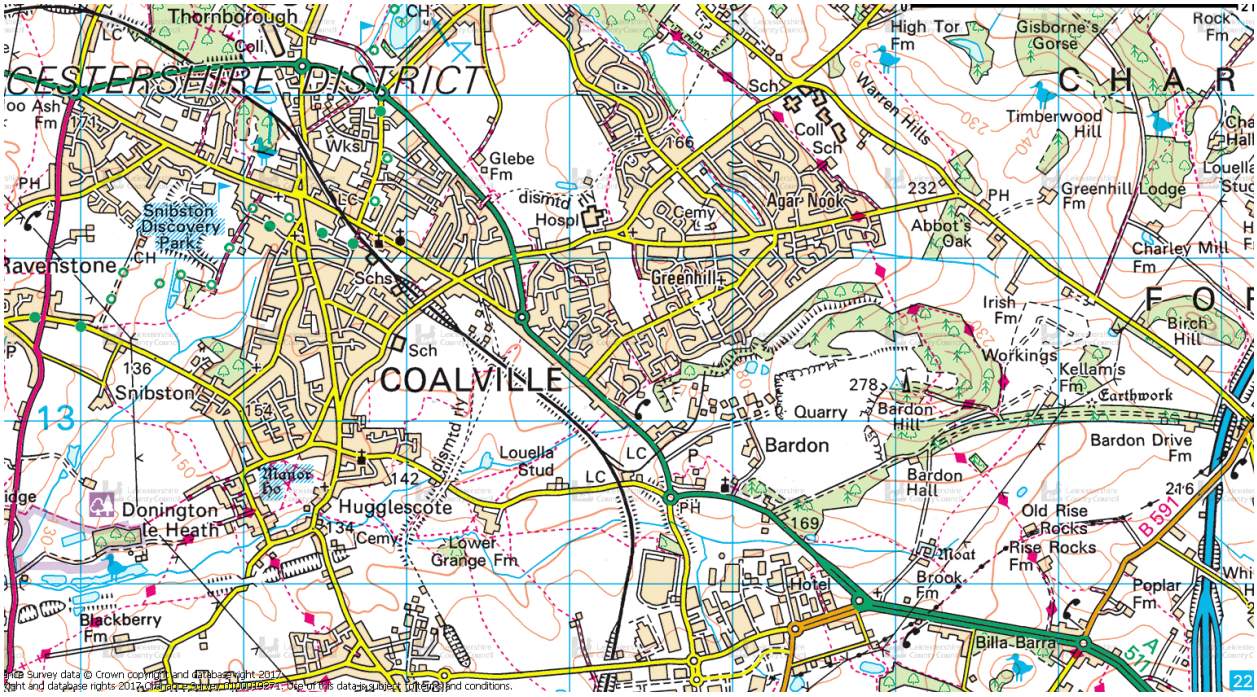
0038.000 COALVILLE GROWTH STRATEGY

JUNCTION OPTIONS FEASIBILITY REPORT (STAGE 1)



TRAFFIC AND SIGNALS TEAM
HIGHWAYS COMMISSIONING SERVICE

OCTOBER 2017

QUALITY MANAGEMENT:

	Issue 1	Date
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COALVILLE GROWTH STRATEGY (CGS)

JUNCTION OPTIONS FEASIBILITY REPORT (STAGE 1)

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1.0 INTRODUCTION

1.1 A Feasibility and Scoping Package produced by the Infrastructure Planning Team details the scope and extent of this feasibility work (see appendix A). The primary objective of this study is to identify design options which can meet the needs of future modelled traffic for the A511 corridor between M1 J22 and A42 J13 and the wider Coalville area, using LLITM forecast flows which include committed developments. The main thrust of the feasibility work outlined in the brief is:-

(a) Review current designs prepared by a number of external consultants and provide advice on the feasibility of these designs.

(b) Undertake further option appraisal to meet 2031 flows and provide appraisal and cost estimates of each option (including the external consultant designs).

1.2 Some of the proposals identified in this report are preliminary at this stage and the engineering feasibility needs to be established on a topographical base. At this stage no topographical surveys, safety audits, utility enquiries or public engagement has been undertaken.

1.3 The level of preliminary design work carried out so far is considered sufficient for presentation at any internal consultations.

2.0 BACKGROUND

2.1 The background provided in the scheme brief states:

"NWLDC has put in place a funding mechanism, known as the Coalville Growth Strategy (CGS), which prioritises financial contributions by developers, towards the delivery of transport infrastructure ahead of other items.

The objective of the CGS in to identify and implement highway network improvements to support growth, tackle congestion and maximise the use of the highway network in the context of planned growth in the area"

2.2 The junctions set out in the brief as in scope include:

- A511/Discovery Way, Ashby
- A511/Nottingham Road, Ashby
- A511/B591 (Flying Horse Roundabout), Markfield
- A511/Whitwick Road Roundabout, Coalville
- A511/Thornborough Road Roundabout, Coalville
- A511/A447 (Hoo Ash Roundabout), Coalville
- A50/Markfield Lane Roundabout, Field Head

2.3 Following the issue of the brief, the first two junctions on this list (A511/Discovery Way and A511/Nottingham Road) were quickly progressed through the feasibility and detailed design process for construction during the current financial year under available National Productivity Investment Funding (NPIF). Therefore these two junctions no longer are in scope in this study. It should also be noted that this report does not cover A511/A42 (J13) and A511/M1 (J22) as both of these junctions have been recently improved.

2.4 An additional instruction was received from the client to omit the A50/Markfield Lane (Field Head Roundabout) junction from this stage 1 report. This junction will now be included the CGS (Part 2) study.

3.0 TRAFFIC FLOWS

3.1 Traffic Flow Analysis – All Junctions.

3.2 12-hour traffic surveys were carried out in April 2017 and the abstracted peak period information is shown in Appendix B for each junction. LLITM forecast flows have been used for the 2031 scenarios and these have been provided by the traffic modelling team.

3.3 The method of deriving the 2031 flows is as follows:
LLITM was used to generate traffic flows for each junction for 2016 and 2031 scenarios. The 2016 flows were subtracted from the 2031 flows and the differences in flows were then applied to the 2017 actual base counts. For robustness any flows that LLITM predicted to reduce in 2031 were ignored and the flow from the 2017 actual base count was used (although at all junctions most turning movements are predicted to increase with a few exceptions). Appendix B shows the derived 2031 design flows used for each junction in the study.

3.4 When existing and proposed roundabout junctions have been modelled using Junction 9 software (ARCADY), correction factors have been applied to allow for unequal lane usage on the A511 where required. If correction factors were not applied the software would assume that roundabout entry lanes are equally used by traffic and the results would show overly optimistic results. All results shown in this report (Practical Reserve Capacity and Queue Lengths) are corrected to allow for unequal lane usage. The exception to this is where proposed mitigation schemes include a 2 lane entry and 2 lane exit on the A511 arms when it is assumed that traffic will use both lanes given they will have a 2 lane exit.

4.0 EXISTING JUNCTION CAPACITIES (2017 BASE FLOWS)

4.1 The table below summarises the existing capacities of each junction with 2017 base flows.

	2017 AM		2017 PM	
JUNCTION	NRC/PRC*	MAX Q	NRC/PRC*	MAX Q
A511 / B591 (Flying Horse Roundabout), Markfield. Signal Roundabout.	14%	12 pcu (A50 inbound)**	11%	13 pcu (A50 inbound)**
A511 / Whitwick Road Roundabout, Coalville Standard Roundabout.	-7%	21 pcu (A511 westbound)	2%	7 pcu (A511 westbound)
A511/Thornborough Road Roundabout, Coalville Standard Roundabout.	-7%	21 pcu (A511 westbound)	0%	10 pcu (A511 eastbound)
A511/A447 (Hoo Ash Roundabout), Coalville Standard Roundabout.	-13%	60 pcu (A511 eastbound)	-7%	40 pcu (A511 westbound)

*NRC (Network Residual Capacity) shows how much traffic can be increased or decreased through the roundabout to obtain satisfactory operation, this is similar to Practical Reserve Capacity (PRC) quoted for traffic signal junctions and signalised Roundabouts.

** This is an average queue for the whole peak hour. The queue will be longer in the "peak of the peak".

4.2 EXISTING JUNCTION CAPACITIES (2031 DESIGN FLOWS)

4.3 The table below summarises the predicted capacities of each junction with 2031 design flows applied to the base junction model.

	2031 AM		2031 PM	
JUNCTION	NRC/PRC*	MAX Q	NRC/PRC*	MAX Q
A511 / B591 (Flying Horse Roundabout), Markfield. Signal Roundabout.	-6%	24 pcu (A511 inbound)**	-16%	51 pcu (A511 inbound)**
A511 / Whitwick Road Roundabout, Coalville Standard Roundabout.	-18%	70 pcu (A511 eastbound)	-14%	61 pcu (A511 westbound)
A511/Thornborough Road Roundabout, Coalville Standard Roundabout.	-12%	74 pcu (A511 eastbound)	-16%	109 pcu (A511 eastbound)
A511/A447 (Hoo Ash Roundabout), Coalville Standard Roundabout.	-19%	127 pcu (A511 eastbound)	-16%	128 pcu (A511 westbound)

*NRC (Network Residual Capacity) shows how much traffic can be increased or decreased through the roundabout to obtain satisfactory operation, this is similar to Practical Reserve Capacity (PRC) quoted for traffic signal junctions and signalised Roundabouts.

