

Bassetlaw Local Plan

Bassetlaw Transport Study Addendum

A57 Link Capacity Review

Bassetlaw District Council
November 2022

Prepared on Behalf of Tetra Tech Limited. Registered in England number: 01959704

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Approved By: Alistair Gregory			
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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 When the Bassetlaw Transport Study (BTS) was produced there were no details available regarding how the Apleyhead Employment Allocation (SEM001) may be developed. The traffic assumptions applied in the BTS were therefore intentionally robust to cover potential development outcomes for SEM001.
- 1.1.2 The promoters of SEM001 have recently provided details of the development now being proposed for the site in terms of development floor areas, use-classes, and traffic generation. A review has therefore been undertaken of the calculations presented in the BTS relating to SEM001 and an update provided that reflects the more detailed development information now available.
- 1.1.3 This report has been produced as an addendum to the BTS and summarises the findings of the review.

1.2 REPORT LAYOUT

- 1.2.1 The structure of the report is as follows:
- Chapter 2 summarises the methodology and findings of the BTS in relation to SEM001.
 - Chapter 3 summarises the emerging SEM001 development details.
 - Chapter 4 presents a review of A57 highway link capacity.
 - Chapter 5 summarises the report.

2 SUMMARY OF PREVIOUS FINDINGS

2.1 INTRODUCTION

2.1.1 This section of the report summarises the findings of the BTS as far as it related to SEM001 and traffic flows on the A57.

2.2 BACKGROUND

2.2.1 The BTS considered the traffic implications of SEM001 as part of the district-wide Local Plan transport assessment. When the BTS was produced there were no details available regarding how SEM001 may be developed, other than it was being proposed for employment uses. The BTS therefore applied robust traffic assumptions to cover potential development outcomes for SEM001.

2.2.2 The development floor area for SEM001 was estimated from the developable site area which was taken as 118 ha (1,180,000 sqm). A typical employment development density of 40% was applied to the total site area to estimate the development gross floor area (GFA). This gave a GFA of 472,000 sqm. The estimated GFA was then split equally between the following land-uses:

- B2 Industrial Estates - 94,400 sqm (20%)
- B8 Warehouse / Distribution - 377,600 sqm (80%)

2.2.3 Person trip generation was estimated using TRICS trip generation rates for the above land-uses. It was assumed that the development would be completed and fully occupied by the end of the Local Plan (2038).

2.2.4 Modal split percentages were derived from National Census 2011 'Travel to Work Data' for representative Middle Super Output Areas (MSOA) within the district and these were used to convert person trips into vehicle trips. Census data for the 'daytime population' was applied to reflect commuting to work patterns. Trips by each mode of transport were estimated by applying these modal split percentages to the person trips derived using TRICS. The resultant vehicle trip generation from the BTS for SEM001 is presented in the table below.

Table 1 – SEM001 Vehicle Trip Generation (taken from the BTS)

Direction	Total Vehicles	
	AM	PM
Inbound	1,334	222
Outbound	273	1,182
Two-Way	1,607	1,405

- 2.2.5 The methodology applied in the BTS reflected the strategic nature of the study and made no allowances for trip discounts due to sustainable travel measures that could be implemented at SEM001 or any other Local Plan sites within the district. The BTS study was therefore openly acknowledged as being robust in terms of forecast traffic conditions due to Local Plan growth.
- 2.2.6 Vehicle trips were distributed based on 2011 National Census Travel to Work statistics for a representative MSOA. For site SEM001 the Bassetlaw 012 (E02005846) MSOA, covering the southeast region of Worksop was selected as the representative MSOA. Travel to work data for the representative MSOA was then used to identify respective origin MSOAs.
- 2.2.7 Routes between the identified origins and site SEM001 were identified using an ‘all or nothing’ trip assignment on a representation of the district’s highway network modelled using VISUM software. This process applied the shortest routes available in terms of journey time ignoring any delays due to network performance.
- 2.2.8 The resultant trip distribution percentages and vehicle flows are summarised in the table below. The trip distribution applied in the BTS was heavily weighted towards the A57 west.

Table 2 – SEM001 Vehicle Trip Distribution (taken from the BTS)

Route	Distribution % (Averages of AM / PM)
A1 North	9%
B6420 Mansfield Road	7%
A1 South	5%
A614 Blyth Road	4%
A57 West	75%

- 2.2.9 The BTS only considered total vehicle flows and separate appraisals for HGVs were not undertaken¹. The resultant two-way vehicle flows for SEM001 are summarised in the table below.

Table 3 – SEM001 Two-Way Vehicle Trips (taken from the BTS)

Route	AM	PM
A1 North	114	146
B6420 Mansfield Road	140	79
A1 South	75	80
A614 Blyth Road	100	17
A57 Total East of the Site Access	429	322
A57 Total West of the Site Access	1,177	1,083

¹ Due to the complexities of assessing multiple sites across the district.

3 EMERGING DEVELOPMENT DETAILS

3.1 DEVELOPMENT DETAILS

3.1.1 The promoters of SEM001 have recently provided details of the development now being proposed for the site and a summary is below. The development is expected to be fully constructed and occupied before the end of the Local Plan period (i.e. before 2038).

- 352,140 sqm GFA B8 Storage use
- 88,035 sqm GFA B2 General Industrial use
- 440,175 sqm GFA total floor area

3.1.2 The table below compares the differences between the development floor areas applied in the BTS and the floor areas now being promoted for SEM001.

Table 4 – Floor Area Comparison (sqm)

Land-Use	BTS	Proposed Development	Differences
B1 Business Park	0	0	0
B2 General Industrial	94,400	88,035	-6,365
B8 Warehouse / Distribution	377,600	352,140	-25,460
Totals	472,000	440,175	-31,825

3.1.3 The total development floor area assumed for the BTS was larger than the development now being promoted for SEM001.

3.1.4 The site promoter’s consultant has also provided details of the development trip generation, trip distribution, and trip assignment that has been estimated for SEM001 and details can be found in **Appendix A**. We are informed that these details have been generated in collaboration with and agreed with National Highways and Nottinghamshire County Council (NCC), who are the highway authorities within the district.

3.1.5 A summary of the total traffic generation from SEM001 is presented in the table on the next page. The table presents a comparison between the traffic flows estimated in the BTS and the traffic flows supplied by the site promoter’s consultant.

3.1.6 The table demonstrates that the two-way peak period traffic generation estimated for the proposed development is significantly lower than the estimates applied in the BTS which is due to a combination of the differences in the development floor areas, differences in the trip generation methodology, and a 5% reduction in car trips included in the site promoter’s calculations to reflect sustainable transport measures.

Table 5 – SEM001 Vehicle Trip Generation Comparison (VPH)

Direction	BTS		Proposed Development ²		Differences	
	AM	PM	AM	PM	AM	PM
Inbound	1,334	222	800	124	-534	-98
Outbound	273	1,182	262	626	-11	-556
Two-Way	1,607	1,405	1,062	750	-545	-655

3.1.7 The table below presents a comparison of the estimated two-way development traffic flows due to SEM001 on the highway network near to the site.

Table 6 – SEM001 Two-Way Vehicle Trip Comparison (VPH)

Route	BTS		Proposed Development		Differences	
	AM	PM	AM	PM	AM	PM
A1 North	114	146	170	119	56	-27
B6420 Mansfield Road	140	79	32	24	-108	-55
A1 South	75	80	141	87	66	7
A614 Blyth Road	100	17	137	102	37	85
A57 Total East of SEM001	429	322	480	333	51	11
A57 Total West of SEM001	1,177	1,083	581	419	-596	-664

3.1.8 The table above demonstrates that the total two-way flows on the A57 to the west of the Apleyhead Employment Allocation site (i.e. towards Worksop) are significantly lower for the proposed development than the estimates applied in the BTS. Whereas flows to the east (i.e. towards the A1) are marginally higher (+51 VPH AM and +11 VPH PM).

² Figures include a 5% reduction to car trips for sustainable travel measures.

4 A57 LINK CAPACITY REVIEW

4.1 METHODOLOGY

4.1.1 A review has been undertaken to assess the impacts of the development traffic flows provided by the site promoter for SEM001 on the A57 near the site. The methodology used is summarised as follows.

- Step 1 – development traffic flows to/from SEM001, as assumed for the BTS, have been isolated and removed from the network.
- Step 2 – development traffic flows supplied by the site promoter’s consultant for SEM001 have been added onto the network to create ‘sensitivity test’ design flows.
- Step 3 – highway link capacity for the A57 near to SEM001 has been reviewed with the ‘sensitivity test’ flows using the same methodology applied in the BTS.

