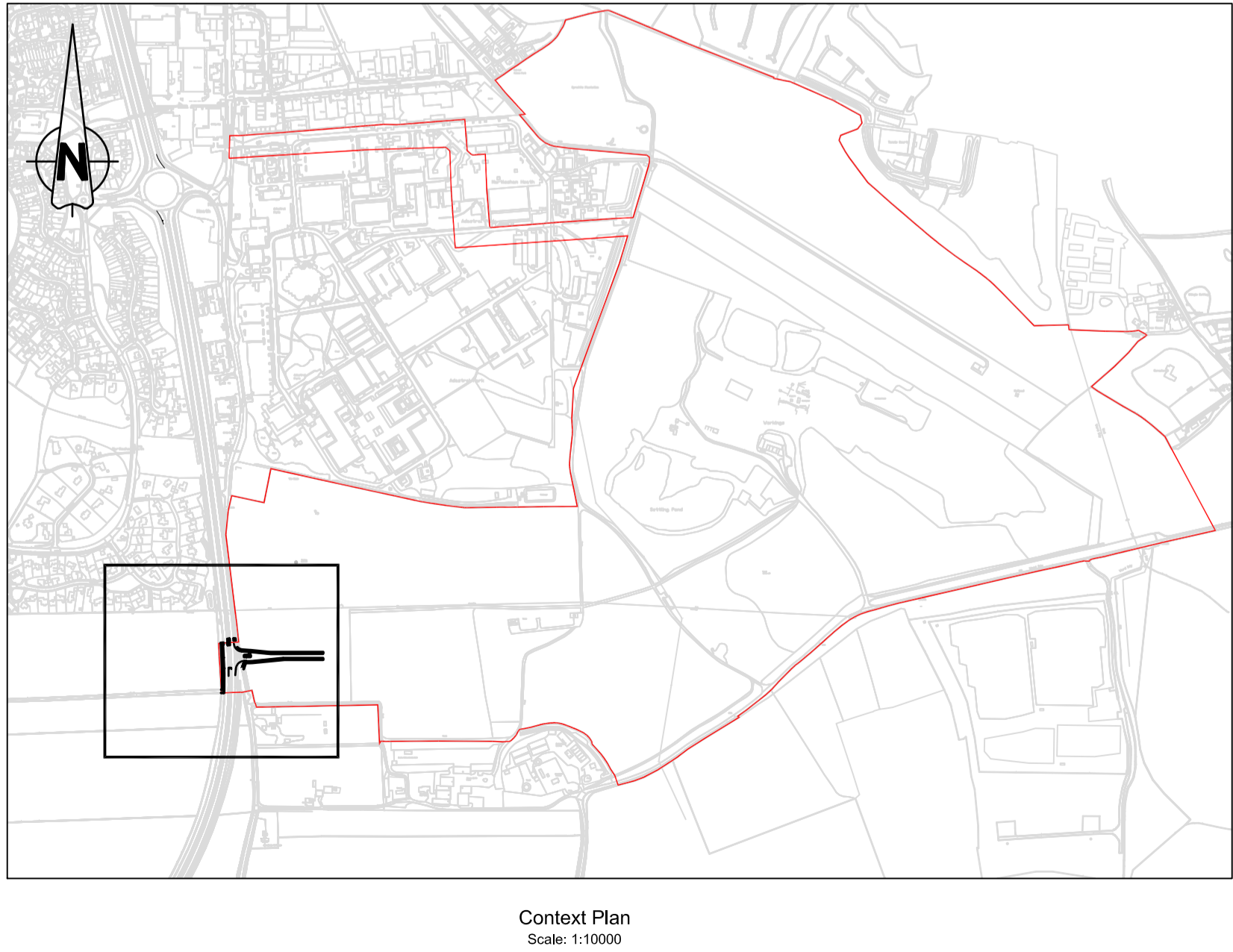
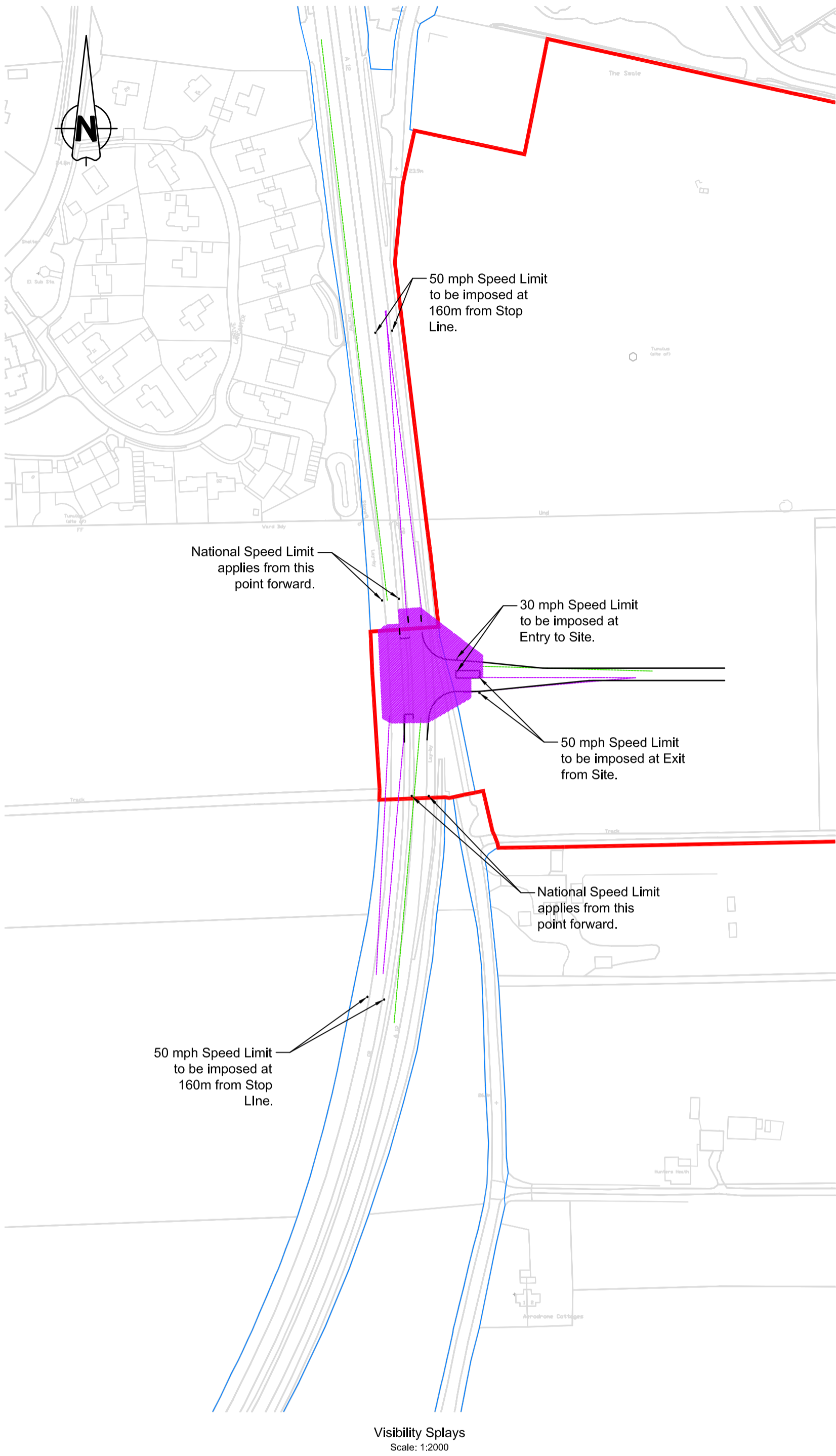
The proposed roundabout has been located near an existing roundabout with Newbourne Road and Foxhall Way to the south. It is located an appropriate distance from this roundabout. Any traffic movements undertaken into or out of these existing access points are not restricted by the proposed roundabout.

#### 7 **Traffic Signs**

Advance Direction Signs (ADS) shall be provided on the approaches to the roundabout, as well as Flag type directional signs on the exit arms as prescribed in the Traffic Signs Regulations and General Directions (TRSGD). Care has been taken with the positioning and the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (Mandatory Item 8.2).

Guidance on the design of directional traffic signs is given in the Traffic Signs Manual (Chapter 7) and LTN 1/94 – 'The Design and Use of Directional Informatory Signs', particularly Appendix A. The 'x' heights for these directional sign have been informed by the 70 mph speed limit being imposed on the highway.

	<p><b>Road Markings</b></p> <p>The existing road markings along the A12 Dual Carriageway have been provided in response to the lowered speed limit of 50 mph. The proposed speed limit along Adastral Park Road (30 mph) has required the road markings to be designed to reflect this lower limit. All road markings have been informed by Traffic Signs Manual Chapter 5.</p>
8	<p><b>Highway Boundary</b></p> <p>The location of the existing highway boundary has been determined using plans provided by Suffolk County Council which has been transferred onto survey data.</p> <p>It has been confirmed by Suffolk County Council that the Highway Boundary is located as indicated on the drawings.</p> <p>The design of this roundabout requires additional carriageway width in order to accommodate the infrastructure. The roundabout will be constructed slightly off line to the existing carriageway so that no works encroach onto 3<sup>rd</sup> party land not within the control of the Developer or Highway Authority.</p>
9	<p><b>Street Lighting</b></p> <p>The A12 Ring Road, at the location of the proposed junction does not have a system of street lighting. However, the proposed roundabout and the Development Access Road is recommended to be illuminated by a system of street lighting. The extent and classification of lighting will be determined by Suffolk County Council.</p>



Arm	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width Into Junction (m)	Number of Lanes Into Junction	Exit Lane Width From Junction (m)	Number of Lanes From Junction	Stopping Sight Distance (m)	Corner Radii To Left (m)	Exit Design Speed (mph)	Approx. Intervisibility Splay Across Arm (m)
A12 Ring Road (North)	6.8	2	3.6	2	160	15	50	51
A12 Ring Road (South)	6.7	2	6.9	2	160	N/A	50	46
Adastral Park Road	7.0	2	4.5	1	90	15	30	70

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:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
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.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
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
  - TA 90/05: The Geometric Design of Pedestrian, Cycle and Equestrian Routes;
  - TA 91/05: Provision for Non-Motorised Users;
  - TD 9/93: Highway Link Design;
  - TD 50/04: The Geometric Layout of Signal-controlled Junctions and Signalized Roundabouts;
  - Traffic Advisory Leaflet 3/03: Equestrian Crossings.