** This is an average queue for the whole peak hour. The queue will be longer in the "peak of the peak".

5.0 JUNCTION IMPROVEMENT OPTIONS

5.1 A511/B591 "FLYING HORSE" ROUNDABOUT

5.2 Four possible alternative schemes have been tested using the LINSIG traffic signal modelling software. Preliminary design drawings for the options are shown in Appendix D.

5.3 Option A is based on the design submitted with the brief that has been designed by Colin Buchanan (CB) consultants (drawing 17446-C-004). It involves widening both A511 approaches and converting the junction from a signalised roundabout to a traffic signal cross-roads junction. The Buchanan design has been modified to allow full signalisation of right turners into Copt Oak Road as it is felt it would be unsafe for right turners to turn in gaps on the dual carriageway. We have also made the assumption that the right turn into Stanton Lane would be banned, again on grounds of safety. To further improve capacity we have also restricted the movement from Stanton lane to left turn only. The revised design based on the original Buchanan design is shown in appendix D. Pedestrian facilities would be provided across A511 (E) and Copt Oak Road in this option. This option would be the most expensive to construct.

5.4 Option B involves banning the right turn movements from the A511 into Stanton Lane and banning the ahead and right turn movements from Copt Oak Road and Stanton Lane. For robustness in the junction model, it has been assumed that right turners and ahead traffic from Copt Oak Road will divert via J22 and come back to the junction on A511. It has also been assumed that the same diversion route will be used by vehicles wishing to turn right from A511 into Stanton Lane. This option would be relatively cheap to implement with only a very small sliver of carriageway construction being required. Pedestrian facilities would be provided across A511 (E) in this option although it would be easy to incorporate pedestrian facilities across Copt Oak Road if required. Further LLITM modelling would need to be undertaken to establish the impact on M1 J22 and other surrounding junctions due to the displacement of traffic caused by banning turning movements.

5.5 Option C would see the junction layout remain unchanged with the exception of a new dedicated left turn lane on the A511 (W) approach and a reduction in width of the central reservation. This design has the benefit of not restricting any turning movements at the junction although there may be times when blocking occurs in the circulating carriageway due to a queue of right turn traffic into Stanton Lane (this currently happens but sporadically). Pedestrian facilities would remain across A511 (E) in this option although it would be easy to incorporate pedestrian facilities across Copt Oak Road if required.

5.6 Option D is essentially Option B with the additional dedicated left turn lane as shown in option C. This scheme provides the best possible capacity improvement at the junction. Pedestrian facilities would remain across A511 (E) in this option although it would be easy to incorporate pedestrian facilities across Copt Oak Road if required. Further LLITM modelling would need to be undertaken to establish the impact on M1 J22 and other surrounding junctions due to the displacement of traffic caused by banning turning movements.

5.7 A summary of benefits, capacities and costs for each option is detailed in Appendix C and preliminary design drawings are shown in Appendix D.

5.8 Summary of Modelling Results

5.9 The table below shows a comparison of the capacity results of the four options for 2017 base flows and 2031 design flows:

Option	Reserve Capacity (PRC) 2017		Reserve Capacity (PRC) 2031	
	AM Peak	PM Peak	AM Peak	PM Peak
Option A (CB)	36%	18%	12%	14%
Option B (LCC)	20%	16%	6%	2%
Option C (LCC)	27%	22%	8%	5%
Option D (LCC)	36%	41%	13%	17%

5.10 The above table shows that Option D provides the best results in both 2017 and 2031 scenarios. However all four options will provide positive reserve capacity and option B is likely to be the cheapest option to construct although this option will require the banning of 5 turning movements. For all options, the addition of MOVA control at the junction would further improve capacity by approx. 3%.

5.11 It should be noted that Option C is the only option which allows the right turn movement from A511 into Stanton Lane. Although this flow is low there will be times when a number of right turn vehicles arrive together on the circulating carriageway and block one of the ahead lanes for traffic exiting on the A511 east going towards M1 J22 and this will increase congestion when this happens (as it does now from time to time).

5.12 Other options have been looked at for this junction. For example, converting the roundabout back to a conventional roundabout (without traffic signal control). Also options have been considered that restrict access to Copt Oak Road (e.g. making this approach one way away from the junction). These options were all dismissed for various reasons such as not enough capacity benefit and the disruption that would be made to the wider network (especially in the event of disruption on the M1 such as an accident/closure).

5.13 Site observations have been undertaken at this junction and it was noted that there are instances where traffic queues back from the filling station on the northern carriageway. This is caused by traffic queuing to get onto the garage forecourt, whilst waiting for fuel pumps to become available. On occasions, the queue will block traffic in the nearside lane (heading towards M1 J22) which leads to traffic in the nearside lane having to merge into lane 2, effectively reducing the available number of lanes from 2 to 1. This problem is made worse due to the fact that the filling pump for HGV's is located near to the garage entrance so if an HGV is being filled with a second HGV waiting behind then it is likely that traffic in the nearside lane on the A511 will become blocked. Options A, C and D will all mitigate this problem as an additional dedicated left turn lane will be provided on the east-bound approach which will also serve as a storage area for traffic queuing back from the filling station. This will allow

storage for approx. 10 pcu's from the filling station before any blocking will occur to traffic going ahead towards M1 J22. The blocking that sometimes occurs at the filling station has not been factored into any of the LINSIG capacity results due to the sporadic nature of when this occurs.

5.14 A summary of each option for this junction is shown in appendix C including preliminary cost estimates.

6.0 JUNCTION IMPROVEMENT OPTIONS

6.1 A511/WHITWICK ROAD ROUNDABOUT

6.2 Three possible alternative schemes have been tested using the LINSIG traffic signal modelling software and Junctions 9 roundabout modelling software. Preliminary design drawings for the options are shown in Appendix D.

6.3 Option A is based on the design submitted with the brief that has been designed by Colin Buchanan consultants (drawing 17446-H-004). It involves extensive widening on all approaches and exits of the roundabout to create 3 lane approaches (all arms) and 2 lane exits on the A511. This option is likely to be the most expensive to construct and has the dis-benefit of reducing the width of the existing footway/cycleways on Whitwick Road to 2.0m. The scheme will see the junction remain as a standard roundabout but it should be noted that the design will require departures from DMRB standards. Also no controlled pedestrian facilities have been provided in this design.

6.4 Option B is based on the design submitted with the brief that has been designed by White Young Green consultants (drawing A059068-35-52 revA). This scheme involves widening the A511 and Whitwick Road approaches to 3 lanes and provision of a longer 2 lane approach on Hermitage Road. 2 lane exits will also be provided on the A511. This scheme would see the roundabout fully signal controlled with signalised pedestrian/cycle crossing facilities provided on each arm. It should be noted that sub-standard lane widths would be provided on Whitwick Road and the existing footway/cycleway on Whitwick Road would be reduced in width to accommodate the narrow lanes. In addition the nearside left turn lane on Whitwick Road would only be long enough to store 2 vehicles and is likely to suffer lane starvation.

6.5 Option C (LCC Option) would see the junction fully signalised as per the WYG option. However, only 2 approach lanes would be provided on each approach and 2 lane exits provided on the A511. To gain capacity and prevent sub-standard lanes/narrowing of the cycleway on Whitwick Road, it is anticipated that a small area of 3rd party land would be required on the eastern side of

Whitwick Road. A topographical survey would be required to confirm this and to confirm the extent of land required but based on the OS plan it is likely that approx. 40 sq.m would be required. This option is likely to be the cheapest to construct due to the reduced amount of carriageway construction required.

6.6 A summary of benefits, capacities and costs for each option is detailed in Appendix C and preliminary design drawings are shown in Appendix D.

6.7 Summary of Modelling Results

6.8 The table below shows a comparison of the capacity results of the three options for 2017 base flows and 2031 design flows:

Option	Reserve Capacity (PRC) 2017		Reserve Capacity (PRC) 2031	
	AM Peak	PM Peak	AM Peak	PM Peak
Option A (CB)	55%	52%	27%	29%
Option B (WYG)	52%	21%	19%	7%
Option C (LCC)	35%	17%	16%	0%

6.9 The above table shows that Option A (Buchanan Option) provides the best results in both 2017 and 2031 scenarios. However all three options will provide positive reserve capacity with the exception of Option C which will have 0% reserve capacity in the 2031 PM scenario (but no excessive queues or delay). Option C will also be by far the cheapest scheme to construct.

6.10 Another option investigated at this location was a signalised crossroads but initial modelling work showed that replacing the roundabout with a traffic signal junction would not achieve sufficient capacity due to relatively high numbers of right turning traffic on some approaches. This option is also likely to be expensive in comparison to improving the existing roundabout. Also Option C was considered but without traffic signal control (standard roundabout) but this option had less capacity than the signalised option (with a very long queue predicted to form on Hermitage Road).

6.11 A summary of each option for this junction is shown in appendix C including preliminary cost estimates.

7.0 JUNCTION IMPROVEMENT OPTIONS

7.1 A511/THORNBOROUGH ROAD ROUNDABOUT

7.2 Three possible alternative schemes have been tested using the LINSIG traffic signal modelling software and Junctions 9 roundabout modelling software. Preliminary design drawings for the options are shown in Appendix D.