A57 Highway Link Capacity Review

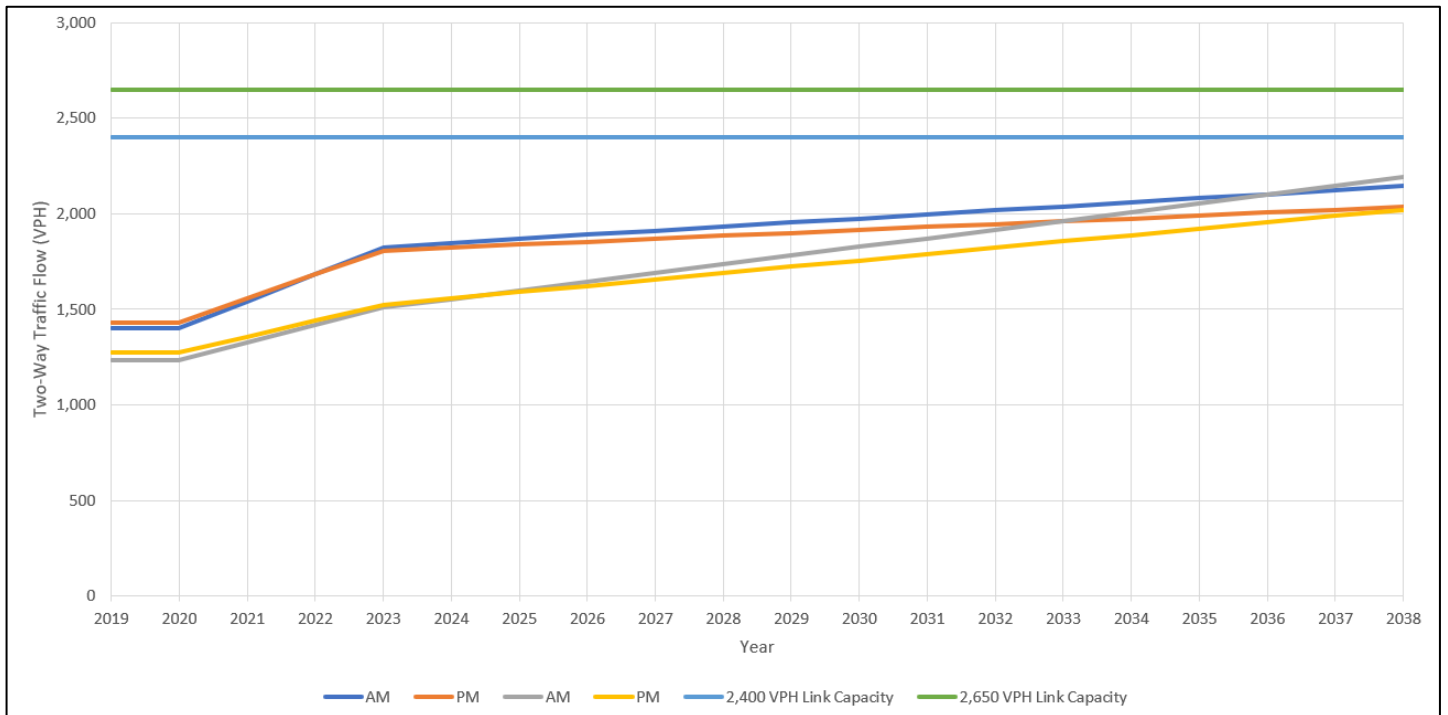
4.1.2 The BTS identified that the eastern sections of the A57 were likely to reach operational link capacity towards the end of the Local Plan period and this was mainly due to the addition of development traffic associated with SEM001.

4.1.3 Link capacity on the A57 has therefore been reviewed using the ‘sensitivity test’ flows described above. The results of the analysis are presented in the table below and illustrated in the graph on the next page. Comparisons have been made against both urban and rural highway link capacities applying the same methodology used in the BTS.

Table 7 – Review of A57 Highway Link Capacity

Data	A57 Two-Way Flows (VPH)					
	A57 Between B6034 and B6040		A57 East of Old Coach Road to SEM001 site access		A57 East of SEM001 site access to A1 Apleyhead Junction	
	AM	PM	AM	PM	AM	PM
2019 Base Flows	1,399	1,431	1,236	1,274	1,236	1,274
Committed Development Flows	427	377	273	249	273	249
Local Plan Development Flows	319	229	681	499	580	413
Total 2038 Design Flows	2,145	2,037	2,190	2,022	2,089	1,936
Urban Link Capacity	2,760	2,760	2,760	2,760	2,760	2,760
Difference to Urban Capacity	-615	-723	-570	-738	-671	-824
Rural Link Capacity	2,400	2,400	2,400	2,400	2,400	2,400
Difference to Rural Capacity	-255	-363	-210	-378	-311	-464

Image 1 – A57 Highway Link Capacity Review



- 4.1.4 The assessment assumes that all committed development is delivered and fully occupied at a linear rate between 2020 and 2023 and that all Local Plan development is delivered and fully occupied at a linear rate between 2023 and 2038.
- 4.1.5 In the graph above the two horizontal lines (green and blue) represent the theoretical A57 urban and rural highway link capacities of 2,650 VPH and 2,400 VPH respectively and the sloped lines represent the cumulative increase in two-way AM and PM peak hour traffic flows on the A57 (Base + Committed Development + Local Plan Sensitivity Test development flows).
- 4.1.6 The dark blue and orange sloped lines represent the AM and PM traffic flows respectively on the A57 between the B6034 and B6040, whilst the grey and yellow sloped lines represent the AM and PM traffic flows respectively on the A57 between the B6040 and the A1(T).
- 4.1.7 When applying the SEM001 development traffic flows provided by the site promoter's consultant the A57 does not exceed highway link capacity to the end of the Local Plan period.

Summary

- 4.1.8 Highway link capacity on the A57 has been reviewed using traffic flows that better reflect the emerging development details for SEM001 than the robust estimates that were applied in the BTS. The results of the review demonstrate that the A57 will not exceed highway link capacity within the Local Plan period and no highway link capacity improvements are required to the eastern sections of the A57 to facilitate delivery of the Local Plan.

5 SUMMARY

5.1 SUMMARY

- 5.1.1 This technical note has been produced as an addendum to the Bassetlaw Transport Study (BTS) to present a review of highway link capacity on the eastern sections of the A57 near to the Apleyhead Employment Allocation (SEM001).
- 5.1.2 When the BTS was produced there were no details available regarding how SEM001 may be developed. The traffic generation assumptions applied in the BTS were therefore intentionally robust to cover the potential development outcomes for the site.
- 5.1.3 The site promoters have recently provided details of the development now being considered for SEM001 in terms of development floor areas, use-classes, and traffic generation. A review has therefore been undertaken of the A57 highway link capacity calculations presented in the BTS to reflect the more detailed development information that is now available.
- 5.1.4 The development floor areas assumed for the BTS, and the floor areas now being proposed for the site have been compared. The BTS assessed a development floor area for SEM001 that was larger than the development now being promoted for SEM001.
- 5.1.5 The total development traffic flows estimated in the BTS for SEM001, and the traffic flows supplied by the site promoter's consultant have been compared. The traffic flows estimated in the BTS were significantly higher than the supplied flows that have been generated in collaboration with and agreed with National Highways and Nottinghamshire County Council (NCC).
- 5.1.6 A review has been undertaken of highway link capacity on the A57 using the supplied traffic flows for SEM001. The results demonstrate that the A57 is not forecast to exceed highway link capacity within the Local Plan period and no highway link capacity improvements are required to the eastern sections of the A57 to facilitate delivery of the Local Plan.
- 5.1.7 The findings from this review demonstrate that delivery of the Local Plan is not dependent upon highway link capacity improvements being implemented on the A57. It is recommended that the operation of the A57 within the district should continue to be monitored and further collaborative work should be undertaken between Bassetlaw District Council and partners on the scope and feasibility of a wider Improvement Plan for the A57 between the M1 in Rotherham and the A1 in Bassetlaw to help accommodate growth beyond the plan period, both within and outside Bassetlaw district.

APPENDICES

APPENDIX A – SUPPLIED TRAFFIC DATA FOR SEM001

From: [Paul Irwin](#)
To: [Gregory, Alistair](#)
Cc: [Colclough, John](#); [Holland, Robert](#); Luke.Brown@bassetlaw.gov.uk; [Graeme Matthews](#); [Nick Pleasant](#)
Subject: Fwd: FW: Bassetlaw Local Plan - Apleyhead transport assessment
Date: 17 November 2022 13:49:55
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image006.png](#)
[image002.png](#)
[2022-11-17 Figures 41,42,53 & 54.pdf](#)

You don't often get email from paul.irwin@foreconsulting.co.uk. [Learn why this is important](#)

Alistair,

Yes, all good thanks. Our response to each of the points you have requested is set out below. Hopefully this gives you the information you need.

If you have any questions on this please let us know. My colleague Graeme has prepared the attached and below and can hopefully quickly answer any further queries.