KEY:

- Site Boundary
- Assumed Highway Boundary
- Signal Head Visibility
- Traffic Signal Head
- Pedestrian Signal Head with Push Button
- Equestrian Signal Head
- Push Button for Equestrian Signal Head
- Intersignal Visibility
- Forward Visibility on Exit
- Tactile Paving

C Improvements to crossing design. MDM LW PAB 14.06.17  
B Amendments as per client requirements. MDM LW PAB 10.03.17  
A Amendments as per client requirements. MDM LW PAB 03.03.17  
- First Issue - - - 11.10.16

**Brookbanks**

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Carlyle Land Ltd and  
Commercial Estates Group



Land South and East of  
Adastral Park, Ipswich

Proposed Western Signalized  
Access off A12 Dual Carriageway

Status			Status Date		
Approval			Oct 2016		
Drawn		Checked	Date		
MDM		LW	11.10.2016		
Scale		Number	Rev		
As Shown		10391-HL-02	C		
<div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div><div>50</div></div>					
METRES					

## Technical Note for Design Strategy

**Project Name:** Land South and East of Adastral Park, Ipswich, Suffolk  
**Project Number:** 10391  
**Client Name:** Carlyle Land Ltd and Commercial Estates Group  
**Note Number:** 03  
**Date:** June 2017  
**Prepared By:** Matthew Moss  
**Checked By:** Lee Witts  
**Subject/Topic:** Proposed Priority Junction Accesses off Ipswich Road

Item	Subject
1	<p>Brookbanks Consulting Limited is appointed by CEG to provide transportation advice for a proposed mixed-use development on land at Adastral Park near Ipswich in Suffolk. The aim of these priority junction designs is to provide accesses from the south of the proposed development via Ipswich Road.</p> <p>This note should be read in conjunction with drawing nos: 10391-HL-04C and 10391-HL-05D. The existing length of the A12 Dual Carriageway affected by this scheme is:</p> <ul style="list-style-type: none"><li>• Approximate carriageway and footway dimensions: Average 5.5m Carriageway.</li><li>• Local Vegetation/Existing Constraints: Ditches in immediate vicinity of road.</li><li>• Local Speed Limits: 60 mph (100 kph), however a speed reduction to 40 mph has been provisionally agreed.</li><li>• Street Lighting: None.</li><li>• Local water courses that may constrain the site: None.</li><li>• Local Accesses that must be maintained: None.</li></ul> <p>No discussions have taken place with the Local Authority or Highways England at the time of writing.</p> <div></div> <p><b>Figure 1:</b> Ipswich Road (West Site) looking East</p> <p><b>Figure 2:</b> Ipswich Road (West Site) looking West</p>



**Figure 3:** Ipswich Road (East Site) looking East



**Figure 4:** Ipswich Road (East Site) looking West

## 2 Design Standards:

The design parameters of the proposed junction have been determined following a review of the following documents:-

- Design Manual for Roads and Bridges:
  - TD 9/93: Highway Link Design;
  - TD 42/95: Geometric Design of Major-Minor Priority Junctions.
- Manual for Streets;
- Traffic Signs Manual Design Standard: Chapter 5 Road Markings

## 3 Site Surveys:

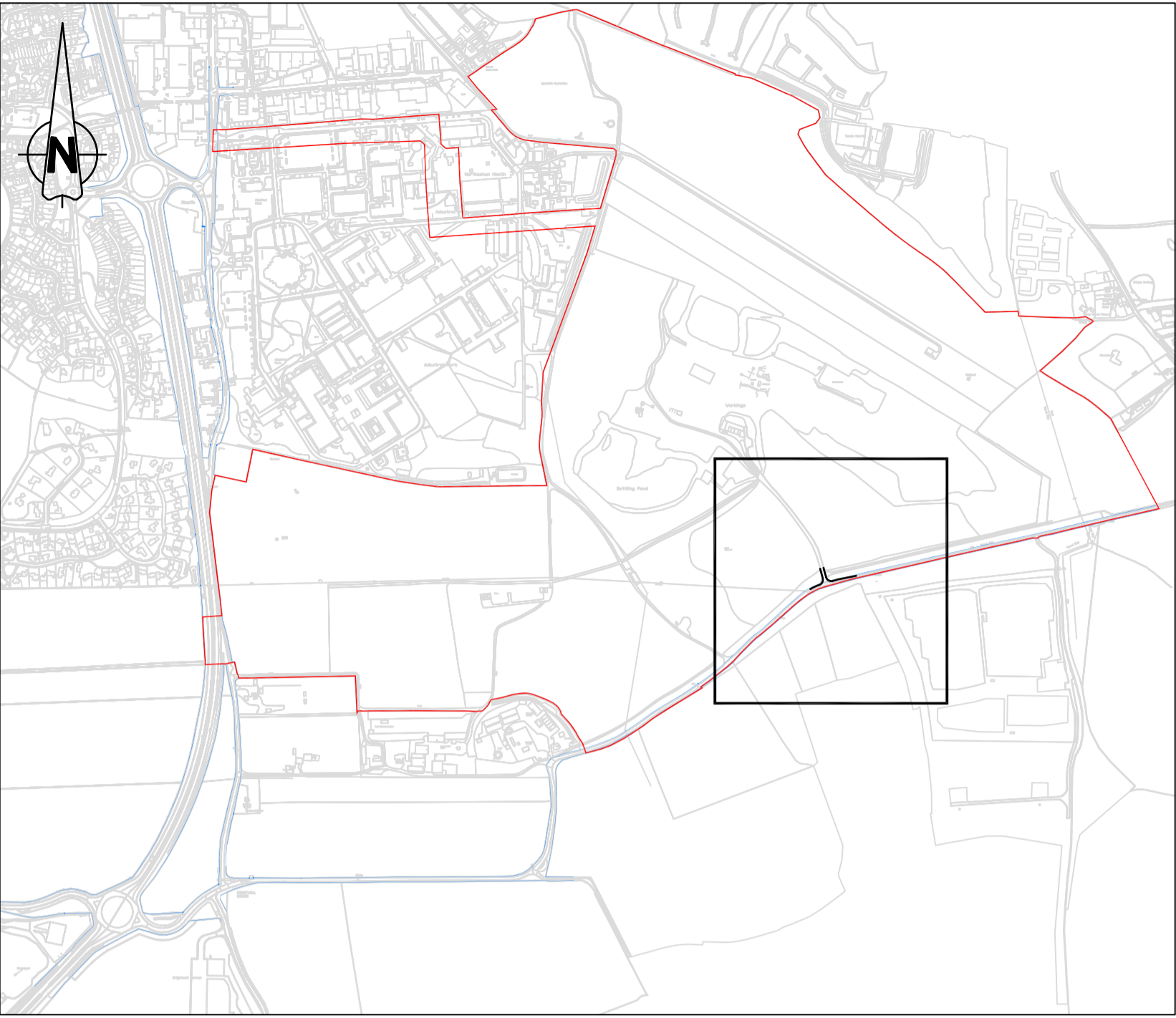
No surveys were carried out for the site at the time of writing.

## 4 2D Design Elements:

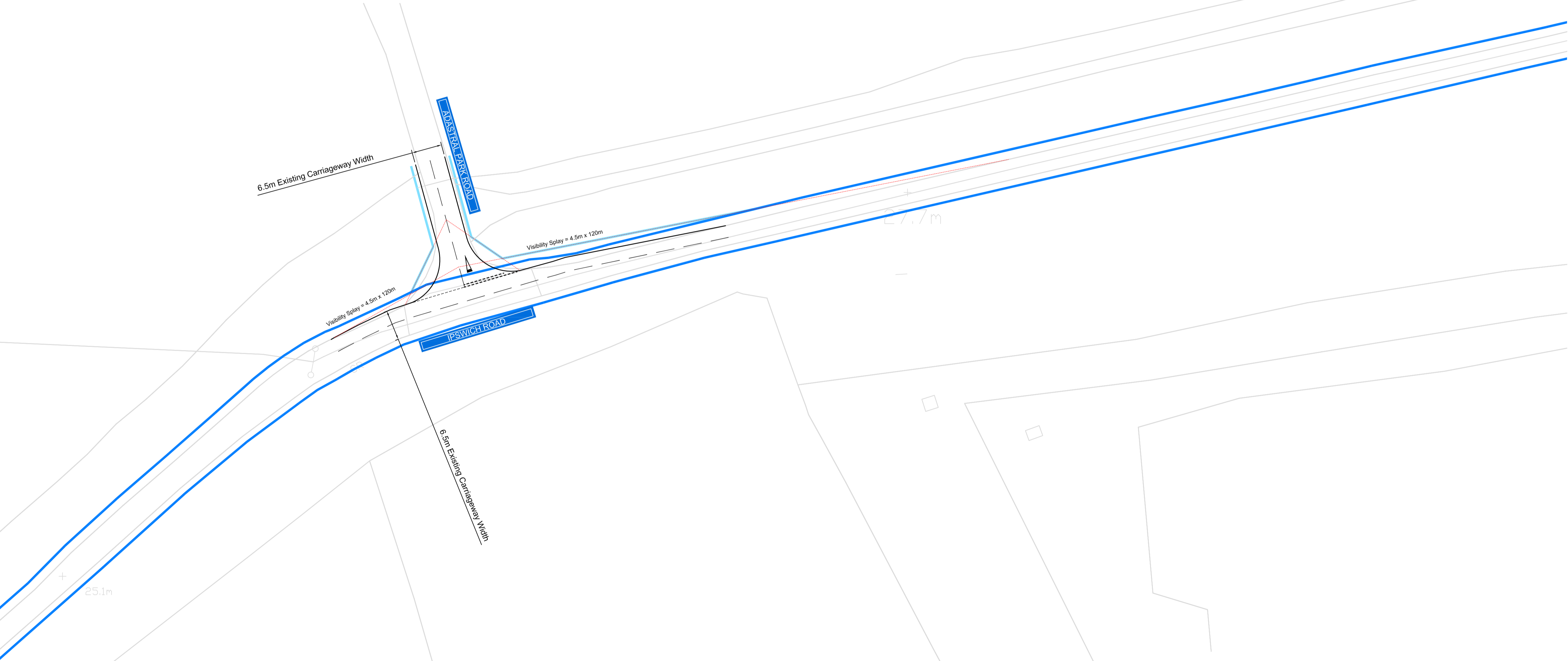
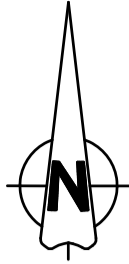
- Western Arm (Major): Ipswich Road (West) 60 mph
- Northern Arm (Minor): Adastral Park Road 30 mph
- Eastern Southern Arm (Major): Ipswich Road (East) 60 mph
- A Traffic Regulation Order is needed to be put in place to reduce the speed limit to 30 mph;
- Design Speed for the Major Road = 48 kph (Manual for Streets: Table 7.1);
- Design Speed for the Minor Road = 48 kph (Manual for Streets: Table 7.1);