7.3 Option A is based on the design submitted with the brief that has been designed by Colin Buchanan consultants (drawing 17446-J-004). It involves extensive widening on all approaches and exits of the roundabout to create 3 lane approaches (all arms) and 2 lane exits on the A511. This option is likely to be the most expensive to construct given the large amount of new carriageway that would need to be constructed. The scheme will see the junction remain as a standard roundabout but it should be noted that the design will require departures from DMRB roundabout design standards. Also no controlled pedestrian facilities have been provided in this design although the central splitter islands are shown substantially bigger in the design and would be able to accommodate crossing facilities such as signal controlled Toucans. The scheme also has the disadvantage of a sub-standard 2 into 1 merge on the A511 eastbound exit and an existing culvert will be affected by the scheme.

7.4 Option B is based on the design submitted with the brief that has been designed by White Young Green consultants (drawing A056098-35-51). This scheme involves the provision of 2 lane exits on the A511 and would see the junction remain as a standard roundabout. Controlled crossing facilities are proposed for the A511 approaches and the layout generally complies with DMRB design standards although the 2 into 1 exit merges on the A511 are to minimum standard and there may be reluctance by some drivers to use them. The culvert mentioned above would be affected due to the proposed carriageway widening.

7.5 Option C (LCC Option) is similar to the WYG proposal but features longer (above standard) 2 into 1 exit merges on the A511 exits to fully encourage use of both lanes on the A511 approaches for ahead traffic. In addition this design features widening on the circulating carriageway which will provide better traffic flow through the roundabout as well as providing more width for traffic entering from Thornborough Road as the current circulating width is substandard for the 3 lanes entering the roundabout on this approach. This option does not affect the culvert and retains the existing crossing facility on the western approach to the roundabout.

7.6 A summary of benefits, capacities and costs for each option is detailed in Appendix C and preliminary design drawings are shown in Appendix D.

7.7 Summary of Modelling Results

7.8 The table below shows a comparison of the capacity results of the three options for 2017 base flows and 2031 design flows:

Option	Reserve Capacity (PRC) 2017		Reserve Capacity (PRC) 2031	
	AM Peak	PM Peak	AM Peak	PM Peak
Option A (CB)	54%	44%	40%	30%
Option B (WYG)	15%	25%	3%	7%
Option C (LCC)	27%	28%	14%	15%

7.9 The above table shows that Option A (Buchanan Option) provides the best results in both 2017 and 2031 scenarios. However all three options will provide positive reserve capacity in the base and 2031 design year with Option C likely to be the cheapest scheme to construct.

7.10 Other options investigated at this location included a signalised crossroads and a fully signalised roundabout but initial modelling work showed that replacing the roundabout with a traffic signal junction would not achieve sufficient capacity due to relatively high numbers of right turning traffic on some approaches. The signalised roundabout option did not improve on any of the capacities shown in the above table therefore it is felt that this junction would be more suitable to be retained as a standard roundabout (with improved geometry).

7.11 A summary of each option for this junction is shown in appendix C including preliminary cost estimates.

8.0 JUNCTION IMPROVEMENT OPTIONS

8.1 A511 "HOO ASH" ROUNDABOUT

8.2 Three possible alternative schemes have been tested using the LINSIG traffic signal modelling software and Junctions 9 roundabout modelling software. Preliminary design drawings for the options are shown in Appendix D.

8.3 A potential option for this junction has been designed by Colin Buchanan consultants (drawing 17446-K-004). It involves widening on the A511 approaches and exits to create longer 2 lane approaches and 2 lane exits on the A511. The scheme also includes part signalisation of the roundabout with the A511 approaches being controlled by traffic signals. Although the LINSIG model prepared by CB consultants shows that this option has capacity, there is a fundamental flaw in the design in that the storage space on the circulating carriageway is insufficient to store enough vehicles so that blocking does not occur. For example, when the A511 approaches have right of way, if any more than 2 vehicles are waiting on the circulating carriageway in the nearside lanes this will then block the A511 exit. This blocking will be caused by vehicles turning right from the A511 approaches and traffic coming from the un-signalised arms when the circulating carriageway is on red. For these reasons this option has been deemed to be non-viable.

8.4 Option A is based on the design submitted with the brief that has been designed by White Young Green consultants (drawing A056098-35-56). This scheme involves the provision of a 2 lane exit on the A511 east side and would see the junction remain as a standard roundabout. The layout generally complies with DMRB design standards although the 2 into 1 exit merge is below standard and there may be reluctance by some drivers to use it. Minor widening is also proposed on the A511 (west) approach to create a slightly wider entry width. This scheme will be the cheaper than Option B although the capacity benefits will not be significant.

8.5 Option B is similar in some respects to the Colin Buchanan scheme but without any signalisation. The scheme will provide a longer 2 lane approach to the

junction on the A511from the west and long (above standard) 2 into 1 exit merges on the A511 exits. In addition, the Ashby Road approach has been widened to a 2 lane entry with flare to increase traffic flow over the give way line. The scheme utilises the existing layby on the A511 eastern side which would be converted to carriageway to form part of the 2 lane exit. It may be possible to shorten the 2 lane section on the exit and retain part of the layby but the drawing detailed in appendix D shows the entire layby being relocated to the east.

8.6 Other possible options have been investigated for this junction including full signalisation of the roundabout. It was found that signalising the roundabout as it is now (with no carriageway widening) would provide insufficient capacity. In addition, providing the approach and exit widening on the A511 (as per Option B) would create good capacity benefits. The addition of traffic signal control on top of this would create no further substantial benefit to the junction and could lead to problems with blocking on the circulating carriageway.

8.7 Summary of Modelling Results

8.8 The table below shows a comparison of the capacity results of the two options for 2017 base flows and 2031 design flows:

Option	Reserve Capacity (PRC) 2017		Reserve Capacity (PRC) 2031	
	AM Peak	PM Peak	AM Peak	PM Peak
Option A (WYG)	2%	5%	-5%	-6%
Option B (LCC)	29%	29%	21%	16%

8.9 The above table shows that Option B provides the best results in both 2017 and 2031 scenarios.

8.10 A summary of each option for this junction is shown in Appendix C including preliminary cost estimates.

9.0 INDICATIVE COST ESTIMATES

9.1 The estimates shown in Appendix C are preliminary budget estimates shown as a guide only.

9.2 Estimates do not include for Resource Cost Index of Road Construction (ROCOS) and no allowance has been made for Optimism Bias. A 25% Contingency has been applied however. Design and Supervision fees have also been included at a rate of 20% of the works cost.

9.3 No allowance has been made in the estimates for Statutory Undertakers diversions and NRSWA notices will need to be sent out to utility companies so accurate estimates can be obtained.

9.4 Estimates are based on OS mapping and topographical surveys will be required to produce more detailed ones.

9.5 A request will need to be made to the Engineering Design team for detailed cost estimates to be worked up for all or selected options.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 It is recommended that the peak period traffic flow modelling for the 2031 scenario be examined in greater detail when the various option scenarios have been modelled in LLITM or if it becomes apparent that any other changes may occur on the network such as additional development or changes to any committed developments (e.g. increased or reduced size or change in land use etc). Once this is completed, the following would be required to firm up the tentative proposals that are to be promoted for the next stage of the design:-

(a) Undertaking a topographical survey for each junction. It may also be beneficial to extend this survey to include the complete section of the A511 between Thornborough Road and Whitwick Road roundabouts should the possibility of making this entire section dual carriageway ever need to be considered.

(b) Works and statutory undertakers' costs to be more accurately estimated for the options to be promoted for further consideration.

(c) A Stage 1 safety audit to be commissioned once all interested parties are satisfied with the principles of the selected options.

(d) Undertake "before" Journey Time and Queue length analysis to enable after comparisons to be made on completion of any schemes.

APPENDIX A

WORK PACKAGE BRIEF

Work Package – Preliminary Brief (Traffic & Signals)

DATE:	25/10/16	**Project Manager (PM):**	Laura Grandidge
WORK PACKAGE NAME:	Coalville Growth Strategy (CGS)		

PROJECT TASKS: *(✓tick boxes below as appropriate)*

Feasibility & Scoping	✔	Procure and Commission Construction		Project Management of Design & Construction	

Scheme Details	Short term highway improvements delivering additional network capacity and assisting traffic flow along the A511 corridor between M1 J22 and A42 J13 and wider Coalville area.
Cost Code	ZYN 91 997 9BGO
Any Associated Documents:	Coalville Transport Study. Sustainable Transport Assessment (DRAFT) by Colin Buchanan, 24.6.11 Growth and Regeneration Impact and Gap Assessment report and Technical Appendix, by Systra
Staff Diary Code	Coalville Growth Strategy 0038 – 000 – Task code

Background

NWLDC has put in place a funding mechanism, known as the Coalville Growth Strategy (CGS), which prioritises financial contributions by developers, towards the delivery of transport infrastructure ahead of other items.

The objective of the CGS is to identify and implement highway improvements to support growth, tackle congestion and maximise the use of the highway network in the context of planned growth in the area. The delivery of further transport infrastructure;

- Aligns with the Strategic Economic Plan GA3 Coalville Growth Corridor.
- Builds on previous, current and already programmed investments in the area e.g. Local Sustainable Transport Fund, maximising the benefits.
- Unlocks and supports substantial housing and employment growth along the corridor, including in Coalville and Ashby.

It is anticipated that the National Productivity Investment Fund (NPIF) will also be used to fund some of the proposals designed as part of this brief. NPIF funding is available during 2017/ 18.

There may also be ways that strip widening work could be combined with maintenance based work funded by the Challenge Fund.

Scope

The plan included in this brief, adapted from a plan included in the Growth and Regeneration Impact and Gap Assessment report by Systra, indicates the locations of highway mitigation measures that should be considered as part of this brief.

Proposals should avoid the requirement for 3rd party land.