Regards,
Paul

From: Gregory, Alistair <Alistair.Gregory@tetrattech.com>
Sent: 16 November 2022 15:20
To: Paul Irwin <paul.irwin@foreconsulting.co.uk>
Cc: Nick Pleasant <nick.pleasant@bartonwillmore.co.uk>; Graeme Matthews <graeme.matthews@foreconsulting.co.uk>; Luke Brown <Luke.Brown@bassetlaw.gov.uk>; Holland, Robert <Robert.Holland@tetrattech.com>; Colclough, John <John.Colclough@tetrattech.com>
Subject: RE: Bassetlaw Local Plan - Apleyhead transport assessment

Hi Paul

Thanks for your email. I'm good thanks, hope you are too.

We're keen to undertake a sensitivity test of likely impacts on the A57 because we appreciate that the appraisal in the Bassetlaw Transport Study is very robust.

Luke has provided us with a copy of your response to Matter 13 which includes your appraisal for the Apleyhead employment allocation as an appendix.

Would it be possible to provide us with the following information so we can do a bit of further testing?

- Proposed floor areas by use-class (best estimates if not fixed yet)

Assessments to date are based on a total development for up to 4,738,000 sqft (440,175 sqm). The Site is likely to be primarily used for B8 (storage and distribution) uses, however flexibility is required to respond to potential market demand meaning an element of B2 uses are also envisaged. Thus, assessments to date are based on 80% (352,140 sqm) B8 storage and distribution use and 20% (88,035 sqm) B2 general industry use.

- Proposed build out rate (best estimate if unknown)

Assessments to date based on the proposed development being fully built out by 2030 with the first phase of 48,908 sqm built out by 2023 (this might now slip to 2024).

- Any trip rates that you've agreed with NCC

The predicted vehicle trip rates (see Table 1 below) that we have used to assess the development proposal were provided to us by National Highways (NH) as part of the scoping process and were accepted by/agreed with NCC Highways.

Table 1: Vehicle Trip Rates (per 100 sqm)

Vehicle Type	Weekday AM Peak Hour (0730-0830)		Weekday PM Peak Hour (1630-1730)			
	Arr.	Dep.	Total	Arr.	Dep.	Total
B8 Storage and Distribution						
Car/LGV	0.140	0.042	0.182	0.022	0.112	0.134
HGV	0.030	0.020	0.050	0.010	0.016	0.026
Total	0.170	0.062	0.232	0.032	0.128	0.160
B2 General Industry						
Car/LGV	0.265	0.050	0.315	0.018	0.233	0.251
HGV	0.005	0.010	0.015	0.000	0.000	0.000
Total	0.270	0.060	0.330	0.018	0.233	0.251

The resulting vehicle trip generations are presented in Table 2 below and include a 5% reduction to the car/LGV traffic flows to account for Travel Plan mode share targets.

Table 2: Vehicle Trip Generation (With 5% Travel Plan reduction applied to Car/LGV trips)

Vehicle Type	Weekday AM Peak Hour (0730-0830)		Weekday PM Peak Hour (1630-1730)			
	Arr.	Dep.	Total	Arr.	Dep.	Total
B8 Storage and Distribution (352,140 sqm)						
Car/LGV	468	141	609	74	375	448
HGV	106	70	176	35	56	92
Total	574	211	785	109	431	540
B2 General Industry (88,035 sqm)						
Car/LGV	222	42	263	15	195	210
HGV	4	9	13	0	0	0
Total	226	51	277	15	195	210
Site Total (440,175 sqm)						
Car/LGV	690	182	872	89	570	658
HGV	110	79	189	35	56	92
Total	800	262	1,062	124	626	750

Note: Vehicle trips rounded to the nearest whole number.

At the request of NCC Highways, HGV trips generated by the proposed development have been converted to Passenger Car Unit (PCU) values. The size of HGV vehicles visiting the Site will vary and as such a conversion factor of 2.0 has been used.

Table 3: PCU Trip Generation (HGV trips converted to PCU using a factor of 2.0)

Vehicle Type	Weekday AM Peak Hour (0730-0830)		Weekday PM Peak Hour (1630-1730)			
	Arr.	Dep.	Total	Arr.	Dep.	Total
B8 Storage and Distribution (352,140 sqm)						
Car/LGV	468	141	609	74	375	448
HGV	211	141	352	70	113	183
Total	680	281	961	144	487	631
B2 General Industry (88,035 sqm)						
Car/LGV	222	42	263	15	195	210
HGV	9	18	26	0	0	0
Total	230	59	290	15	195	210
Site Total (440,175 sqm)						
Car/LGV	690	182	872	89	570	658
HGV	220	158	379	70	113	183
Total	910	341	1,251	159	682	841

Note: Vehicle trips rounded to the nearest whole number.

- AM / PM peak hour directional flows on the A57 (VPH and PCU) for the proposed development

The car / LGV trip distribution associated with the Site has been reviewed and agreed with NH as part of the scoping dialogue. It has been estimated based on the 2011 Census dataset, “WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)”. The destination of travel to work for people who work in Bassetlaw O14 (E02005848) Middle Layer Super Output Area (MSOA) has been considered, this being the area in which the Site is located. It should be noted that the methodology is likely to provide a realistic estimate of the trip distribution since the MSOA includes the adjacent Wilko and B&Q distribution centres which are likely to have similar travel to work characteristics as the proposed development Site. Destinations have been broken down into MSOAs for Doncaster, Rotherham, Bolsover, Mansfield, Newark and Sherwood and Bassetlaw; for all other destinations, the local authority district has been used. The following modes of travel have been considered: “Driving a car or van”; “Taxi”; and “Motorcycle, scooter or moped”. The number of vehicle trips to each MSOA / local authority district has been expressed as a percentage of the total and then assigned to routes on the highway network to give the vehicle trip distribution to and from the proposed development. Where a choice of routes is available, the proportion of trips using each route has been split to reflect the likely preferred choice of travel time and distance during each assessment period. The agreed car / LGV trip distribution for the proposed development is summarised in Table 4 below and illustrated on Figure 41 (attached).

Table 4: Car / LGV Trip Distribution

Ref.	Route	Vehicle Trip Distribution
1	A1 (North)	15.6%
2	B6420 Mansfield Road	3.7%
3	A1 (South)	7.9%
4	A614 Blyth Road	15.0%
5	B6034 Netherton Road	2.0%
6	A57	19.5%
7	Netherton Road	12.1%
8	Retford Road	5.9%
9	High Hoe Road	18.4%
Total		100.0%

At the request of NCC Highways, a separate vehicle trip distribution has been established for HGVs. A review of the surveyed HGV turning movements at the A57 / B6040 roundabout has been undertaken to establish the percentage split of eastbound and westbound HGV movements along the A57 within the immediate vicinity of the Site. This percentage split has been used to estimate HGV movements turning to and from the Site's proposed new access onto the A57. The HGV movements have been split at Apleyhead Interchange based on the percentage of surveyed HGV movements to and from the A1 (north), A1 (south) and the A614 Blyth Road arms. It is reasonable to assume that HGV movements crossing the bridge link would route to and from the A1. This methodology is considered to be representative of the likely directional split of HGV movements to / from the proposed development and the HGV trip distribution for the proposed development is summarised in Table 5 below and Figure 42 (attached).

Table 5: HGV Trip Distribution

Ref.	Route	Vehicle Trip Distribution
1	A1 (North)	18.2%
3	A1 (South)	38.0%
4	A614 Blyth Road (South)	3.3%
6	A57	40.4%
Total		100.0%

- AM / PM peak hour turning movements at the A1 Apleyhead Interchange (VPH and PCU) for the proposed development

The total development flows (pcus) for the Weekday AM and PM peak hours are shown on Figures 53 and 54 (attached).

- Any proposals / assumptions regarding sustainable travel measures and resultant vehicle trip reductions.

As above, 5% reduction to the car/LGV traffic flows to account for Travel Plan mode share targets.

Any information that you can share with us would be most welcome, so we can ensure our calculations align more closely with the developer's emerging proposals.

A quick response would be very helpful as we're working to tight deadlines.