	DMRB COMPLIANCE WITH TD 42/95					
	Corner Radii (m)	Lane Widths through Junction (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration Length (m)
Ipswich Road (West)	10	3.25	N/A	N/A	30	N/A
Adastral Park Road	10	3.25	N/A	N/A	30	N/A
Ipswich Road (East)	N/A	3.25	N/A	N/A	30	N/A

7	<p><b>Traffic Signs</b></p> <p>Advance Direction Signs (ADS) shall be provided on the approaches to the priority junction, as well as Flag type directional signs on the exit arms as prescribed in the Traffic Signs Regulations and General Directions (TRSGD). Care has been taken with the positioning and the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (Mandatory Item 8.2).</p> <p>Guidance on the design of directional traffic signs is given in the Traffic Signs Manual (Chapter 7) and LTN 1/94 – 'The Design and Use of Directional Informatory Signs', particularly Appendix A. The 'x' heights for these directional sign have been informed by the 30 mph speed limit being imposed on the highway.</p> <p><b>Road Markings</b></p> <p>The road markings along Ipswich Road have been provided in response to the lowered speed limit along Ipswich Road of 40 mph. The proposed speed limit along Adastral Park Road (30 mph) has required the road markings to be designed to reflect this lower limit. All road markings have been informed by Traffic Signs Manual Chapter 5.</p>
8	<p><b>Highway Boundary</b></p> <p>The location of the existing highway boundary has been determined using plans provided by Suffolk County Council which has been transferred onto survey data.</p> <p>It has been confirmed by Suffolk County Council that the Highway Boundary is located as indicated on the drawings.</p> <p>The design of these priority junctions requires additional carriageway width in order to accommodate the infrastructure. The priority junctions will be constructed slightly off line to the existing carriageway so that no works encroach onto 3<sup>rd</sup> party land not within the control of the Developer or Highway Authority.</p>
9	<p><b>Street Lighting</b></p> <p>Ipswich Road, at the location of the proposed junction does not have a system of street lighting. However, the proposed Priority Junction and the Development Access Road is recommended to be illuminated by a system of street lighting. The extent and classification of lighting will be determined by Suffolk County Council.</p>



Context Plan  
Scale: 1:10000



Layout of Accesses into Site  
Scale: 1:500

**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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5. The junctions, roundabouts and links have been designed in accordance with the following design standards:
  - TD 9/93: Highway Link Design;
  - TD 42/95: The Geometric Design of Major-Minor Priority Junctions;
  - Manual for Streets;

## KEY:

- Site Boundary
- Anticipated Highway Boundary
- Proposed Highway Boundary for Adoption
- Junction Visibility Splay

C Amendments as per client's requests. MDM LW PAB 10.03.17  
B Update of Speed Limits. MDM LW PAB 14.12.16  
A Update of Speed Limits. MDM LW PAB 09.11.16  
- First Issue - - - 27.10.16

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Carlyle Land Ltd and  
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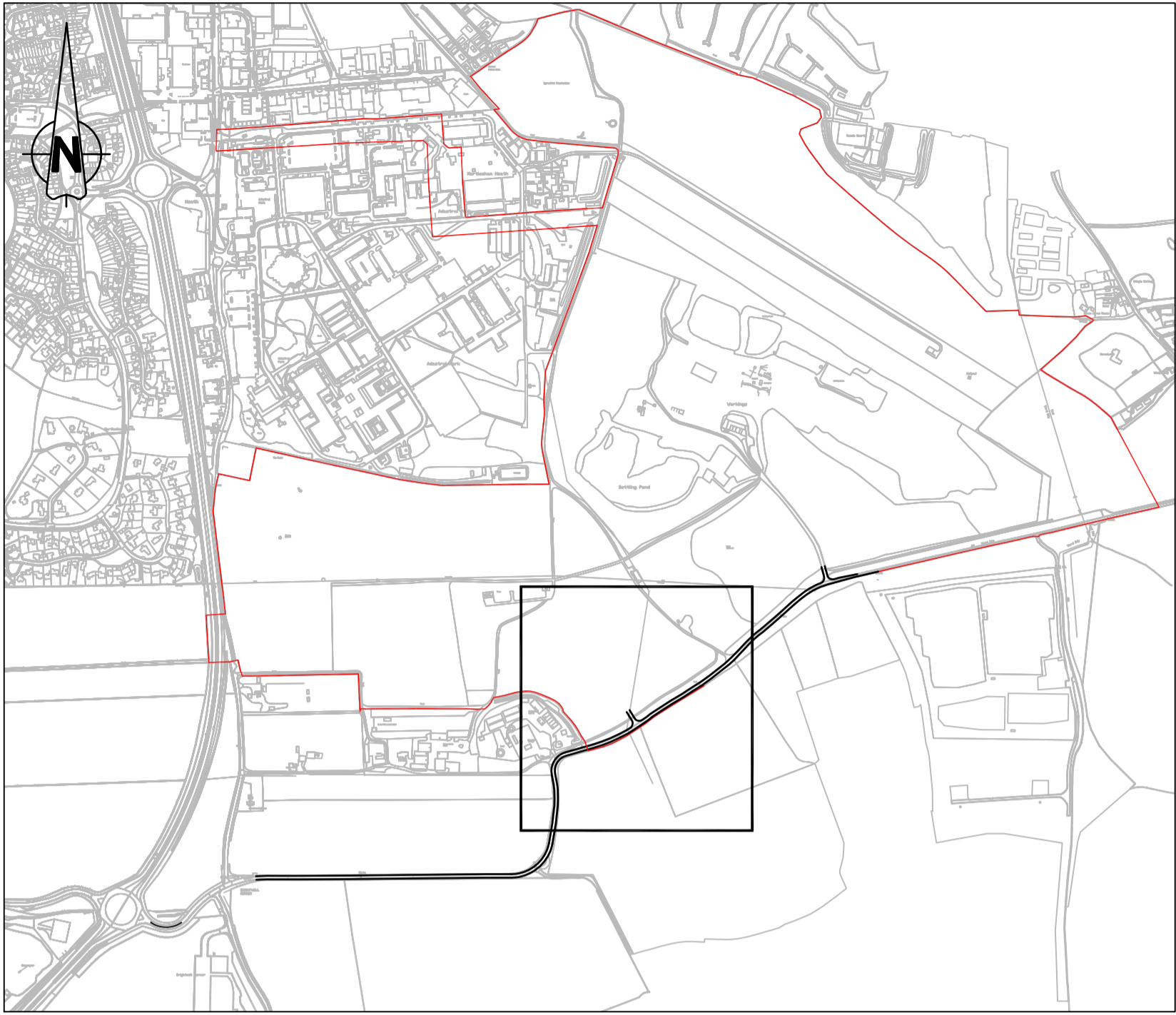
Land South and East of  
Adastral Park, Ipswich