Further modelling work will be undertaken to inform the corridor strategy in the centre of Coalville, linked with development possibilities that may affect the following locations;

i. Bardon Link Road,
ii. Hugglescote Crossroads,
iii. Broomleys Cross Roads etc.

Following the outcomes of this work (expected in spring 2017) further design work and a business case can be developed.

Task Description

1. A511 junction with Discovery Way Signal controlled alternative access -
   i. strip widening,
   ii. removal of central reservation,
   iii. provision of signal controls including right turn facilities into and out of Discovery Way,
   iv. alter direction signing in immediate vicinity to positively sign new alternative routes.

2. A511, Nottingham Road junction at Tesco roundabout -
   i. strip widening on A511 southbound approach to Tesco roundabout
   ii. strip widening on Nottingham Road eastbound approach to Tesco roundabout
   iii. alter direction signing in immediate vicinity to positively sign new alternative routes.

3. A511 Flying Horse Roundabout, B591, Stanton Lane – New design proposal required.

   Original Systra Report proposal: replace the signal controlled roundabout with a signal controlled crossroads junction including;
   i. two right turn only lanes on Copt Oak Road
   ii. an ahead only lane on the A511 westbound approach towards Coalville,
   iii. a flare lane for left turning vehicles on Stanton Lane,
   iv. an ahead only land on the A511 Eastbound approach towards M1 J22.

4. Investigate strip widening type, traffic flow maximisation, capacity improvements along the A511 at;
   i. Whitwick Road, Hermitage Road (Morrison's) roundabout,
   ii. Thornborough Road (McDonald's) roundabout
   iii. and Hoo Ash (A511/ A447) roundabout.

5. Field Head roundabout, A50, Launde Lane, Markfield Lane - Consider if mitigation is now required following improvements at the M1 J22 roundabout and the proposed improvements at A511 junction

The highway proposals needed now can use designs previously proposed by Buchanan and Systra, but certainly do not have to reflect the original designs. In the time that has passed since the original proposals traffic and development patterns and the cost of construction have changed. The new proposals need to be viable schemes within the tight deliverability constraints of current funding sources whilst supporting economic growth.

In general terms,

1. For each location listed above, alternative designs to those proposed in the Buchanan/ Systra Reports or TAs can be recommended.

2. A number of designs, offering different levels of benefit, can be provided for a location, particularly where the ideal solution is likely to cost millions and a quick win design is

costing more like a few hundred thousand.

3. Provide the current construction cost of each proposal so that comparisons can be made.

4. Highlight the benefits of the proposals recommended

5. Document constraints that would make it difficult to implement the proposals you recommend even if the matter of cost is removed from the considerations.

Existing resources

A number of documents are available on the Shared Public drive. The original Coalville Transport Study by Buchanan and more recently the Growth and Regeneration Impact and Gap Assessment report by Systra and the accompanying Technical Appendix will provide you with comparative data.

T:\Public\Coalville Growth Strategy\Coalville Area Masterplan and study\Coalville Transport Study

The Stage 2A - Growth and Regeneration Impact and Gap Assessment Report, Draft, prepared in November 2016 presents a Mitigation Scenario based on including all known growth and regeneration aspirations within the Coalville area and identifying all mitigation in the Coalville area, except that of the Bardon Link Road, to show how far this mitigation is successful and the areas where issues are likely to occur. You can find this document and the Technical Appendix here,

T:\Public\Coalville Growth Strategy\Coalville Area Masterplan and study\Feb 17 Update

Within the Surveys and data link there is a number of Transport Assessments relating to recent planning applications.

T:\Public\Coalville Growth Strategy\07 Surveys and data

If you require more modelling information, base counts or turning movements you can go direct to Alex Gray about getting any required data. Alternatively, you can request the information through Infrastructure Planning.

Product Description

Provide a written report, with design drawings, detailing your findings.

Any exceptions to this should be reported to Laura Grandidge in the first instance.

Timescale

Ideally, the preliminary design and report should be completed by summer 2017.

Progress meetings should be arranged at intervals within the design process.

Constraints	All land required to be within the public highway.
Problem escalation and handling	Report any problems/ issues or change requirements in the first instance to Laura Grandidge (PM) – Ext 56820 or escalated to Lynne Stinson – Ext 57223 where appropriate

Figure 21. Locations of the Highway Mitigation Measures.

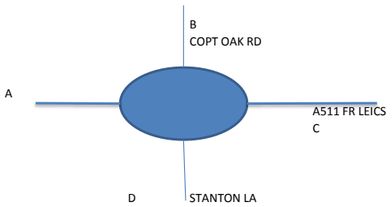
★ Locations to be considered in this brief

APPENDIX B

TRAFFIC FLOWS (2016 & 2031)

APPENDIX B - TRAFFIC FLOWS

JUNCTION 1 - A511/COPT OAK ROAD "FLYING HORSE"



2017 AM (7:30-8:30)

	A	B	C	D	
A		209	1566	57	1832
B	243		38	50	331
C	1655	68		18	1741
D	95	51	23		169
	1993	328	1627	125	4073

2031 design flows AM

	A	B	C	D	
A		290	1933	70	2293
B	301		192	50	543
C	1784	112		18	1914
D	136	80	23		239
	2221	482	2148	138	4989

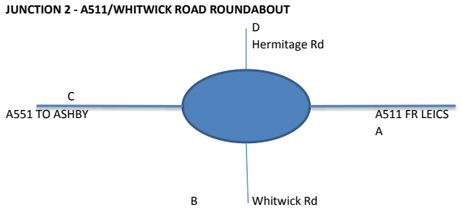
2017 PM (16:45-17:45)

	A	B	C	D	
A		322	1446	92	1860
B	216		56	37	309
C	1517	297		42	1856
D	78	58	23		159
	1811	677	1525	171	4184

2031 design flows PM

	A	B	C	D	
A		370	1811	122	2303
B	216		58	43	317
C	1780	301		47	2128
D	97	58	23		178
	2093	729	1892	212	4926

JUNCTION 2 - A511/WHITWICK ROAD ROUNDABOUT



2017 AM (8:15-9:15)

	A	B	C	D	
A		171	591	19	781
B	81		173	90	344
C	626	385		88	1099
D	25	224	138		387
	732	780	902	197	2611

2031 design flows AM

	A	B	C	D	
A		190	598	25	813
B	96		241	99	436
C	693	430		105	1228
D	35	341	173		549
	824	961	1012	229	3026

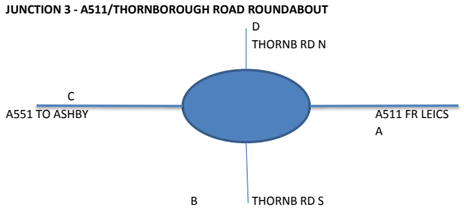
2017 PM (16:30-17:30)

	A	B	C	D	
A		155	649	41	845
B	200		349	225	774
C	650	233		143	1026
D	30	166	105		301
	880	554	1103	409	2946

2031 design flows PM

	A	B	C	D	
A		186	727	50	963
B	271		378	303	952
C	748	322		156	1226
D	41	200	113		354
	1060	708	1218	509	3495

JUNCTION 3 - A511/THORNBOROUGH ROAD ROUNDABOUT



2017 AM (8:00-9:00)

	A	B	C	D	
A		139	605	182	926
B	88		109	230	427
C	766	231		191	1188
D	231	249	168		648
	1085	619	882	603	3189

2031 design flows AM

	A	B	C	D	
A		147	691	197	1035
B	92		178	250	520
C	832	231		207	1270
D	291	288	182		761
	1215	666	1051	654	3586

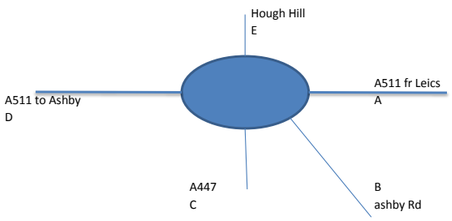
2017 PM (16:30-17:30)

	A	B	C	D	
A		159	731	228	1118
B	183		263	287	733
C	656	180		140	976
D	181	230	165		576
	1020	569	1159	655	3403

2031 design flows PM

	A	B	C	D	
A		161	821	250	1232
B	195		303	300	798
C	792	241		149	1182
D	233	230	187		650
	1220	632	1311	699	3862

JUNCTION 4 - A511/A447 "HOO ASH" ROUNDABOUT



2017 AM (8:00-9:00)

	A	B	C	D	E	
A		39	152	593	15	799
B	81		12	141	58	292
C	400	5		137	166	708
D	798	127	78		9	1012
E	74	54	113	26		267
	1353	225	355	897	248	3078

2031 DESIGN FLOWS AM

	A	B	C	D	E	
A		39	175	739	16	969
B	81		12	141	58	292
C	406	5		137	213	761
D	872	127	82		10	1091
E	74	57	122	43		296
	1433	228	391	1060	297	3409

2017 PM (16:30-17:30)

	A	B	C	D	E	
A	23	82	366	813	51	1335
B	58		14	147	45	264
C	232	7		166	117	522
D	611	110	104		16	841
E	33	62	174	16		285
	957	261	658	1142	229	3247

2031 DESIGN FLOWS PM

	A	B	C	D	E	
A	23	86	414	909	51	1483
B	73		15	147	51	286
C	273	7		172	153	605
D	772	110	104		25	1011
E	33	65	216	24		338
	1174	268	749	1252	280	3723