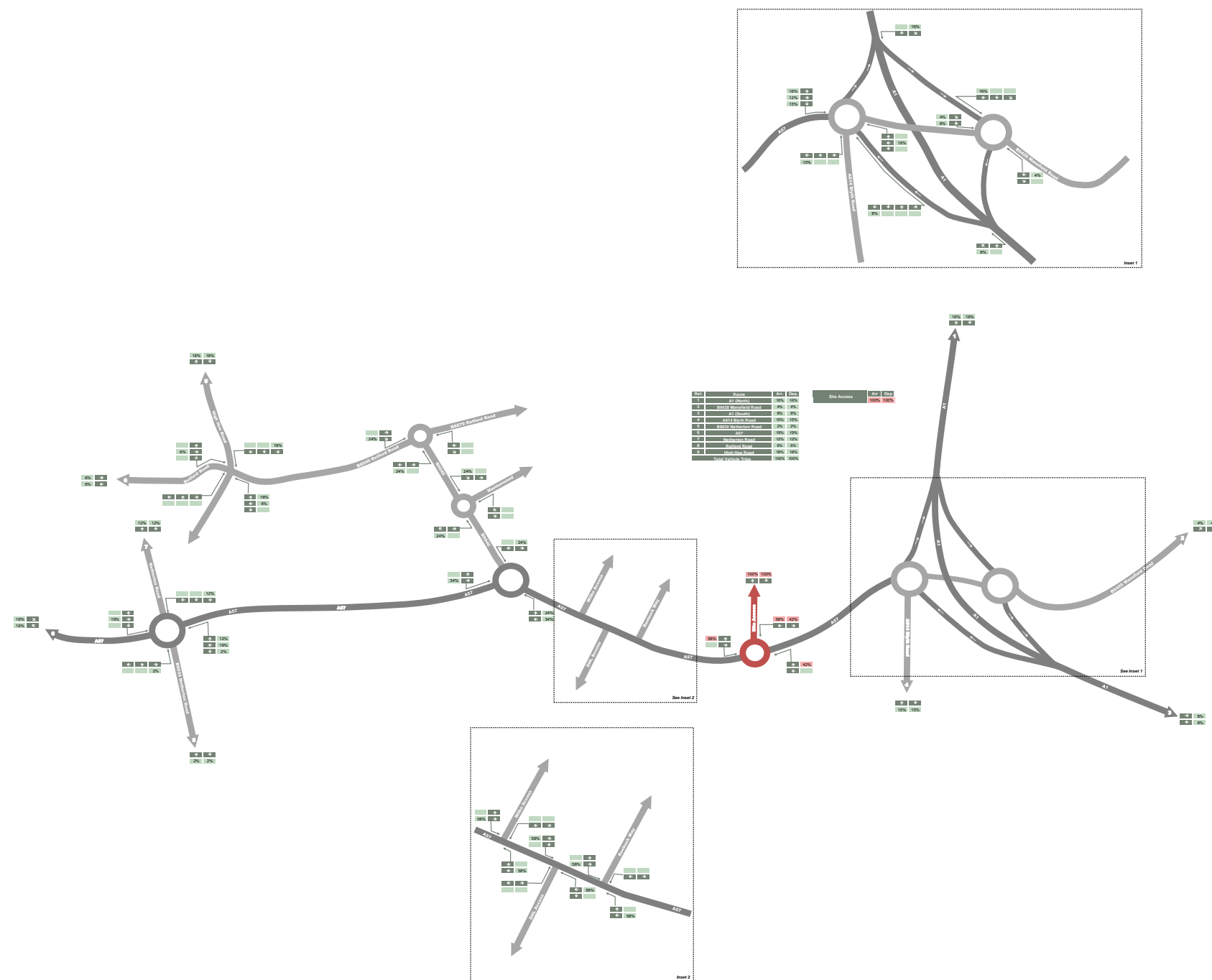
Regards

Alistair Gregory
Head of Transport - Midlands




Tetra Tech

Executive Park, Avalon Way, Anstey, Leicester, Leicestershire, LE7 7GR

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Mob: +44 777 556 1531



Key:

-  Primary Road
-  Secondary Road
-  Proposed Site Access

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution.

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 11 Waterloo Square
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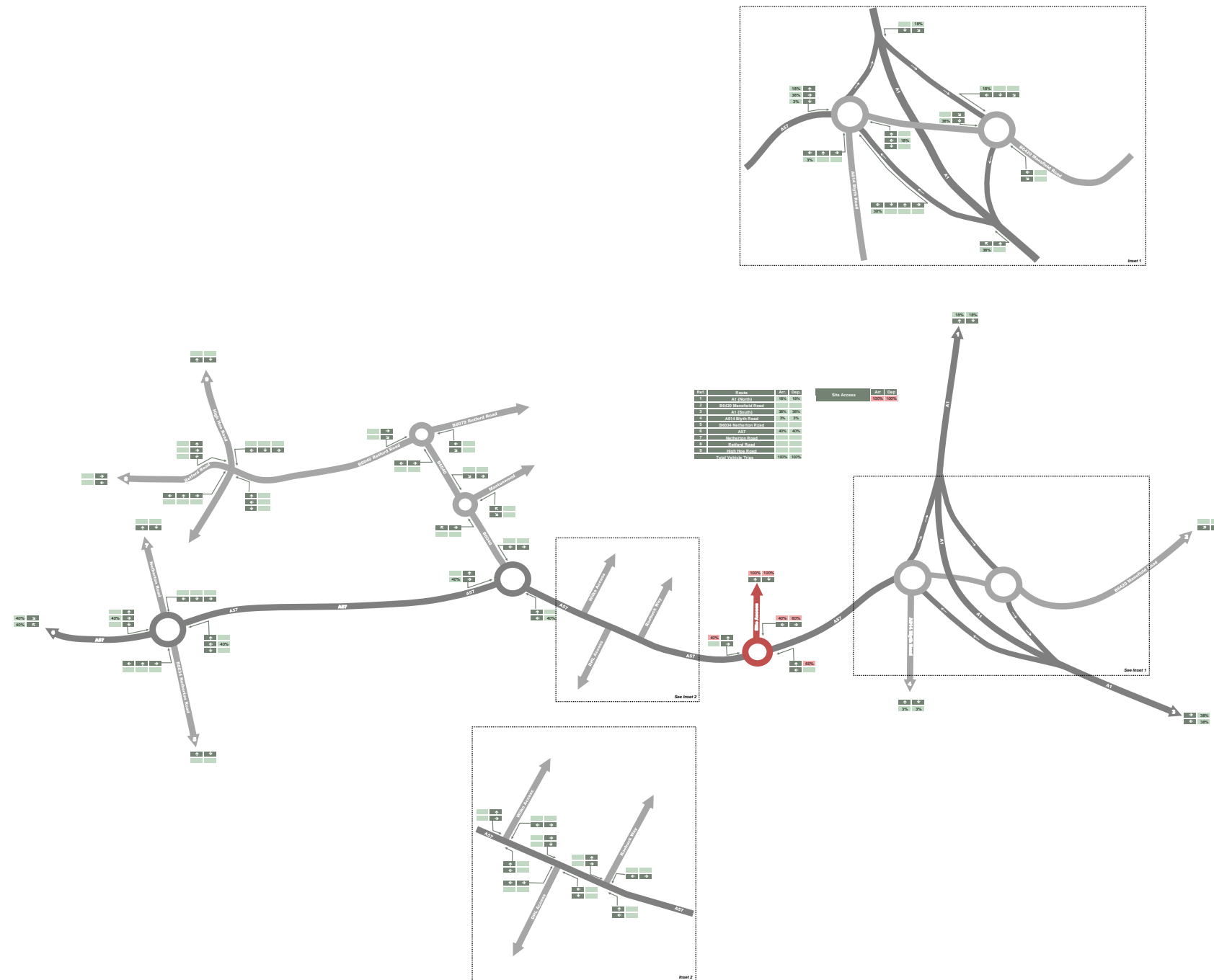
Client:
 Caddick Developments Ltd

Project:
 Proposed Employment Site on Land at Osberton




Figure Title:
 Vehicle Trip Distribution (Car/LGV)

Scale: Not to scale | Figure Status: Issue

Job Number: 5080 | Figure Number: Figure 41



Key:

-  Primary Road
-  Secondary Road
-  Proposed Site Access

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution.

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Client:

Caddick Developments Ltd

Project:

Proposed Employment Site on Land at Osberton

Figure Title:

Vehicle Trip Distribution (HGV)

Scale:

Not to scale

Figure Status:

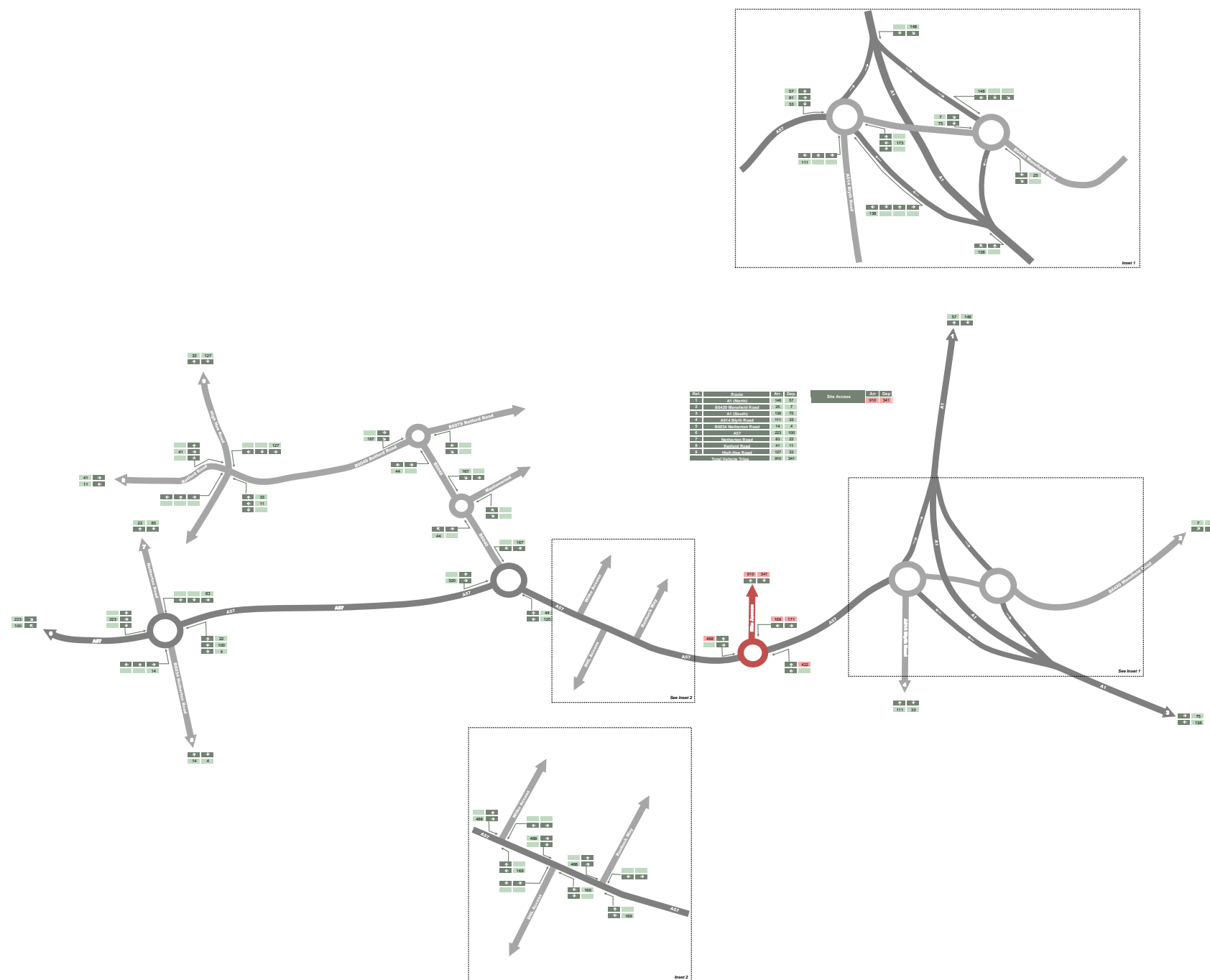
Issue

Job Number:

5080

Figure Number:

Figure 42



Key:

- Primary Road
- Secondary Road
- Proposed Site Access

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution.

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Project:

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Figure Title:

2030/2037 Development Traffic Flows (Total) - AM Peak Hour

Scale:

Not to scale

Figure Status:

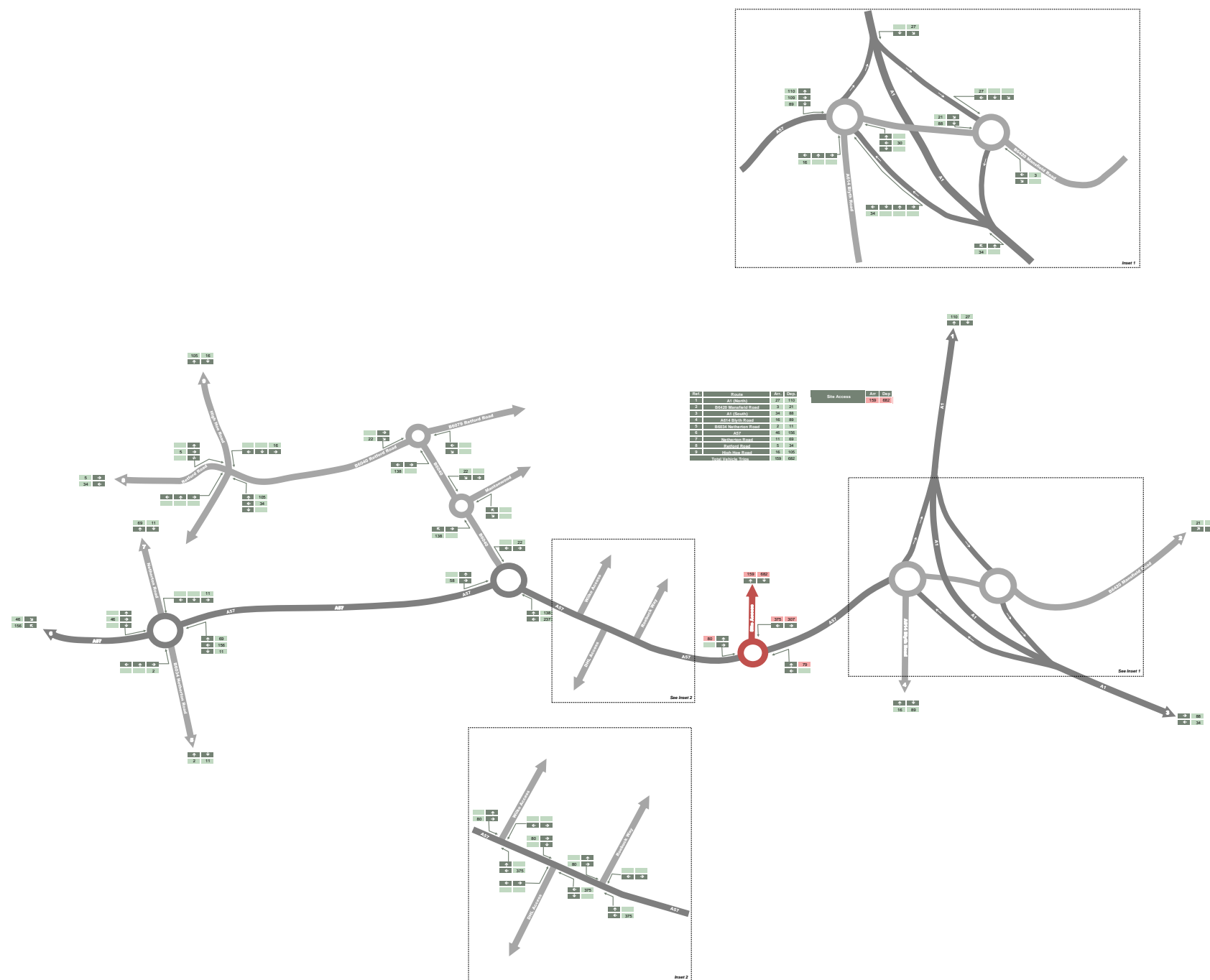
Issue

Job Number:




5080

Figure Number:

Figure 53



Key:

-  Primary Road
-  Secondary Road
-  Proposed Site Access

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution.

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Project:
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Figure Title:
 2030/2037 Development Traffic Flows (Total) - PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 5080 | Figure Number: Figure 54