Proposed Priority Junction  
Eastern Access off Ipswich Road

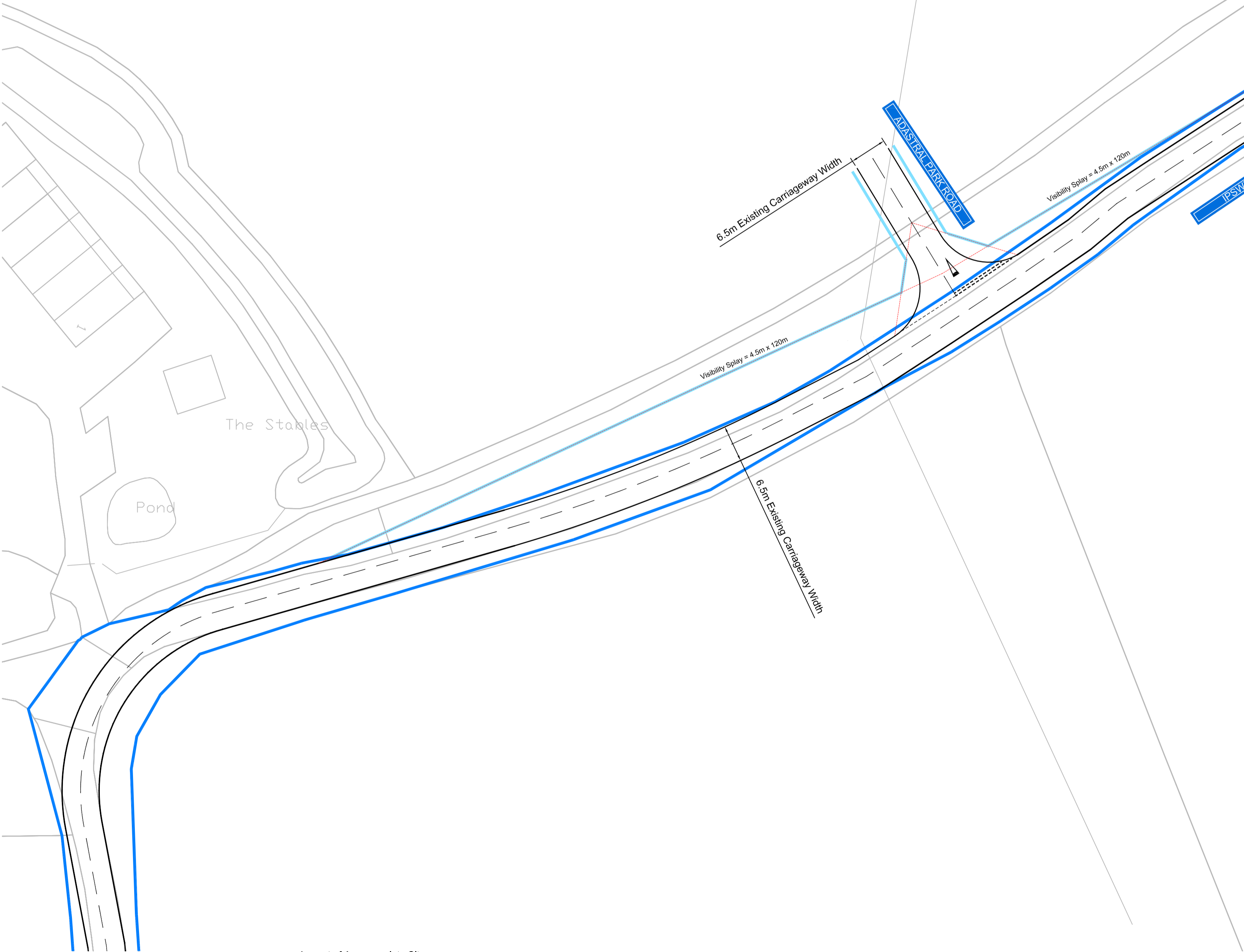
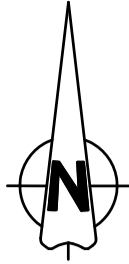
Arm	PROPOSED PRIORITY JUNCTION: DMRB COMPLIANCE WITH TD 42/95					
	Corner Radii to Left (m)	Approach Lane Width (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration (m)
Ipswich Road (West)	10	3.25	N/A	N/A	40	N/A
Adastral Park Road	10	3.25	N/A	N/A	30	N/A
Ipswich Road (East)	N/A	3.25	N/A	N/A	40	N/A

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Status	Approval			Status Date	Oct 2016		
Drawn	MDM	LW		Checked		Date	
Scale	As Shown	10391-HL-04		Number		Rev	
	0	10	20	30	40	50	
	METRES						



Context Plan  
Scale: 1:10000



Layout of Accesses into Site  
Scale: 1:500

**Construction Design and Management (CDM)**  
**Key Residual Risks**  
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  - Manual for Streets;

## KEY:

- Site Boundary
- Anticipated Highway Boundary
- Proposed Highway Boundary for Adoption
- Junction Visibility Splay

D Amendments to avoid trees. MDM LW PAB 06.06.17  
C Amendments as per client's requests. MDM LW PAB 10.03.17  
B Update of Speed Limits. MDM LW PAB 14.12.16  
A Update of Speed Limits. MDM LW PAB 09.11.16  
- First Issue - - - 27.10.16

**Brookbanks**

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Carlyle Land Ltd and  
Commercial Estates Group

Adastral Park  
Ipswich, Suffolk

Proposed Priority Junction  
Western Access off Ipswich Road



Arm	PROPOSED PRIORITY JUNCTION: DMRB COMPLIANCE WITH TD 42/95					
	Corner Radii to Left (m)	Approach Lane Width (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration (m)
Ipswich Road (West)	10	3.25	N/A	N/A	50	N/A
Adastral Park Road	10	3.25	N/A	N/A	30	N/A
Ipswich Road (East)	N/A	3.25	N/A	N/A	50	N/A

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Status			Status Date		
Approval			Oct 2016		
Drawn		Checked	Date		
MDM		LW	27.10.2016		
Scale		Number	Rev		
As Shown		10391-HL-05	D		
<div><div></div><div>01020304050</div><div>METRES</div></div>					

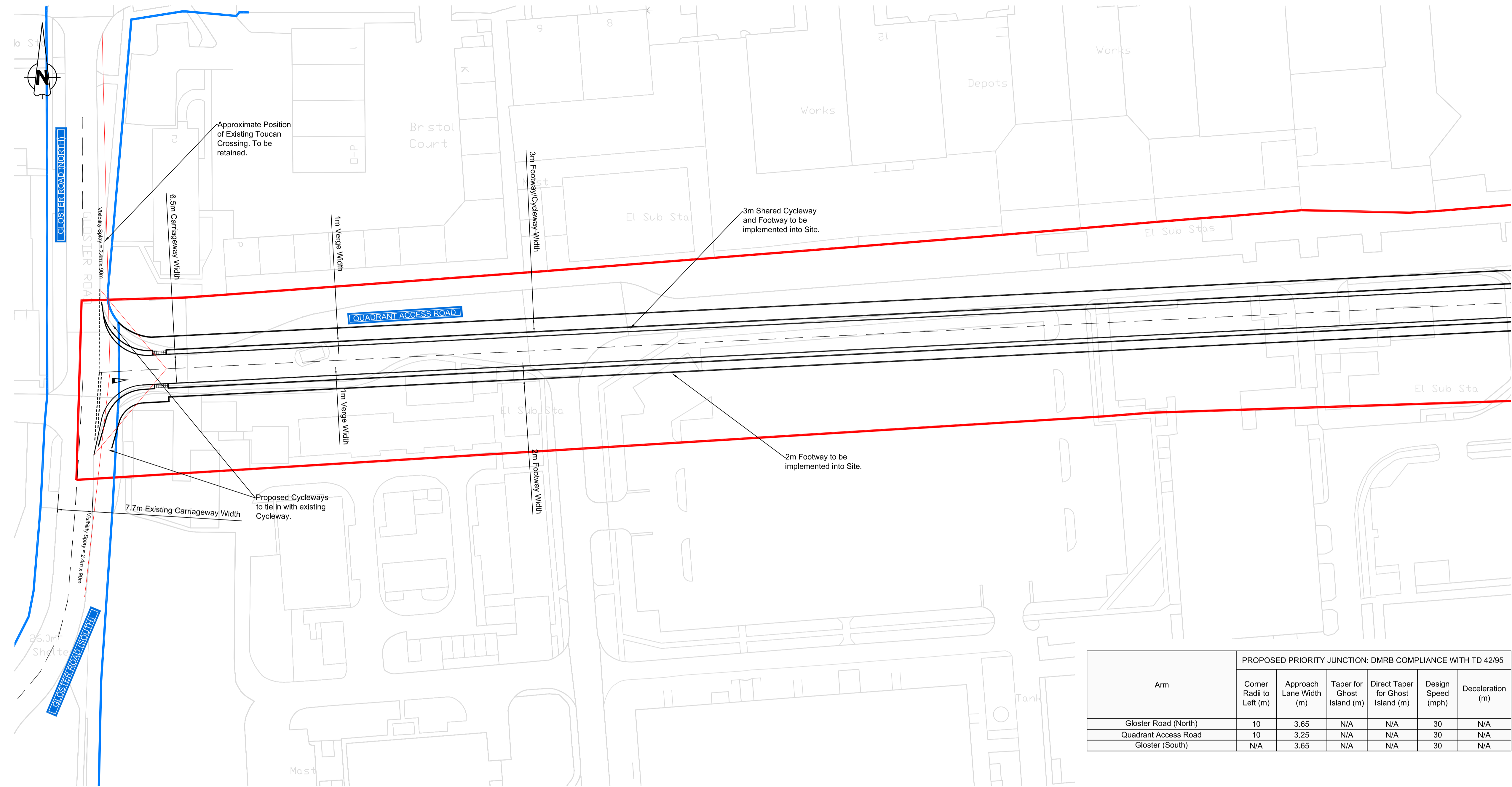
## Technical Note for Design Strategy

**Project Name:** Land South and East of Adastral Park, Ipswich, Suffolk  
**Project Number:** 10391  
**Client Name:** Carlyle Land Ltd and Commercial Estates Group  
**Note Number:** 04  
**Date:** June 2017  
**Prepared By:** Matthew Moss  
**Checked By:** Lee Witts  
**Subject/Topic:** Proposed Priority Junction Access off Gloster Road

Item	Subject
1	<p>Brookbanks Consulting Limited is appointed by CEG to provide transportation advice for a proposed mixed-use development on land at Adastral Park near Ipswich in Suffolk. The aim of this priority junction design is to provide an access from the west of the proposed development via Gloster Road.</p> <p>This note should be read in conjunction with drawing no: 10391-HL-06. The existing length of Gloster Road affected by this scheme is:</p> <ul style="list-style-type: none"><li>• Approximate carriageway and footway dimensions: Average 7.3m Carriageway.</li><li>• Local Vegetation/Existing Constraints: The local area is constrained by shared boundaries with the BT Adastral Park Complex.</li><li>• Local Speed Limits: 30 mph (60 kph).</li><li>• Street Lighting: Fully lit.</li><li>• Local water courses that may constrain the site: None.</li><li>• Local Accesses that must be maintained: None affected by the proposed works.</li></ul> <p>No discussions have taken place with the Local Authority or Highways England at the time of writing.</p> <div></div> <p><b>Figure 1:</b> Gloster Road looking North</p> <p><b>Figure 2:</b> Gloster Road looking South</p>
2	<p><b>Design Standards:</b></p> <p>The design parameters of the proposed junction have been determined following a review of the following documents:-</p>