APPENDIX C

SUMMARY OF OPTIONS AND BUDGET COST ESTIMATES

COALVILLE GROWTH STRATEGY (PART 1) - SUMMARY OF SCHEME OPTIONS AND ESTIMATES

APPENDIX C

	A511/COPT OAK ROAD "FLYING HORSE ROUNDABOUT"					A511/WHITWICK ROAD ROUNDABOUT			
	EXISTING	**OPTION A**	**OPTION B**	**OPTION C**	**OPTION D**	**EXISTING**	**OPTION A**	**OPTION B**	**OPTION C**
DESCRIPTION	4 arm signalised roundabout (3 approaches signalised).	Convertion to traffic signal crossraods junction.	Conversion to traffic signalised "half roundabout" with only one right turn movement allowed (A511 to Copt Oak Road).	Maintain existing signalised roundabout but with an added lane on the A511 east-bound approach.	Combination of Options B and C to provide maximum capacity scheme.	Standard 4 arm roundabout with 47m Inscribe Circle Diamiter. All approaches are two lanes with ahead/left movements in nearside lane and right turn in offside lane.	Standard Roundabout but widened on all approaches and exits to anable 3 entry lanes on each approach and 2 exit lanes on A511 exits.	Fully signalised roundabout with 3 lane approaches and 2 lane exits on A511.	Fully signalised roundabout with 2 lane approaches and 2 lane exits on A511.
BENEFITS	N/A	Positive reserve capacity in 2031 AM and PM scenarios. Additional pedestrian crossing facility over Copt oak Road.	Positive reserve capacity in 2031 AM and PM scenarios. Scope to provide additional pedestrian crossing points. Inexpensive scheme due to no new carriageway construction.	Positive reserve capacity in 2031 AM and PM scenarios. Scope to provide additional pedestrian crossing over Copt Oak Road. Medium cost scheme but with the advantage of all widening being done in one location. Further improvements to traffic flow due to additional lane on A511 which will help avoid blocking by traffic queuing from the filling station. No restricted turning movements.	Best scheme in terms of capacity. Potential to include additional crossing facilities for pedestrians. Additional lane on A511 east-bound will help avoid blocking by traffic queuing from filling station.	N/A	Best scheme in terms of capacity. Potential to include additional crossing facilities for pedestrians.	Good reserve capacity. Signalised pedestrian/Cyclist crossings on all approaches.	Reserve capacity although 0% in 2031 PM scenario. Signalised pedestrian/cyclist crossings on all approaches. Much cheaper to construct than options A and B.
DISBENEFITS	N/A	Expensive scheme, 3 turning movements would be banned Mature tree and planting in central island would have to be removed.	5 movements would need to be banned although 4 of these movements are low flows. Right turn traffic from Copt Oak Road would need to divert via J22 or find an alternative route.	Potential for blocking to occur on circulating carriageway if more than 2 cars are waiting to turn into Stanton Lane. Minimal lane widths on A511 east bound approach. Additional lane could make it harder for resients to get their vehicles off drives into the lane they require.	5 movements would need to be banned although 4 of these movements are low flows. Right turn traffic from Copt Oak Road would need to divert via J22 or find an alternative route. Minimal lane widths on A511 east-bound approach. Additional lane could make it harder for resients to get their vehicles off drives into the lane they require.	N/A	Will be very expensive due to amount of new carriageway required. Does not meet design criteria for Standard Roundabout	Will be very expensive due to amount of new carriageway required. Substandard lane widths on Whitwick Road approach.	Less capacity than other options. Small area of 3rd party land would be required on Whitwick Road (approx 40sq.m) to avoid substandard lane width and/or reducing widths of existing cycle lane.
ACCIDENTS/SAFETY	9 accidents have occurred in the past 5 years including 1 Serious and 8 Slight. 3 accidents have occurred between vehicles entering on the give way (Stanton Lane) in conflict with vehicles on the roundabout. 2 shunt type accidents, 1 loss of control and 2 lane conflict, 1 involving car emerging from pub car park.	Signalisation of Stanton Lane approach will help to reduce conflict accidents.	Safety is likely to be improved due to the number of reduced conflict points although there would be one left turn movement that would still be on a give way basis (left turners from Stanton Lane).	No likely safety improvements although scope to improve pedestrian facilties.	Safety is likely to be improved due to the number of reduced conflict points although there would be one left turn movement that would still be on a give way basis (left turners from Stanton Lane).	2 accidents have occurred in the past 5 years (both Slight). 1 accident involved a cyclist trying to cross the Whitwick Road arm using the central splitter island. The other involved a speeding vehicle losing control on the eastern A511 exit.	May increse potential for lane discipline related accidents. Pedestrians will have greater distances to cross if signalised pedestrian facilities are not provided.	Potential accident savings due to full signal control and signalised crossing facilities.	Potential accident savings due to full signal control and signalised crossing facilities. Simpler layout than options A and B and less chance of lane discipline related accidents.
2017 AM RESERVE CAPACITY	14%	36%	20%	27%	36%	-7%	55%	52%	35%
2017 PM RESERVE CAPACITY	11%	18%	16%	22%	41%	2%	52%	21%	17%
2031 AM RESERVE CAPACITY	-6%	12%	6%	8%	13%	-18%	27%	19%	16%
2031 PM RESERVE CAPACITY	-16%	14%	2%	5%	17%	-14%	29%	7%	0%
Work Cost incl. prelims	N/A	£2,150,000	£250,000	£467,000	£655,200	N/A	£3,400,000	£4,100,000	£1,348,000
Utility Diversion estimate		not known	not known	not known	not known		not known	not known	not known
Other costs (surveys etc)		£20,000	£20,000	£20,000	£20,000		£20,000	£20,000	£20,000
Land Purchase		£0	£0	£0	£0		£0	£0	not known
LCC fees		£429,000	£60,000	£93,300	£132,000		£680,000	£820,000	£269,700
Sub Total		£2,599,000	£330,000	£580,300	£807,200		£4,100,000	£4,940,000	£1,637,700
Contingency (25%)		£649,750	£82,500	£145,075	£201,800		£1,025,000	£1,235,000	£409,425
TOTAL	N/A	**£3,248,750**	**£412,500**	**£725,375**	**£1,009,000**	N/A	**£5,125,000**	**£6,175,000**	**£2,047,125**

Notes:
Estimate based on 2017 MHA scheme rates for Discovery Way, Ashby.
No Optimism Bias has been added.
A 25% contingency has been added
Prices do not allow for inflation.
*Utility costs not known at this stage.