Appendix A

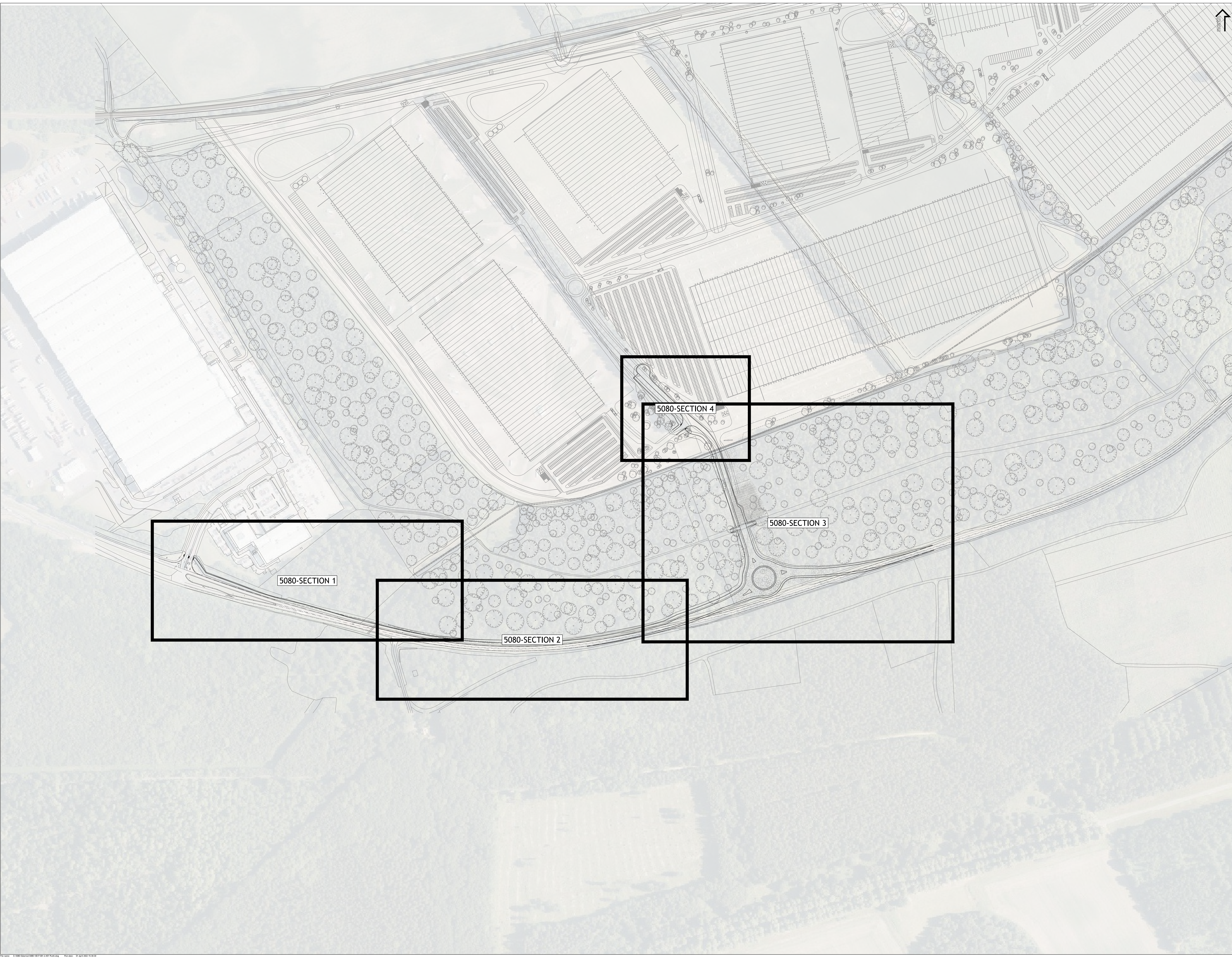
Proposed Site Access Drawings

DO NOT SCALE

NOTES

GENERAL NOTES
 1. THE TOPOGRAPHICAL SURVEY IS BASED ON INFORMATION PRODUCED BY BWS, DRG, OSR BWS-02-23-AS-G-001, REV. F2, DATED 3 DECEMBER 2017. THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER FORE CONSULTING DESIGNS AND DRAWINGS IS NOT WARRANTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE CONSULTING.

DESIGN NOTES
 1. ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSIONS OF THE FOLLOWING DOCUMENTS:
 - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
 - SPECIFICATION FOR HIGHWAY WORKS (SHW);
 - MANUAL FOR STREETS (MFS); AND
 - NOTTINGHAMSHIRE COUNTY COUNCIL (NCC) DESIGN GUIDE AND SPECIFICATION.



REV	DESCRIPTION	DATE	BY
A	ROAD LAYOUT UPDATED	28.03.22	ML

Client:
CADDICK DEVELOPMENTS

Project:
**A57 ROUNDABOUT
 OSBERTON
 WORKSOP**

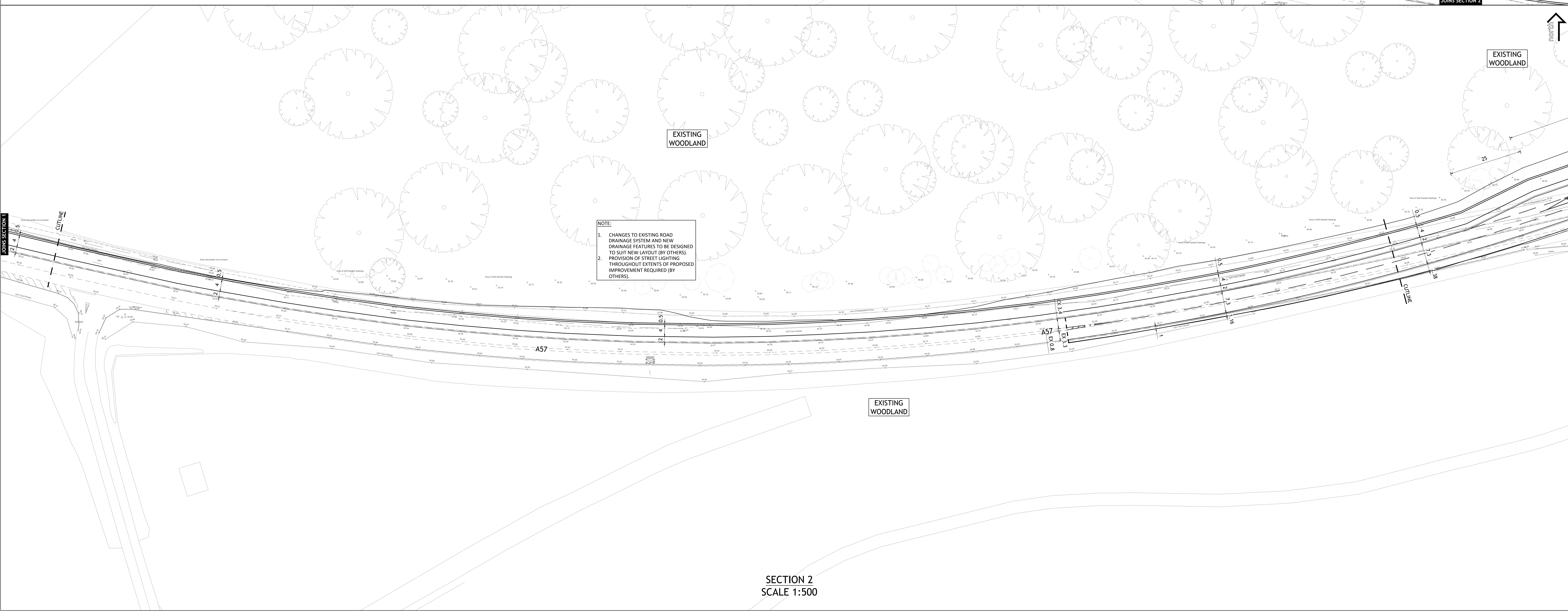
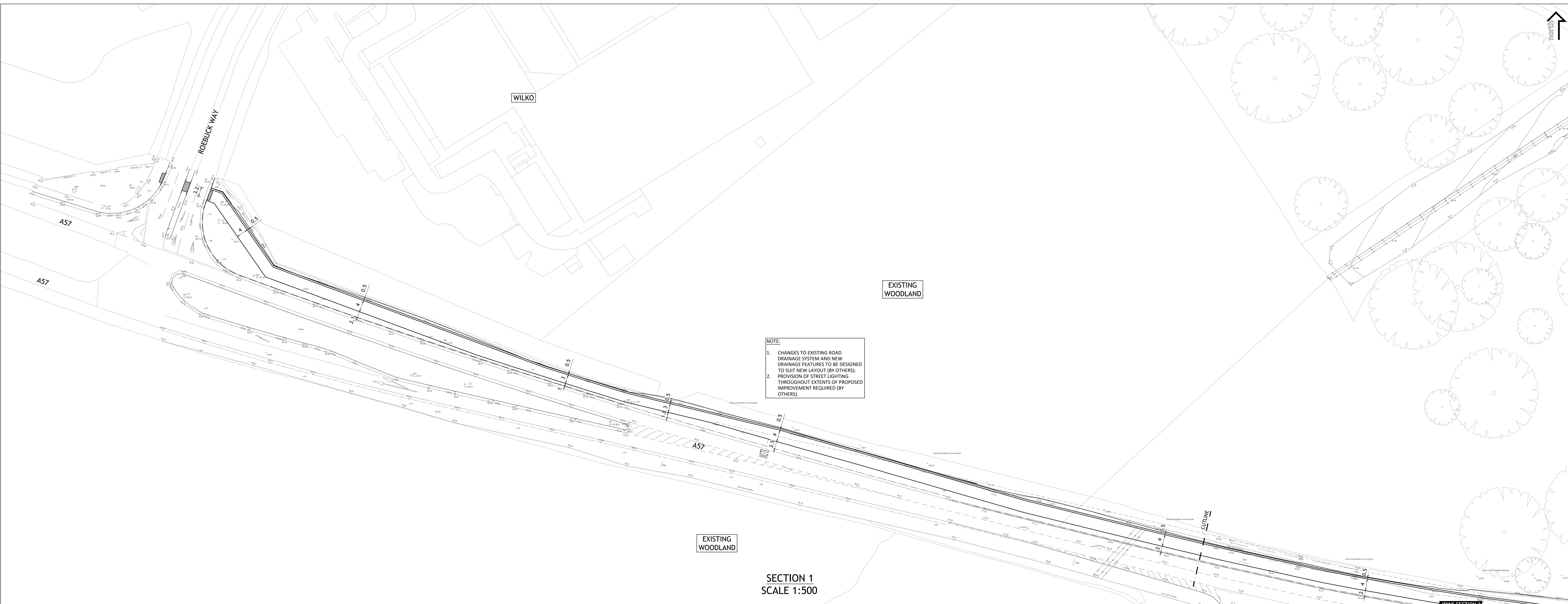
Drawing Title:
KEY PLAN