	<ul style="list-style-type: none"><li>• Design Manual for Roads and Bridges:<ul style="list-style-type: none"><li>➤ TD 9/93: Highway Link Design;</li><li>➤ TD 42/95: Geometric Design of Major-Minor Priority Junctions.</li></ul></li><li>• Manual for Streets;</li><li>• Traffic Signs Manual Design Standard: Chapter 5 Road Markings</li></ul>																																			
3	<p><b>Site Surveys:</b></p> <p>No surveys were carried out for the site at the time of writing.</p>																																			
4	<p><b>2D Design Elements:</b></p> <ul style="list-style-type: none"><li>• Northern Arm (Major): Gloster Road (North) 30 mph</li><li>• Eastern Arm (Minor): Quadrant Access Road 30 mph</li><li>• Southern Arm (Major): Gloster Road (South) 30 mph</li><li>• Design Speed for the Major Road = 48 kph (Manual for Streets: Table 7.1);</li><li>• Design Speed for the Minor Road = 48 kph (Manual for Streets: Table 7.1);</li></ul> <table><tr><th></th><th colspan="6">DMRB COMPLIANCE WITH TD 42/95</th></tr><tr><th></th><th>Corner Radii (m)</th><th>Lane Widths through Junction (m)</th><th>Taper for Ghost Island (m)</th><th>Direct Taper for Ghost Island (m)</th><th>Design Speed (mph)</th><th>Deceleration Length (m)</th></tr><tr><td>Gloster Road (South)</td><td>10</td><td>3.65</td><td>N/A</td><td>N/A</td><td>30</td><td>N/A</td></tr><tr><td>Quadrant Access Road</td><td>10</td><td>3.25</td><td>N/A</td><td>N/A</td><td>30</td><td>N/A</td></tr><tr><td>Ipswich Road (North)</td><td>N/A</td><td>3.65</td><td>N/A</td><td>N/A</td><td>30</td><td>N/A</td></tr></table>		DMRB COMPLIANCE WITH TD 42/95							Corner Radii (m)	Lane Widths through Junction (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration Length (m)	Gloster Road (South)	10	3.65	N/A	N/A	30	N/A	Quadrant Access Road	10	3.25	N/A	N/A	30	N/A	Ipswich Road (North)	N/A	3.65	N/A	N/A	30	N/A
	DMRB COMPLIANCE WITH TD 42/95																																			
	Corner Radii (m)	Lane Widths through Junction (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration Length (m)																														
Gloster Road (South)	10	3.65	N/A	N/A	30	N/A																														
Quadrant Access Road	10	3.25	N/A	N/A	30	N/A																														
Ipswich Road (North)	N/A	3.65	N/A	N/A	30	N/A																														
7	<p><b>Traffic Signs</b></p> <p>Advance Direction Signs (ADS) shall be provided on the approaches to the priority junction, as well as Flag type directional signs on the exit arms as prescribed in the Traffic Signs Regulations and General Directions (TRSGD). Care has been taken with the positioning and the size of these signs so that they do not interfere with driver’s visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (Mandatory Item 8.2).</p> <p>Guidance on the design of directional traffic signs is given in the Traffic Signs Manual (Chapter 7) and LTN 1/94 – ‘The Design and Use of Directional Informatory Signs’, particularly Appendix A. The ‘x’ heights for these directional sign have been informed by the 30 mph speed limit being imposed on the highway.</p> <p><b>Road Markings</b></p> <p>The road markings along Gloster Road have been provided in response to the speed limit of 30 mph. The proposed speed limit along Quadrant Access Road (30 mph) has required the road markings to be designed to reflect this limit. All road markings have been informed by Traffic Signs Manual Chapter 5.</p>																																			

8	<p><b>Highway Boundary</b></p> <p>The location of the existing highway boundary has been determined using plans provided by Suffolk County Council which has been transferred onto survey data.</p> <p>It has been confirmed by Suffolk County Council that the Highway Boundary is located as indicated on the drawings.</p> <p>The design of this priority junction requires additional carriageway width in order to accommodate the infrastructure. The priority junction will be constructed slightly off line to the existing carriageway so that no works encroach onto 3<sup>rd</sup> party land not within the control of the Developer or Highway Authority.</p>
9	<p><b>Street Lighting</b></p> <p>Gloster Road, at the location of the proposed junction already has a system of street lighting in place. However, the proposed Priority Junction and the Development Access Road is recommended to be illuminated by a system of street lighting. The extent and classification of lighting will be determined by Suffolk County Council.</p>



Arm	PROPOSED PRIORITY JUNCTION: DMRB COMPLIANCE WITH TD 42/95					
	Corner Radii to Left (m)	Approach Lane Width (m)	Taper for Ghost Island (m)	Direct Taper for Ghost Island (m)	Design Speed (mph)	Deceleration (m)
Gloucester Road (North)	10	3.65	N/A	N/A	30	N/A
Quadrant Access Road	10	3.25	N/A	N/A	30	N/A
Gloucester (South)	N/A	3.65	N/A	N/A	30	N/A

**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.

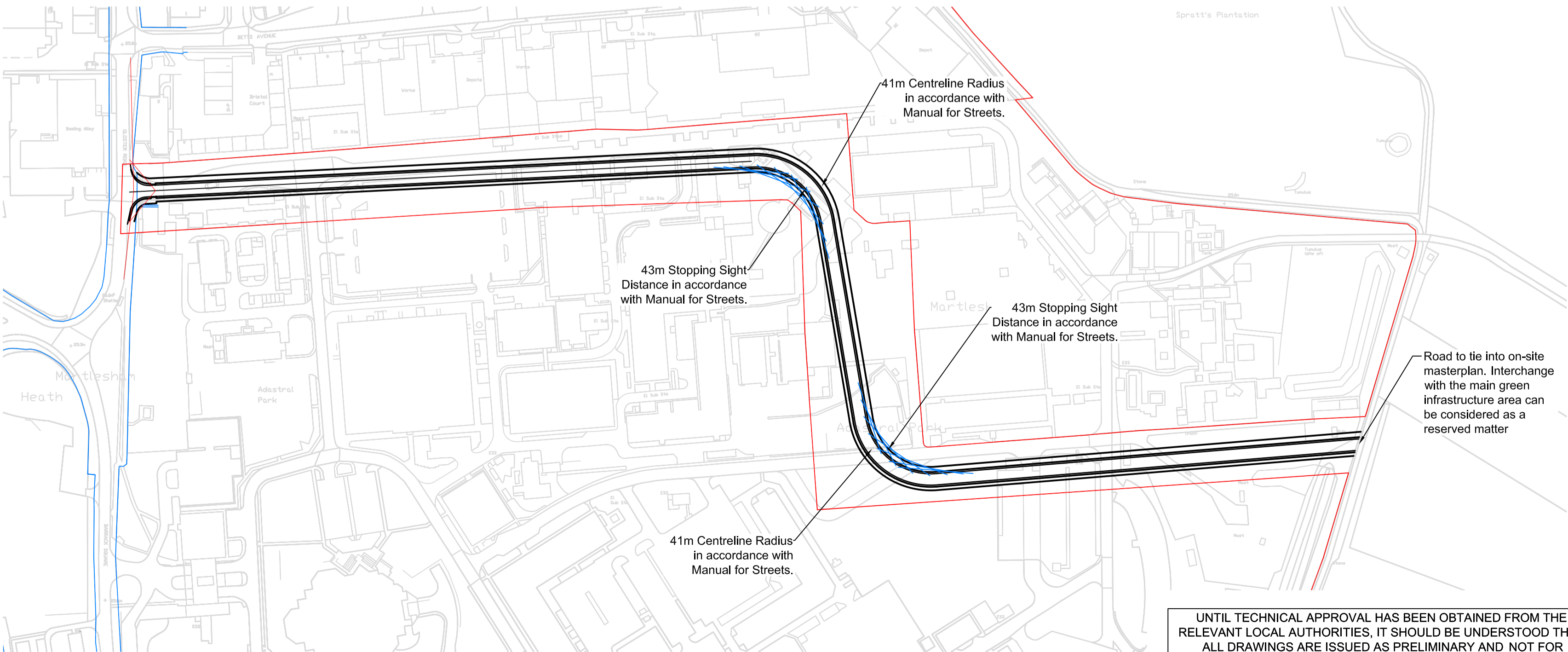
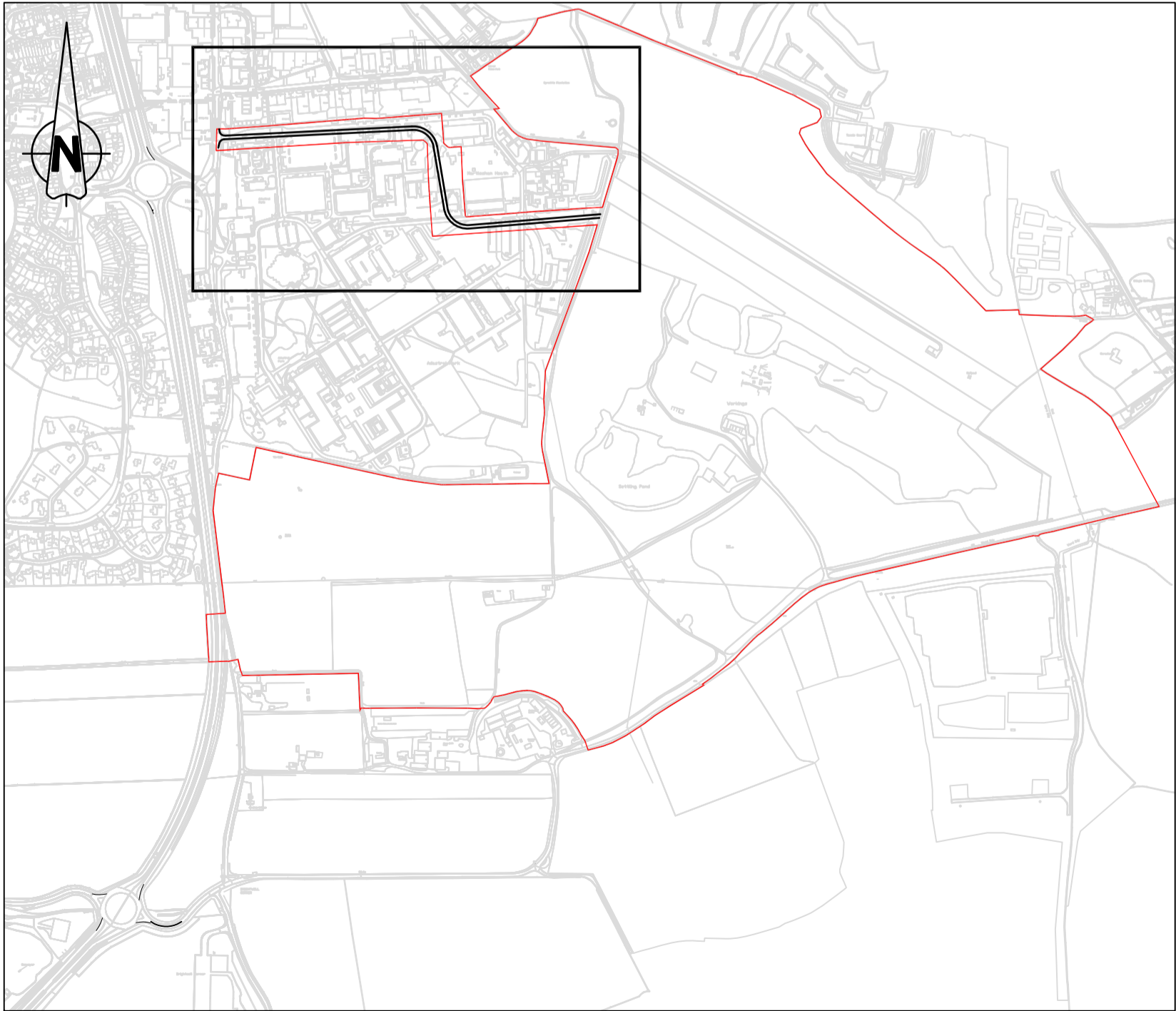
- 1) Overhead and underground services
- 2) Street Lighting Cables
- 3) Working adjacent to water courses and flood plain
- 4) Soft ground conditions
- 5) Working adjacent to live highways and railway line
- 6) Unchartered services
- 7) Existing buildings with potential asbestos hazards