COALVILLE GROWTH STRATEGY (PART 1) - SUMMARY OF SCHEME OPTIONS AND ESTIMATES

APPENDIX C

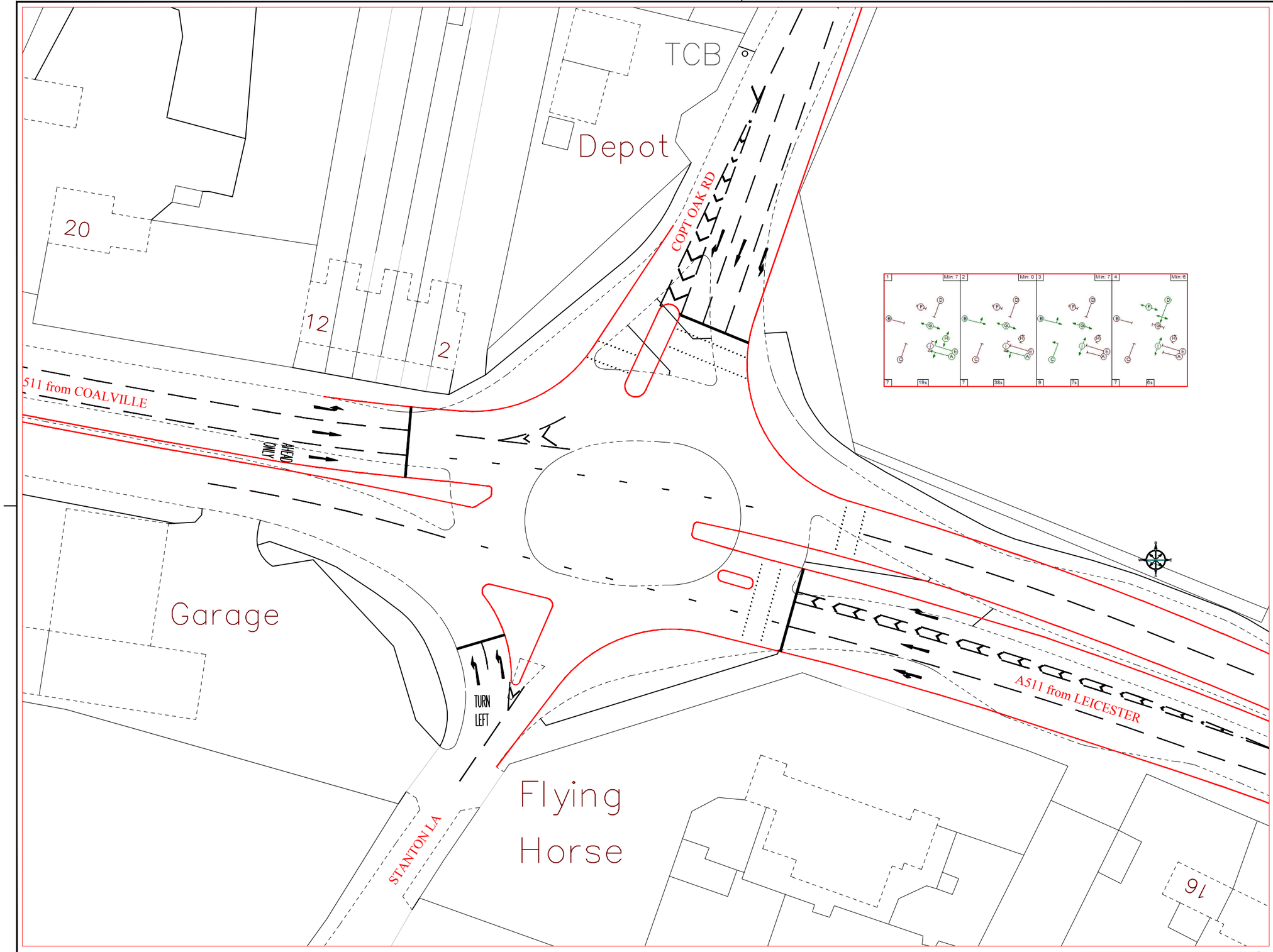
	A511/THORNBOROUGH ROAD ROUNDABOUT				A511/HOO ASH ROUNDABOUT		
	EXISTING	**OPTION A**	**OPTION B**	**OPTION C**	**EXISTING**	**OPTION A**	**OPTION B**
DESCRIPTION	Standard 4 arm roundabout with 47m Inscribe Circle Diamiter. All approaches are two lanes with ahead/left movements in nearside lane and right turn in offside lane with the exception of Thornborough Rd (South) which has three entry lanes.	Standard Roundabout but widened on all approaches and exits to anable 3 entry lanes on each approach and 2 exit lanes on A511 exits.	Standard roundabout with 2 lane approaches/2 lane exits on A511.	Standard roundabout with 2 lane approaches/2 lane exits on A511.	Standard 5 arm roundabout with 58m Inscribe Circle Diamiter. All approaches are two lanes except Ashby Road which has a single lane approach.	Existing roundabout with widening on A511 east exit to allow a 2 lane exit merging back to single lane.	Existing roundabout with widening on A511 entry and exits and widening on Ashby Road to form a flared 2 lane approach.
BENEFITS	N/A	Best scheme in terms of capacity. Potential to include additional crossing facilities for pedestrians.	Improved capacity due to A511 having 2 lane exits which will allow greater traffic flow over the A511 give way lines. Less new carriageway will mean cheaper than option A. Additional ped crossing facility on A511 east.	Improved capacity due to A511 having 2 lane exits which will allow greater traffic flow over the A511 give way lines. Less new carriageway will mean cheaper than option A. Culvert on A511 east will be unaffected. Above standard 2 into 1 exit merges on A511 will encourage drivers to use both lanes to go ahead on A511. Wider circulating carriageway will also assist traffic flow.	N/A	Relitively inexpensive scheme and some improvement to capacity.	Best option in terms of capacity improvement. Long exit merges on A511 will encourage drivers to use both approach lanes to go ahead. Reduced queuing on Ashby Road and A511 approaches.
DISBENEFITS	N/A	Will be very expensive due to amount of new carriageway required. Does not meet design criteria for Standard Roundabout. Culvert affected on A511 east.	2 into 1 exit merges slightly sub-standard which may lead to drivers choosing not to use them. Culvert affected on A511 east.	No additional pedestrian crossing facilities proposed but existing crossing facility on the A511 west would be retained and upgraded to nearside Toucan crossing with kerbside and on-crossing detection.	N/A	Modest capacity gains, junction will be over-capacity in 2031 design year but not to an extent that queueing will be excessive. Sub-standard 2 into 1 exit merges may discourage use.	More expensive than Option A and will require the removal or re-location of an existing parking Layby. May require removal of a mature tree and piping of ditch.
ACCIDENTS/SAFETY	7 accidents have occurred in the past 5 years (all slight). 4 accidents involed shunts at the give way line or pedestrian crossing stop line. 2 accidents related to conlict between vehicles entering the roundabout and vehicles on the circulating carriageway. 1 accident involved a pedestrian using the signalised crossing facility and the other accident was a loss of control (motorcycle) exiting the roundabout.	May increse potential for lane discipline related accidents. Pedestrians will have greater distances to cross if signalised pedestrian facilities are not provided.	Unlikely to provide any significant benefits to safety although additional pedestrian crossing proposed on A511 east which will benefit pedestrian safety.	Unlikely to provide any significant safety benefits but wider circulating lane widths and longer exit merges will assist lane discipline.	7 accidents have occurred in the past 5 years (2 serious, 5 slight). 4 accidents involed shunts at the give way line or approach to the roundabout. 2 accidents involved loss of control (no other vehicles involved). No details available for 1 accident.	Unlikely to provide any significant safety benefits.	Unlikely to provide any significant safety benefits.
2017 AM RESERVE CAPACITY	-7%	54%	15%	27%	-7%	2%	52%
2017 PM RESERVE CAPACITY	0%	44%	25%	28%	2%	5%	21%
2031 AM RESERVE CAPACITY	-12%	40%	3%	14%	-18%	-5%	19%
2031 PM RESERVE CAPACITY	-16%	30%	7%	15%	-14%	-6%	7%
Work Cost incl. prelims	N/A	£3,250,000	£1,105,000	£975,000	N/A	£450,000	£1,850,000
Utility Diversion estimate		not known	not known	not known		not known	not known
Other costs (surveys etc)		£20,000	£20,000	£20,000		£20,000	£20,000
Land Costs		£0	£0	£0		£0	£0
LCC fees		£565,000	£221,000	£195,000		£90,000	£370,000
Sub Total		£3,835,000	£1,346,000	£1,190,000		£560,000	£2,240,000
Contingency (25%)		£958,750	£336,500	£297,500		£140,000	£560,000
TOTAL	N/A	**£4,793,750**	**£1,682,500**	**£1,487,500**	N/A	**£700,000**	**£2,800,000**

Notes:
Estimate based on 2017 MHA scheme rates for Discovery Way, Ashby.
No Optimism Bias has been added.
A 25% contingency has been added
Prices do not allow for inflation.
*Utility costs not known at this stage.

APPENDIX D

PRELIMINARY LAYOUT DRAWINGS

APPENDIX D



NOTES:

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REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: ASSET & MAJOR PROGRAMMES

TITLE: COALVILLE GROWTH STRATEGY STUDY

FLYING HORSE ROUNDABOUT
JUNCTION OPTION

DRAWING NUMBER		SCALE	
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PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

AUTOCAD PROJECT DIR:	K:\advdesign\0038\cad drawings
AUTOCAD FILENAME:	ALL LCC OPTIONS

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8RJ
Tel No : 0116 3050001 | Direct Dial : 0116 3056859
E.Mail address: astinson@leics.gov.uk | www.leicestershire.gov.uk

DRAFT

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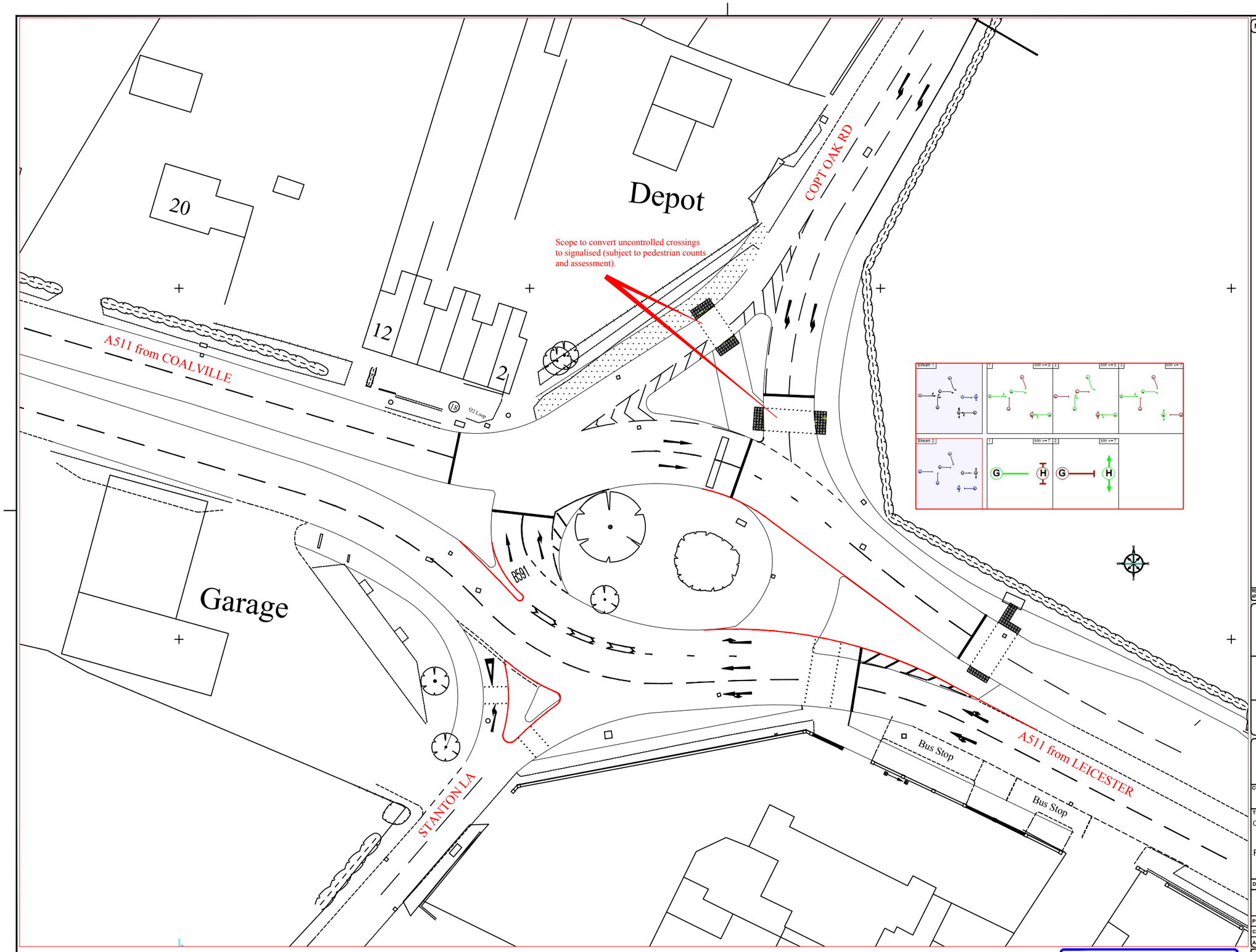
APPENDIX D