PRELIMINARY

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 Leeds
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 0113 2460204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

Project No	PI	Issue No	Scale	Sheet No	Sheet Total
5080	100-P-001	22-12-2021	1:2000	A	A0

- GENERAL NOTES
1. THE TOPOGRAPHICAL SURVEY IS BASED ON INFORMATION PRODUCED BY BWS, DRG, OSB, RWB, GZ, W & G, DOT, REV. 7, DATED 3 DECEMBER 2011. THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER DRAWINGS IS NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE CONSULTING.
- DESIGN NOTES
1. ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
 - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
 - SPECIFICATION FOR HIGHWAY WORKS (SHW);
 - MANUAL FOR STREETS (MFS); AND
 - NOTTINGHAMSHIRE COUNTY COUNCIL (NCC) DESIGN GUIDE AND SPECIFICATION.
 2. FOOTPATH GRADIENT AT TACTILE PAVING TO BE A MAXIMUM OF 1:12.
 3. EXISTING FENCES, VERGES/SHUBBERY AND OTHER PHYSICAL FEATURES TO BE REMOVED WITHIN THE AREA OF WORKS.
 4. ALL KERBS TO BE HB WITH 125mm KERB CHECK.
 5. ALL FENCING TO BE TAKEN UP AND REMOVED FROM SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS CLAUSE 201.9 AND SUITABLY DISPOSED.
 6. ALL IRONWORK WITHIN EXTENT OF WORKS TO BE LOWERED / RAISED AS REQUIRED.
 7. ALL PROPOSED ROAD MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING:
 - TRAFFIC SIGNS REGULATIONS AND GENERAL TRAFFIC SIGNS (TSGR);
 - TRAFFIC SIGNS MANUALS CHAPTER 5 - ROAD MARKINGS.
 8. DESIGN SPEED FOR A57: 60mph
DESIGN SPEED FOR PROPOSED ACCESS ROAD: 30mph
 9. EARTHWORKS SLOPES TO BE MAXIMUM 1:3.



REV	DESCRIPTION	DATE	BY
A	ROAD LAYOUT UPDATED	28.03.22	ML

Client:
CADDICK DEVELOPMENTS

Project:
A57 ROUNDABOUT
OSBERTON
WORKSOP

Drawing Title:
ENGINEERING LAYOUT
SHEET 1 OF 2

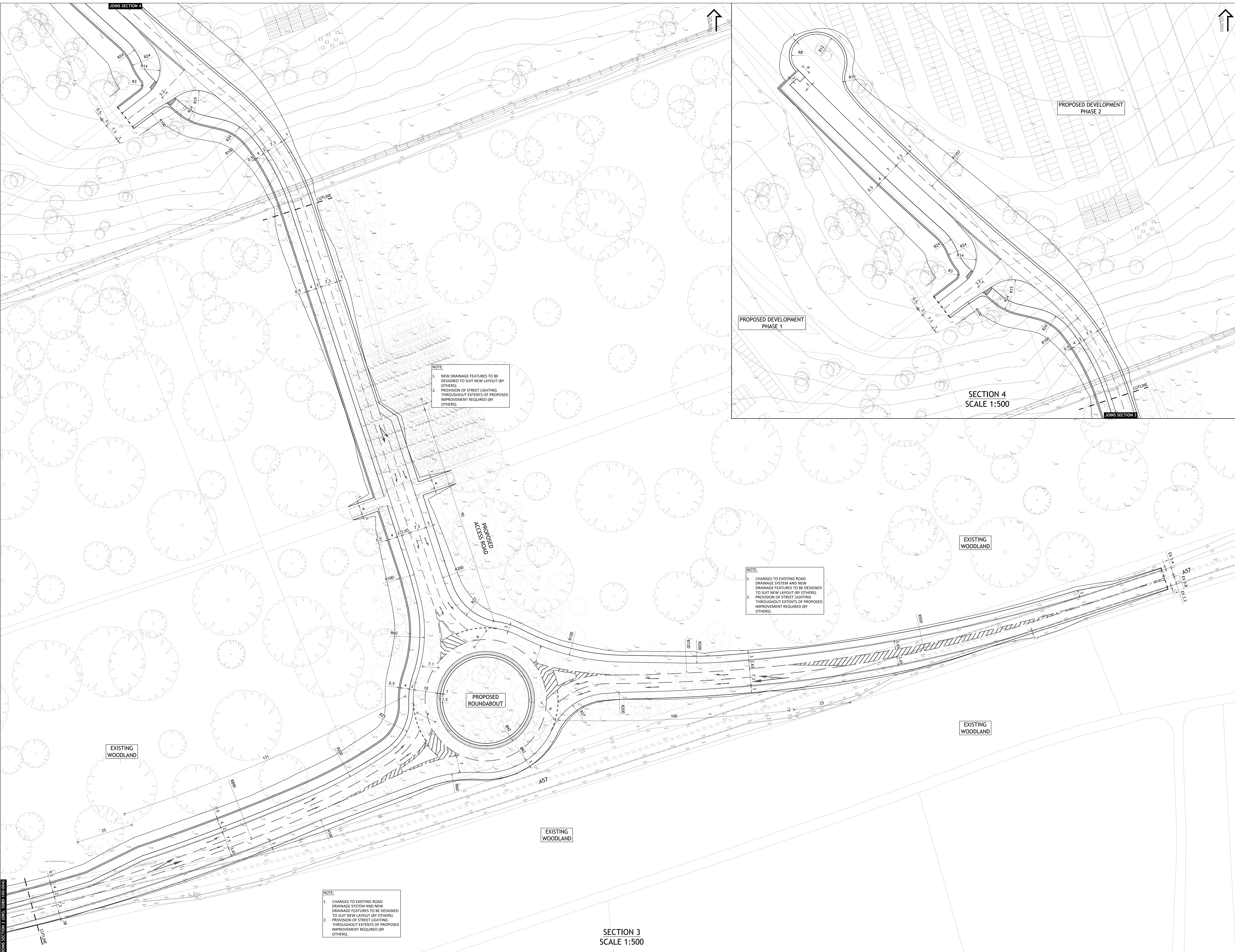
PRELIMINARY

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Rev No	Rev Desc	Date	Scale	Rev
ML	PI	22.12.2021	1:500	A0

5080 100-P-004 A

- GENERAL NOTES
- THE TOPOGRAPHICAL SURVEY IS BASED ON INFORMATION PRODUCED BY BWS, DRG, OSB, BWS, OS, JLS AND G-DOT, REV. P2, DATED 3 DECEMBER 2017. THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER FORE CONSULTING DESIGNS AND DRAWINGS IS NOT WARRANTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE CONSULTING.
- DESIGN NOTES
- ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
 - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
 - SPECIFICATION FOR HIGHWAY WORKS (SHW);
 - MANUAL FOR STREETS (MFS); AND
 - NOTTINGHAMSHIRE COUNTY COUNCIL (NCC) DESIGN GUIDE AND SPECIFICATION.
 - FOOTPATH GRADIENT AT TACTILE PAVING TO BE A MAXIMUM OF 1:12.
 - EXISTING FENCES, VERGES/SHUBBERY AND OTHER PHYSICAL FEATURES TO BE REMOVED WITHIN THE AREA OF WORKS.
 - ALL KERBS TO BE HB WITH 125mm KERB CHECK.
 - ALL FENCING TO BE TAKEN UP AND REMOVED FROM SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS CLAUSE 201.5 AND SUITABLY WORKED.
 - ALL IRONWORK WITHIN EXTENT OF WORKS TO BE LOWERED / RAISED AS REQUIRED.
 - ALL PROPOSED ROAD MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING:
 - TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS (TSGRD);
 - TRAFFIC SIGNS MANUALS CHAPTER 5 - ROAD MARKINGS.
 - DESIGN SPEED FOR A57: 60mph
 DESIGN SPEED FOR PROPOSED ACCESS ROAD: 30mph
 - EARTHWORKS SLOPES TO BE MAXIMUM 1:3.



NOTE:
 1. NEW DRAINAGE FEATURES TO BE DESIGNED TO SUIT NEW LAYOUT (BY OTHERS).
 2. PROVISION OF STREET LIGHTING THROUGHOUT EXTENTS OF PROPOSED IMPROVEMENT REQUIRED (BY OTHERS).

NOTE:
 1. CHANGES TO EXISTING ROAD DRAINAGE SYSTEM AND NEW DRAINAGE FEATURES TO BE DESIGNED TO SUIT NEW LAYOUT (BY OTHERS).
 2. PROVISION OF STREET LIGHTING THROUGHOUT EXTENTS OF PROPOSED IMPROVEMENT REQUIRED (BY OTHERS).