**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.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following design standards:
  - TD 9/93: Highway Link Design;
  - TD 42/95: The Geometric Design of Major-Minor Priority Junctions;
  - Manual for Streets;

**KEY:**

- Site Boundary
- Anticipated Highway Boundary
- Junction Visibility Splay
- Stopping Sight Distance along Highway



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.

A Amendments to avoid trees. MDM LW PAB 06.06.17  
- First Issue - - - 23.03.16

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Carlyle Land Ltd and  
Commercial Estates Group



Land South and East of  
Adastral Park, Ipswich

Proposed Priority Junction  
North-west Quadrant Access

Status	Approval		Status Date
Drawn	MDM	LW	March 2017
Checked			Date
Scale	As Shown	10391-HL-06	23.03.2017
Number			Rev
			A

## Technical Note for Design Strategy

**Project Name:** Land South and East of Adastral Park, Ipswich, Suffolk  
**Project Number:** 10391  
**Client Name:** Carlyle Land Ltd and Commercial Estates Group  
**Note Number:** 11  
**Date:** June 2017  
**Prepared By:** Matthew Moss  
**Checked By:** Lee Witts  
**Subject/Topic:** Proposed A14 Roundabout Signalisation Measures

Item	Subject
1	<p>Brookbanks Consulting Limited is appointed by CEG to provide transportation advice for a proposed mixed-use development on land at Adastral Park near Ipswich in Suffolk.</p> <p>The aim is that by implementing signals for the A12 Approach, the A14 Westbound Approach and the A1156 Felixstowe Road Approach, this will mitigate the additional traffic caused by the development to minimize congestion at this junction. A dedicated left-turn lane between the A14 Westbound and the A1156 Felixstowe Road will be included to increase capacity and free-flowing on the junction. This note should be read in conjunction with drawing no: 10391-HL-11. The existing lengths of roads affected by this scheme are:</p> <ul style="list-style-type: none"><li>• Approximate carriageway and footway dimensions: 7.3m Carriageways, 3-5m Central Reservation. No footways.</li><li>• Local Vegetation/Existing Constraints: The approach will need vegetation to be cropped back. There are a number of forward visibility lines which cross third party land, as per the existing layout. Therefore there are Departures from the relevant DMRB Standard.</li><li>• Local Speed Limits: National Speed Limit.</li><li>• Street Lighting: Junction is fully lit.</li><li>• Local water courses that may constrain the site: None.</li><li>• Local Accesses that must be maintained: None.</li></ul> <p>No discussions have taken place with the Local Authority or Highways England at the time of writing.</p> <div></div> <p><b>Figure 1:</b> A12 (North) looking South</p> <p><b>Figure 2:</b> A12 (North) Circulatory</p>



**Figure 3:** A14 (East) looking West



**Figure 4:** A14 (East) Circulatory



**Figure 5:** A1156 (South) looking North



**Figure 6:** A1156 (South) Circulatory



**Figure 7:** A14 (West) looking East



**Figure 8:** A14 (West) Circulatory

## 2 Design Standards:

The design parameters of the proposed junction have been determined following a review of the following documents:-

- Design Manual for Roads and Bridges:
  - TA 23/81: Junctions and Accesses – Determination of Size of Roundabouts and Major-Minor Junctions;
  - TD 9/93: Highway Link Design;
  - TD 50/04: The Design of Signalized Junctions and Signal-controlled Roundabouts
- Traffic Signs Manual Design Standard: Chapter 5 Road Markings

## 3 Site Surveys:

No surveys were carried out for the site at the time of writing.

**2D Design Elements:**

- Northern Arm (Major): A12 Ring Road (North) 70 mph
- North-Eastern Arm (Minor): Bucklesham Lane 60 mph
- Northern Arm (Major): A14 Felixstowe Road (East) 70 mph
- Northern Arm (Major): A1156 Felixstowe Road (South) 60 mph
- Western Arm (Major): A14 Ring Road (West) 70 mph
- Design Speed for the Major Road = 120 kph (TD 9/93, Table 2);
- Design Speed for the Minor Road = 100kph (TD 9/93, Table 2);
- Desirable Minimum Stopping Sight Distance Major Road = 295m (TD 9/93, Table 3. TD 16/07 Item 8.3 and Figure 8/1.);
- Desirable Minimum Stopping Sight Distance Minor Road = 215m (TD 9/93, Table 3. TD 16/07 Item 8.3 and Figure 8/1.).
- Visibility Distance for a roundabout with an Inscribed Circle Diameter of over 100m = 70m (TD 16/07, Table 8/1);
- Inter-visibility Zone for a traffic signalised junction/roundabout of 2.5m (TD 50/04 Item 2.10, Figure 2/2 and 2/3);
- Forward Visibility at Entry (TD 16/07, Item 8.4 and Figure 8/2) = 70m;
- Visibility to the Right (TD 16/07, Items 8.5 to 8.7 and Figures 8/3 and 8/4) = 70m;
- Circulatory Visibility (TD 16/07, Item 8.9 and Figure 8/5) = 70m.

The definition of a Normal Roundabout as described in Items 3.1 and 3.2 of TD 16/07 is as follows:-

3.1 A Normal Roundabout has a kerbed central island at least 4 metres in diameter (Figure 3/1). Its approaches may be dual or single carriageway roads. Usually, a Normal Roundabout has flared entries and exits to allow two or three vehicles to enter or leave the roundabout on a given arm at the same time. If so, its circulatory carriageway needs to be wide enough for two or three vehicles to travel alongside each other on the roundabout itself.

3.2 If a Normal Roundabout has more than four arms, it becomes large with the probability that higher circulatory speeds will result. Either a Double Roundabout or a Signalised Roundabout is a potential solution in these circumstances.

	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width into Junction (m)	Number of Lanes into Junction	Exit Lane Width from Junction (m)	Number of Lanes from Junction	Stopping Sight Distance (m)	Corner Radii to Left (m)	Exit Design Speed (mph)	Approx. Intervisibility Splay across Arm (m)
A14 Ring Road (West)	7.3	2	7.3	2	295	>100	70	N/A
A12 Ring Road (East)	7.3	2	7.3	2	295	>100	70	20
Bucklesham Lane	4.5	1	4.5	1	215	>100	60	N/A
A14 Felixstowe Road	7.3	2	4.5	1	295	>100	70	20
A1156 Felixstowe Road	7.3	2	4.5	1	215	>100	60	20

The definition of a Normal Roundabout as described in Item 1.5 of TD 51/03 is as follows:-

1.5 In addition to the Geometric Design Parameters defined in Chapter 7, TD 16 (DMRB 6.2.3), there are special features that can improve the operation of a roundabout, including:

- Non-physical Segregated Left Turn Lane: a left turn lane from a roundabout entry to the first exit, separated from the roundabout entry, circulatory carriageway and exit by means of an island delineated using road markings only;
- Physical Segregated Left Turn Lane: a left turn lane from a roundabout entry to the first exit, separated from the roundabout entry, circulatory carriageway and exit by means of a kerbed island and associated road markings.