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REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: ASSET & MAJOR PROGRAMMES

TITLE: COALVILLE GROWTH STRATEGY STUDY

FLYING HORSE ROUNDABOUT

DRAWING NUMBER	SCALE
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PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

AUTOCAD PROJECT DIR:	K:\advdesign\0038\cad drawings
AUTOCAD FILENAME:	ALL LCC OPTIONS

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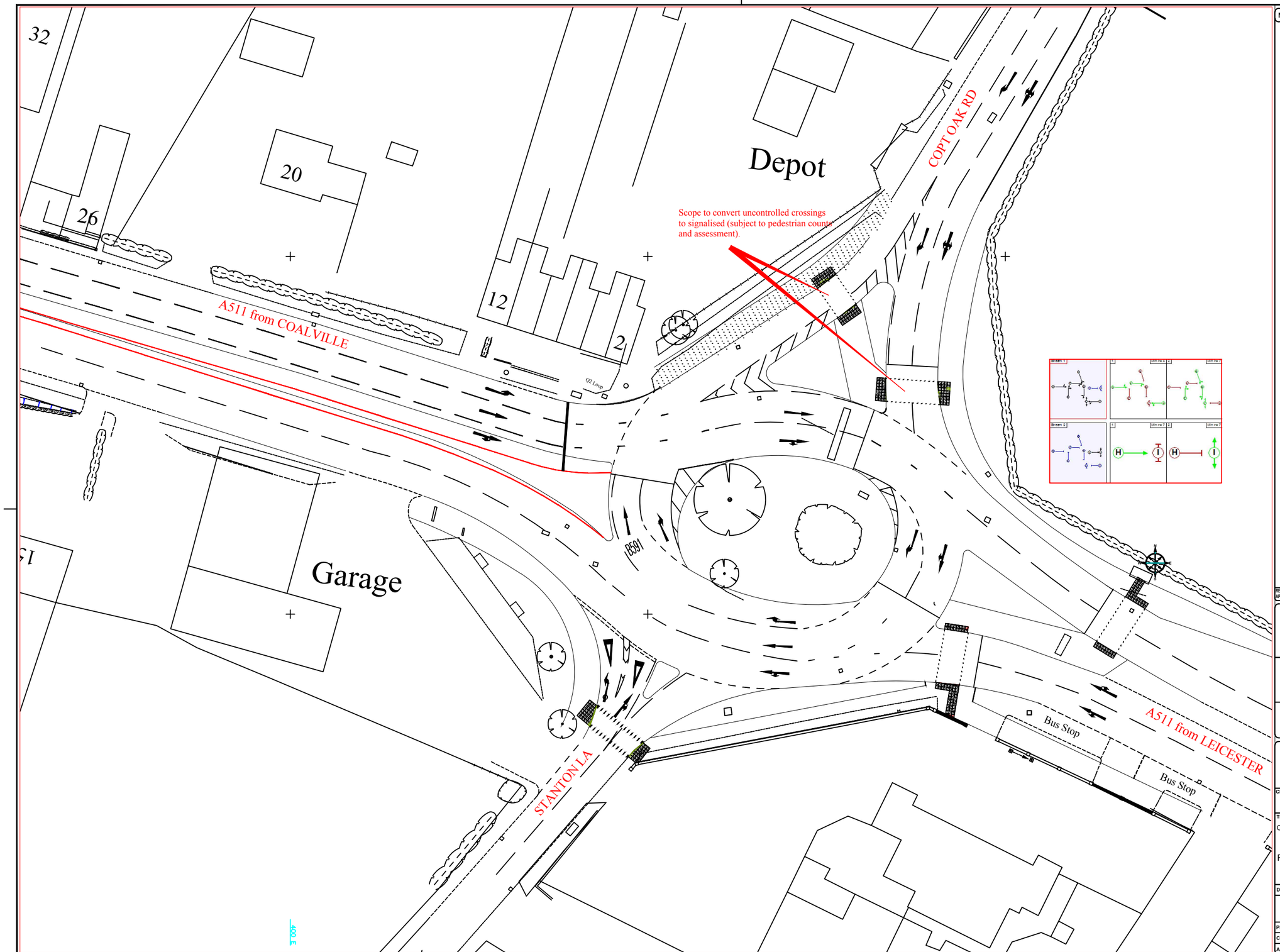
APPENDIX D



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ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

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TITLE: COALVILLE GROWTH STRATEGY STUDY

FLYING HORSE ROUNDABOUT

DRAWING NUMBER	SCALE
DRAFT OPTION C	1:500

PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

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AUTOCAD FILENAME:	ALL LCC OPTIONS

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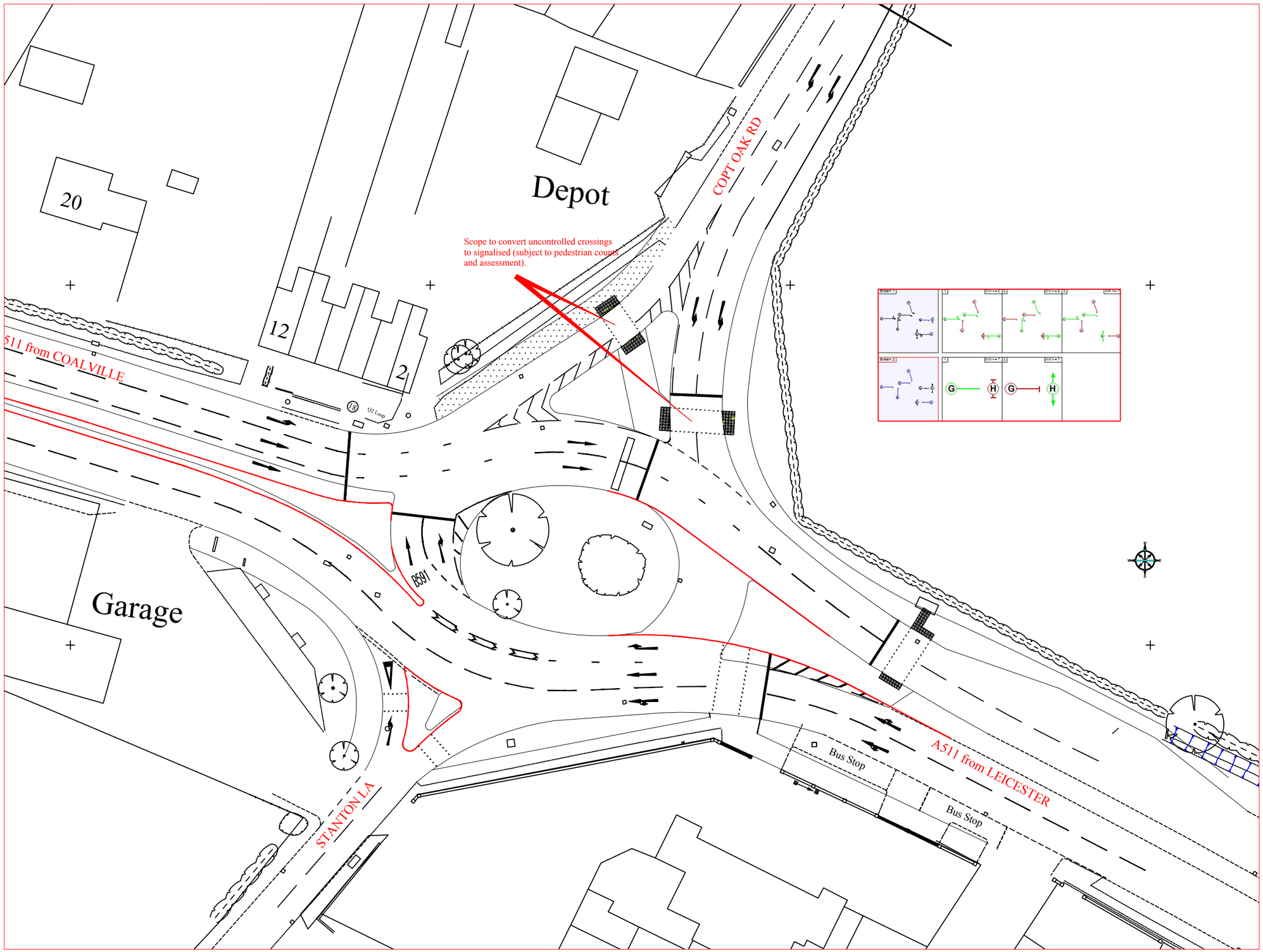
APPENDIX D



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REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: ASSET & MAJOR PROGRAMMES