NOTE:
 1. CHANGES TO EXISTING ROAD DRAINAGE SYSTEM AND NEW DRAINAGE FEATURES TO BE DESIGNED TO SUIT NEW LAYOUT (BY OTHERS).
 2. PROVISION OF STREET LIGHTING THROUGHOUT EXTENTS OF PROPOSED IMPROVEMENT REQUIRED (BY OTHERS).

SECTION 3
 SCALE 1:500

SECTION 4
 SCALE 1:500

REV	DESCRIPTION	DATE	BY
B	ROAD LAYOUT UPDATED	28.03.22	ML
A	CHANGES FOLLOWING COMMENTS	20.01.22	ML

Client:
CADDICK DEVELOPMENTS

Project:
**A57 ROUNDABOUT
 OSBERTON
 WORKSOP**

Drawing Title:
**ENGINEERING LAYOUT
 SHEET 2 OF 2**

PRELIMINARY

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Project No: 5080
 Drawing No: 100-P-005
 Date: 22.12.2021
 Scale: 1:500
 Sheet: B of A0

Appendix B

Stage 1 Road Safety Audit



A57 Worksop Bypass, Osberton – Proposed Roundabout Approximately 1.2km West of Apleyhead

**Road Safety Audit
Stage 1 - Completion of Preliminary Design**

in partnership with



SA2429A
February 2021

A57 Worksop Bypass, Osberton – Proposed Roundabout Approximately 1.2km West of Apleyhead

Stage 1 Road Safety Audit

Prepared for:

Martin Green of Nottinghamshire County Council Development Control

Via East Midlands Ltd
Bilsthorpe Business Park, Eakring Road, Bilsthorpe, Nottinghamshire, NG22 8ST

Registered Office: Bilsthorpe Highways Depot, Bilsthorpe Business Park, Eakring Road, Bilsthorpe, Newark NG22 8ST

1. Introduction

- 1.1** This report results from a Stage 1 Road Safety Audit carried out on a proposed three arm roundabout on the A57, approximately 1.2km west of Apleyhead at Osberton, Worksop in Nottinghamshire. The design drawings are by Fore Consulting Ltd for their Client Caddick Developments. The proposed roundabout will allow what appears to be very large industrial units to be built. It is noted that a separate pedestrian/cycle access is proposed which avoids the need for facilities adjacent the A57.
- 1.2** The Road Safety Audit has been carried out following a request received from Martin Green of Nottinghamshire County Council Development Control on 1st February 2021.
- 1.3** The Road Safety Audit Team membership approved by Kendrick Hourd, Service Manager (Safer Highways) at Via East Midlands, consisted of:
- Phil Gow - Audit Team Leader, Via East Midlands
Gareth Coles - Audit Team Member, Via East Midlands
- 1.4** The Audit Team Leader and Audit Team Member personally hold an internationally recognised Certificate of Competency in Road Safety Audit (Highways England Approved).
- 1.5** The Road Safety Audit comprised an examination of the following documents provided:
- 5080-100-SK-020 (unrev) GENERAL ARRANGEMENT OPTION 3
5080-100-SK-021 (unrev) ENGINEERING LAYOUT OPTION 3
5080-100-SK-022 (unrev) SWEEP PATH ANALYSIS OPTION 3
DRAFT 1018 SITE PLAN OPTION 8
- 1.6** The Road Safety Audit took place at private locations away from Trent Bridge House, the Via East Midlands Ltd offices in West Bridgford, Nottingham on February 2nd 2021. The Audit Team visited the site of the proposed three arm roundabout on Tuesday 2nd February 2021 at around 2pm. During the site visit the weather was a little misty and the road surface was damp. Traffic flows appeared relatively normal despite being during the third Covid lockdown. High percentages of HGVs were notable.
- 1.7** Site visits were undertaken in accordance with Via Highways Risk Assessment VRA-047 “Site Visits for Crash Site Investigations and Road Safety Audits”.
- 1.8** The audit has been carried out in accordance with Nottinghamshire County Council’s Road Safety Audit Policy, following the principles of DMRB GG 119. The audit has been carried out with the sole purpose of identifying features of the scheme which could, in our view, lead to road safety problems. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

- 1.9** Road Safety Audit is only concerned with road safety matters. It does not consider structural safety nor health and safety issues connected with construction, maintenance and operation. At Stage 3, Road Safety Audit is not a check that the scheme has been constructed in accordance with the design.

- 1.10** All comments and recommendations are referenced to the design drawings and the locations are indicated on a plan within this report.

2. Items raised in previous road safety audit(s)

- 2.1** The Audit Team is not aware of any other Road Safety Audits having been carried out on this proposal.

3. Items raised at this Stage 1 Audit

3.1 Problem

Location: A57 Eastbound approach (towards A1T) to the proposed roundabout

Summary: Vehicle occupant injuries in sideswipe collisions as ahead vehicles move from the nearside lane into the offside lane.

Most of the A57 eastbound (towards A1T) vehicles will be travelling ahead, requiring the offside lane, at the proposed roundabout. The design very sensibly 'defaults' the vehicles into the offside ahead lane by developing the taper, of the lane line, from the kerb line. However, the two approach lanes are very long. This could lead to the ahead vehicles 'drifting' into the nearside left turn lane. Sideswipe collisions could occur as the ahead vehicle tries to re-enter the offside lane. The side swipe collision could also occur on the roundabout circulatory. Vehicle occupants will be injured in these collisions.

Recommendation

If capacity/turning manoeuvres allow the left turn lane could be shortened.

Alternatively/additionally more 'ahead' and 'left' arrows should be added. The lane dividing line could also be changed to a 1m line 1m gap (assuming the regulations permit this) which is a stronger line used where traffic flows split to go in different directions. Lay an area of hatching, on the roundabout circulatory, in front of the nosing of side road splitter island to confirm that the nearside left turn lane cannot be used to go ahead on the roundabout. (see 3.4)

3.2 Problem

Location: A57 Westbound (towards Worksop) approach to the proposed roundabout

Summary: Vehicle occupant injuries in sideswipe collisions as ahead vehicles move from the offside lane into the nearside lane.

Most of the A57 Worksop bound vehicles will be travelling ahead, requiring the nearside lane, at the proposed roundabout. However, all the Worksop bound traffic has been defaulted to enter the offside lane which goes right into the new development. This means vehicles, wishing to go ahead, will have to move back into the nearside lane. Sideswipe collisions could occur with vehicles already in the nearside lane. Vehicle occupants will be injured in these collisions.

Recommendation

Swap the side of the taper, to develop from the centreline, on the Worksop bound approach to the proposed roundabout. This will default all the traffic into the more appropriate nearside ahead lane.

3.3 Problem

Location: A57 westbound (towards Worksop) approach to the proposed roundabout

Summary: Vehicle occupant injuries in sideswipe collisions as ahead vehicles move from the offside lane into the nearside lane.

Most of the A57 westbound (towards Worksop) vehicles will be travelling ahead, requiring the offside lane, at the proposed roundabout. The design should be amended as per recommendation 3.2 above defaulting traffic to the nearside ahead lane. However, the two approach lanes are very long. This could lead to the ahead vehicles 'drifting' into offside right turn lane or using it to overtake slower moving ahead vehicles. Sideswipe collisions could occur as the ahead vehicle tries to re-enter the nearside lane. Vehicle occupants will be injured in these collisions.

Recommendation

If capacity/turning manoeuvres allow the two approach lanes could be shortened.

Alternatively/additionally more 'ahead' and 'right' arrows should be added.

3.4 Problem

Location: Roundabout circulatory.

Summary: Vehicle occupant injuries in sideswipe collisions due to vehicles mistakenly circulating in pairs.

The proposed layout shows two lanes on the roundabout circulatory. This gives the impression the outer most (nearside) lane can be used to circulate when turning right or U-turning. However, this is not the case as all the right or U turns would use the inner most (offside) lane. The two circulating lanes give the impression areas are available to vehicles encouraging inappropriate lane use. This could result in sideswipe collisions, injuring vehicle occupants, where vehicles mistakenly use the outer lane to turn right.

Recommendation

Lay an area of hatching, on the roundabout circulatory outer lane, directly in front of the nosing of all three splitter islands. This will clarify the operation of the roundabout by showing these areas are unavailable to traffic.

3.5 Problem

Location: Throughout the extents of the improvement

Summary: Vehicle occupant injuries in sideswipe collisions due to poor junction and lane definition during the hours of darkness.

The roundabout layout and lane destination will not be clearly visible during the hours of darkness. Drivers will be unclear how the junction operates and where the lanes are destined for as the lane markings will be hard to see. Numerous collision scenarios will occur injuring vehicle occupants.

Additionally, two wheelers on the roundabout will be less conspicuous at night and more susceptible to being hit by vehicles.

Recommendation

Provide street lighting throughout the extents of the improvement.

5. Audit Team Statement

We certify that this Road Safety Audit has been carried out in accordance with Nottinghamshire County Council policy.

Road Safety Audit Team Leader



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