	DMRB COMPLIANCE WITH TD 51/17					
	Inside Curve Radius (m)	Splitter Island Length (m)	Carriageway Width (m)	Stopping Sight Distance (m)	Entry/Exit Taper Flares	Exit Diverge Length (m)
A14 Felixstowe Road to A1156 Felixstowe Road	>100	>50	6.9	215 (Departure from Standard)	1:15	80

## 5 Traffic Signs

Advance Direction Signs (ADS) shall be provided on the approaches to the roundabout, as well as Flag type directional signs on the exit arms as prescribed in the Traffic Signs Regulations and General Directions (TRSGD). Care has been taken with the positioning and the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (Mandatory Item 8.2).

Guidance on the design of directional traffic signs is given in the Traffic Signs Manual (Chapter 7) and LTN 1/94 – 'The Design and Use of Directional Informatory Signs', particularly Appendix A. The 'x' heights for these directional sign have been informed by the existing 70 mph and 60 mph speed limits as well as the 30 mph speed limit being imposed on the highway.

### Road Markings

The existing road markings along all carriageways have been provided in response to the current speed limits. All road markings have been informed by Traffic Signs Manual Chapter 5.

## 6 Highway Boundary

The location of the existing highway boundary has been determined using plans provided by Suffolk County Council which has been transferred onto survey data.

It has been confirmed by Suffolk County Council that the Highway Boundary is located as indicated on the drawings.

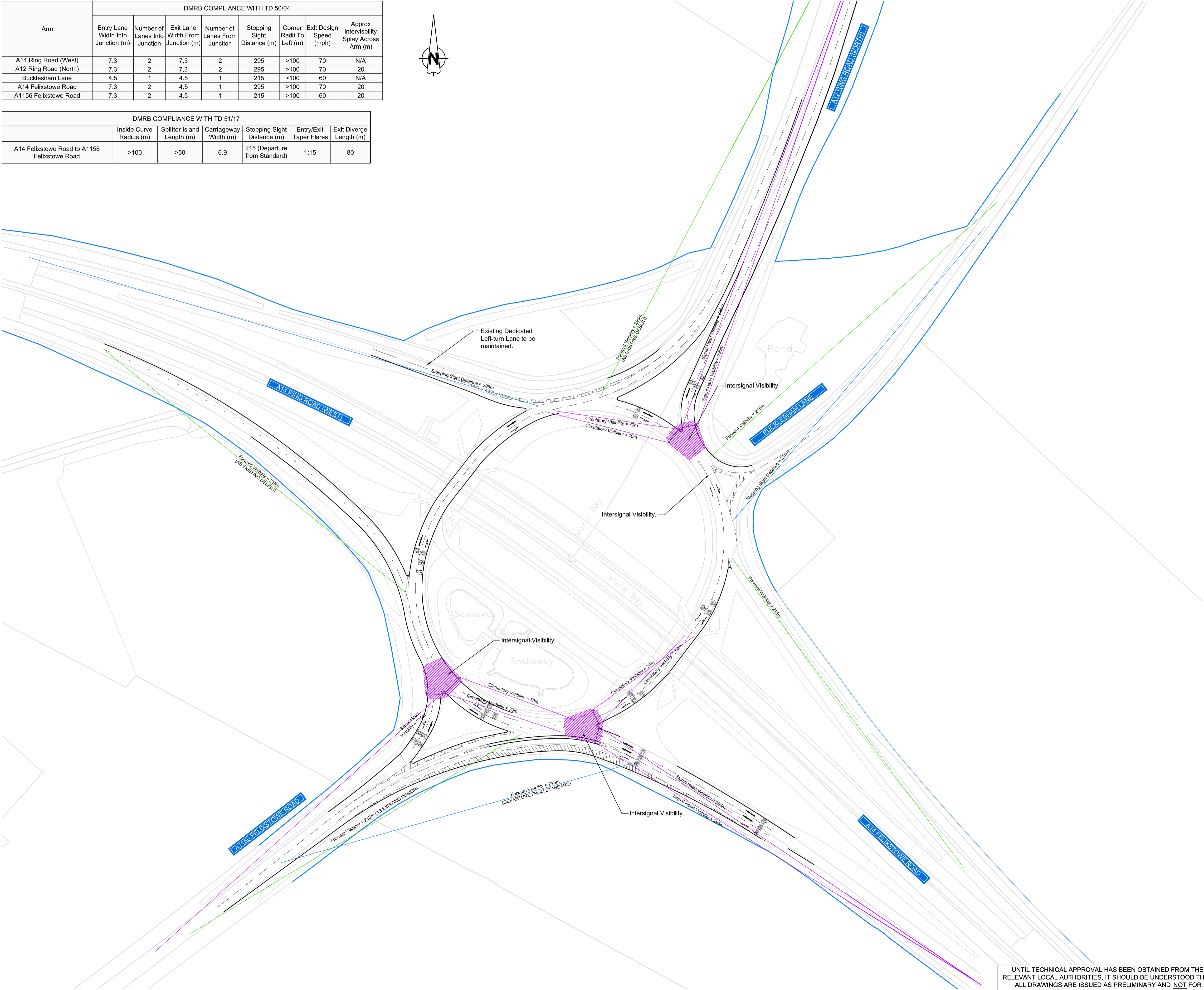
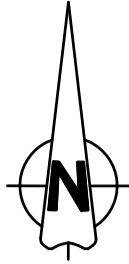
The design of this carriageway widening requires additional carriageway width in order to accommodate the infrastructure. The roundabout will be constructed slightly off line to the existing carriageway so that no works encroach onto 3<sup>rd</sup> party land not within the control of the Developer or Highway Authority.

## 7 Street Lighting

The proposed junction already has a system of street lighting in place. However, the proposed improvements are recommended to be illuminated by an appropriate system of street lighting. The extent and classification of lighting will be determined by Suffolk County Council.

Arm	DMRB COMPLIANCE WITH TD 50/04							
	Entry Lane Width Into Junction (m)	Number of Lanes Into Junction	Exit Lane Width From Junction (m)	Number of Lanes From Junction	Stopping Sight Distance (m)	Corner Radii To Left (m)	Exit Design Speed (mph)	Approx Intervisibility Splay Across Arm (m)
A14 Ring Road (West)	7.3	2	7.3	2	295	>100	70	N/A
A12 Ring Road (North)	7.3	2	7.3	2	295	>100	70	20
Bucklesham Lane	4.5	1	4.5	1	215	>100	60	N/A
A14 Felixstowe Road	7.3	2	4.5	1	295	>100	70	20
A1156 Felixstowe Road	7.3	2	4.5	1	215	>100	60	20

DMRB COMPLIANCE WITH TD 51/17						
	Inside Curve Radius (m)	Splitter Island Length (m)	Carriageway Width (m)	Stopping Sight Distance (m)	Entry/Exit Taper Flares	Exit Diverge Length (m)
A14 Felixstowe Road to A1156 Felixstowe Road	>100	>50	6.9	215 (Departure from Standard)	1:15	80










**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

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4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
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
  - TA 90/05: The Geometric Design of Pedestrian, Cycle and Equestrian Routes;
  - TA 91/05: Provision for Non-Motorised Users;
  - TD 9/93: Highway Link Design;
  - TD 50/04: The Geometric Layout of Signal-controlled Junctions and Signalized Roundabouts;
  - Traffic Advisory Leaflet 3/03: Equestrian Crossings.

## KEY:

-  Assumed Highway Boundary
-  Signal Head Visibility
-  Traffic Signal Head
-  High-mast Traffic Signal Head
-  Intersignal Visibility
-  Forward Visibility on Exit
-  Forward Visibility on Entry

B Amendments as per Road Safety Audit. MDM LW PAB 12.06.17  
B Amendments as per client's requests. MDM LW PAB 10.03.17  
A Amendments as per client's requests. MDM LW PAB 19.10.16  
- First Issue - - - 19.10.16

**Brookbanks**

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Carlyle Land Ltd and  
Commercial Estates Group

Land South and East of  
Adastral Park, Ipswich



Off-site Highway Mitigation:  
A14 Roundabout Signalisation

Status			Status Date		
Approval			Oct 2016		
Drawn	Checked		Date		
MDM	LW		19.10.2016		
Scale	Number		Rev		
1:1000	10391-HL-11		C		
<div><div>0</div><div>10</div><div>20</div><div>30</div><div>40</div><div>50</div></div>					
<div><div></div><div></div><div></div><div></div><div></div><div></div></div>					
METRES					

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.

## Technical Note for Design Strategy

**Project Name:** Land South and East of Adastral Park, Ipswich, Suffolk  
**Project Number:** 10391  
**Client Name:** Carlyle Land Ltd and Commercial Estates Group  
**Note Number:** 22  
**Date:** June 2017  
**Prepared By:** Matthew Moss  
**Checked By:** Lee Witts  
**Subject/Topic:** Proposed Foxhall Road Roundabout Mitigation Measures

Item	Subject
1	<p>Brookbanks Consulting Limited is appointed by CEG to provide transportation advice for a proposed mixed-use development on land at Adastral Park near Ipswich in Suffolk.</p> <p>The aim of this roundabout design is to mitigate the additional traffic caused by the development to minimize congestion at this junction. This note should be read in conjunction with drawing no: 10391-HL-22. The existing length of the A12 Dual Carriageway, Foxhall Road and Newbourne Road affected by this scheme are:</p> <ul style="list-style-type: none"><li>• Approximate carriageway and footway dimensions: A12 (North and South): 2 No. 7.3m Carriageways, 5m Central Reservation. Foxhall Road and Newbourne Road: 7.3m Carriageways. No footways.</li><li>• Local Vegetation/Existing Constraints: None.</li><li>• Local Speed Limits: A12 (North and South): 70 mph (120 kph). Foxhall Road and Newbourne Road: 60 mph (100 kph).</li><li>• Street Lighting: Junction is fully lit.</li><li>• Local water courses that may constrain the site: None.</li><li>• Local Accesses that must be maintained: None.</li></ul> <p>No discussions have taken place with the Local Authority or Highways England at the time of writing.</p> <div></div> <p><b>Figure 1:</b> A12 (North) looking South</p> <p><b>Figure 2:</b> Newbourne Road (East) looking West</p>



**Figure 3:** A12 (South) looking North



**Figure 4:** Foxhall Road (West) looking East

2

#### **Design Standards:**

The design parameters of the proposed junction have been determined following a review of the following documents:-

- Design Manual for Roads and Bridges:
  - TA 23/81: Junctions and Accesses – Determination of Size of Roundabouts and Major-Minor Junctions;
  - TD 9/93: Highway Link Design;
  - TD 16/07: The Geometric Design of Roundabouts
- Traffic Signs Manual Design Standard: Chapter 5 Road Markings

3

#### **Site Surveys:**

No surveys were carried out for the site at the time of writing.

4

#### **2D Design Elements:**

- Northern Arm (Major): A12 Ring Road (North) 70 mph
- Eastern Arm (Minor): Newbourne Road 30 mph
- Southern Arm (Major): A12 Ring Road (South) 70 mph
- Western Arm (Minor): Foxhall Road 30 mph
- Design Speed for the Major Road = 120 kph (TD 9/93, Table 2);
- Design Speed for the Minor Road = 100 kph (West) and 60 kph (East) (TD 9/93, Table 2);
- Desirable Minimum Stopping Sight Distance Major Road = 295m (TD 9/93, Table 3. TD 16/07 Item 8.3 and Figure 8/1.);
- Desirable Minimum Stopping Site Distance Minor Road = 215m (West) and 90m (East) (TD 9/93, Table 3. TD 16/07 Item 8.3 and Figure 8/1.);
- Visibility Distance for a roundabout with an Inscribed Circle Diameter of 60m to 100m = 50m (TD 16/07, Table 8/1);
- Forward Visibility at Entry (TD 16/07, Item 8.4 and Figure 8/2) = 50m;
- Visibility to the Right (TD 16/07, Items 8.5 to 8.7 and Figures 8/3 and 8/4) = 50m;
- Circulatory Visibility (TD 16/07, Item 8.9 and Figure 8/5) = 50m;

The definition of a Normal Roundabout as described in Items 3.1 and 3.2 of TD 16/07 is as follows:-

3.1 A Normal Roundabout has a kerbed central island at least 4 metres in diameter (Figure 3/1). Its approaches may be dual or single carriageway roads. Usually, a Normal Roundabout has flared entries and exits to allow two or three vehicles to enter or leave the roundabout on a given arm at the same time. If so, its circulatory carriageway needs to be wide enough for two or three vehicles to travel alongside each other on the roundabout itself.

3.2 If a Normal Roundabout has more than four arms, it becomes large with the probability that higher circulatory speeds will result. Either a Double Roundabout or a Signalised Roundabout is a potential solution in these circumstances.

	DMRB COMPLIANCE WITH TD 16/07							
	Entry Width (m)	Entry Radius into Rotary (m)	Exit Radius from Rotary (m)	Stopping Sight Distance (m)	Entry Angle (degrees)	Entry/Exit Design Speed (mph)	Approx. Indicative Circular Diameter (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	90	24	30	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

## 5 Relation to Existing Access Points

The proposed roundabout has been located near a proposed signalized junction access to the development to the north. It is located an appropriate distance from this junction. Any traffic movements undertaken into or out of these existing access points are not restricted by the proposed roundabout.

## 6 Traffic Signs

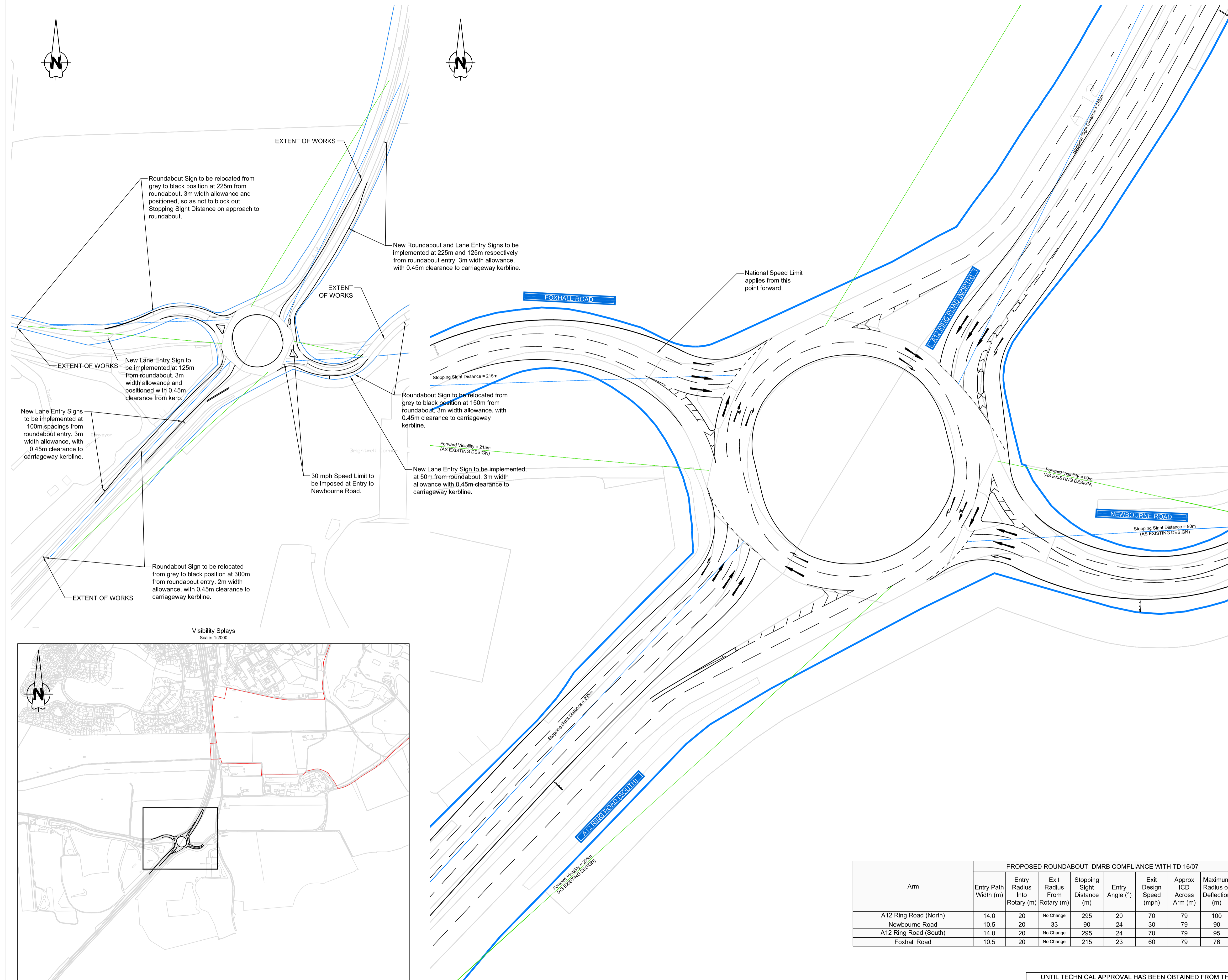
Advance Direction Signs (ADS) shall be provided on the approaches to the roundabout, as well as Flag type directional signs on the exit arms as prescribed in the Traffic Signs Regulations and General Directions (TRSGD). Care has been taken with the positioning and the size of these signs so that they do not interfere with driver's visibility requirements. A 2m mounting height will be provided to Flag type signs to ensure visibility is not restricted (Mandatory Item 8.2).

Guidance on the design of directional traffic signs is given in the Traffic Signs Manual (Chapter 7) and LTN 1/94 – 'The Design and Use of Directional Informatory Signs', particularly Appendix A. The 'x' heights for these directional sign have been informed by the existing 70 mph and 60 mph speed limits as well as the 30 mph speed limit being imposed on the highway.

### Road Markings

The existing road markings along the A12 Dual Carriageway and Foxhall Road have been provided in response to the current speed limits of 70 mph and 60 mph respectively. The proposed speed limit along Newbourne Road (30 mph) has required the road markings to be designed to reflect this lower limit. All road markings have been informed by Traffic Signs Manual Chapter 5.

7	<p><b>Highway Boundary</b></p> <p>The location of the existing highway boundary has been determined using plans provided by Suffolk County Council which has been transferred onto survey data.</p> <p>It has been confirmed by Suffolk County Council that the Highway Boundary is located as indicated on the drawings.</p> <p>The design of this roundabout requires additional carriageway width in order to accommodate the infrastructure. The roundabout will be constructed slightly off line to the existing carriageway so that no works encroach onto 3<sup>rd</sup> party land not within the control of the Developer or Highway Authority.</p>
8	<p><b>Street Lighting</b></p> <p>The proposed junction already has a system of street lighting in place. However, the proposed roundabout improvements are recommended to be illuminated by an appropriate system of street lighting. The extent and classification of lighting will be determined by Suffolk County Council.</p>



NOTES:

1. Do not scale from this drawing
2. All dimensions are in metres unless otherwise stated.
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.
4. No part of this drawing may be copied or duplicated without the express permission of Brookbanks Consulting.
5. The junctions, roundabouts and links have been designed in accordance with the following DMRB standards:
  - TA 238/1: 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

B Amendments for Road Safety Audit.	MDM	DN	PAB	14.06.17
A Amendments as per client's requests.	MDM	LW	PAB	03.03.17
- First Issue	-	-	-	28.02.17

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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

Status		Status Date	
Approval		Feb 2017	
Drawn	Checked	Date	
MDM	LW	28.02.2017	
Scale	Number	Rev	
As Shown	10391-HL-22	B	