TITLE:
COALVILLE GROWTH STRATEGY STUDY

FLYING HORSE ROUNDABOUT

DRAWING NUMBER	SCALE
DRAFT OPTION D	1:500

PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

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AUTOCAD FILENAME:	ALL LCC OPTIONS

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E.Mail address: astinson@leics.gov.uk | www.leicestershire.gov.uk

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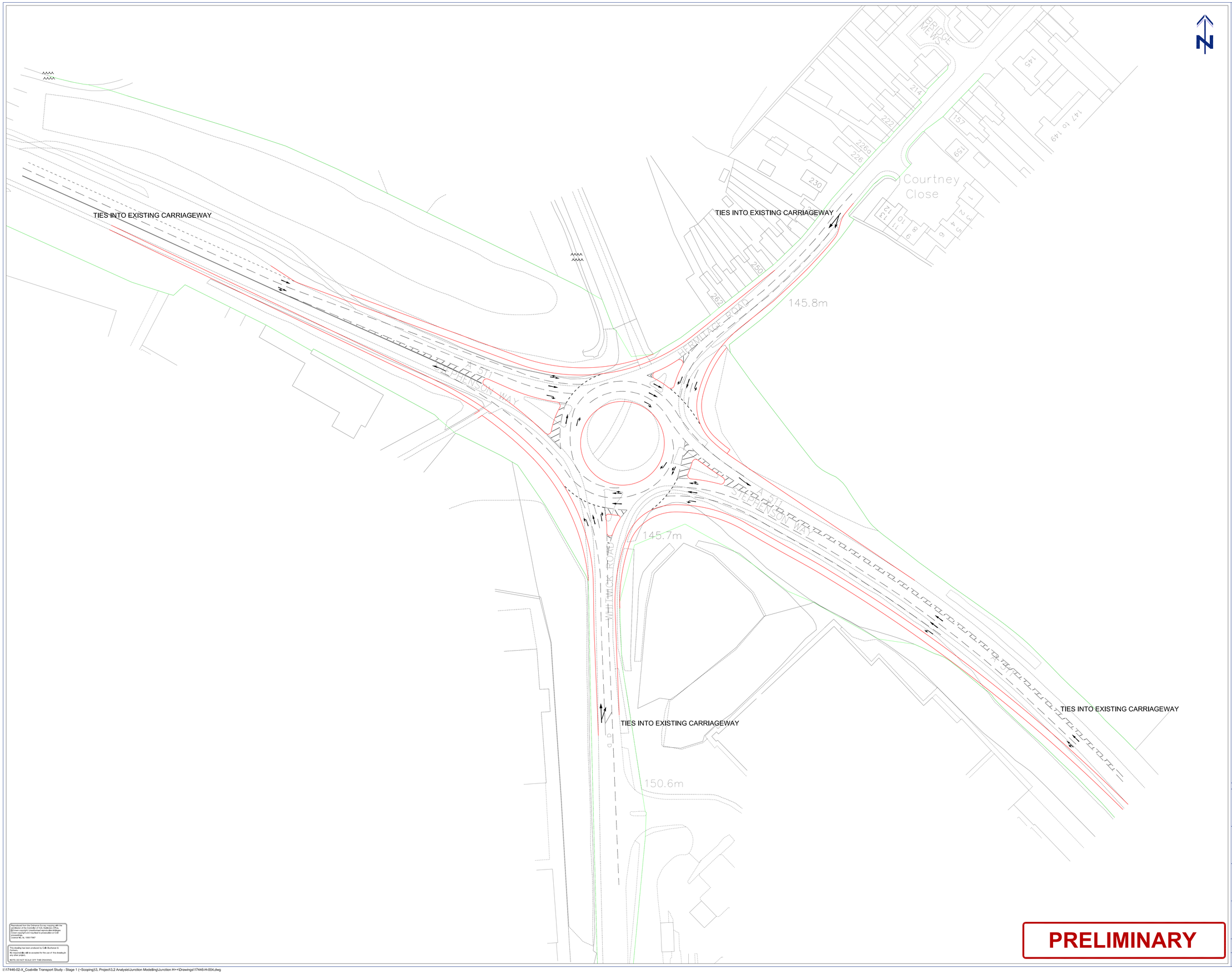


PRELIMINARY

Rev	Date	Amendment	Des.	Drn.

Canada House
Chepstow Street
Manchester
M1 5FW

T 0161 236 1736
F 0161 236 1737
www.cbuchanan.co.uk

Client:

Job Title:
Coalville Transport Study

Drawing Title:
Whitwick Road Roundabout
DRAFT OPTION A (NTS)

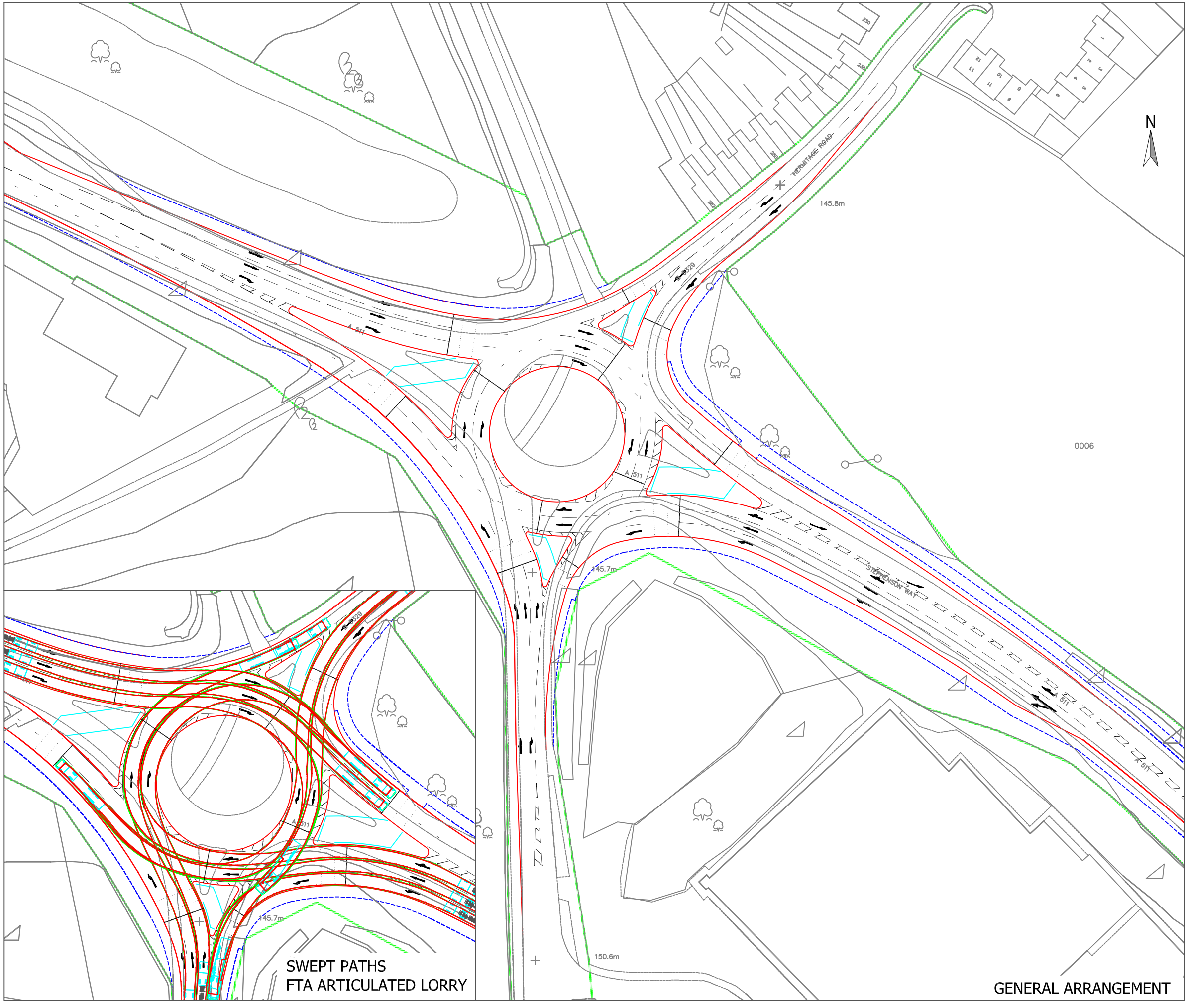
Des:	Drn:	Chkd:	Appd:	Job No:	1st Issued:	Scale:
TR	JS	JS	ME	17446-03-1	April 2011	

Dwg No: 17446-H-004 Rev.

I:\17446-02-X_Coalville Transport Study - Stage 1 (~Scoping)\3, Project\3.2 Analysis\Junction Modelling\Junction H\+\Drawings\17446-H-004.dwg

APPENDIX D

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



KEY:

- PROPOSED KERBLINE
- PROPOSED FOOTWAY
- HIGHWAY BOUNDARY

REV	DESCRIPTION	BY	CHK	APP	DATE
A	BRIDLEWAY ENTRANCE MODIFIED	SH	JC	CS	02/12/11

Client:

William Davis Limited/Jelson Limited

EXECUTIVE PARK
AVALON WAY
ANSTEY
LEICESTER
LE7 7GR
TEL: +44 (0)116 234 8000
FAX: +44 (0)116 234 8001
e-mail: leicester@wyg.com

Project:

Stephenson Green - Coalville

Drawing Title:

Proposed Improvements at the A511 / Whitwick Rd

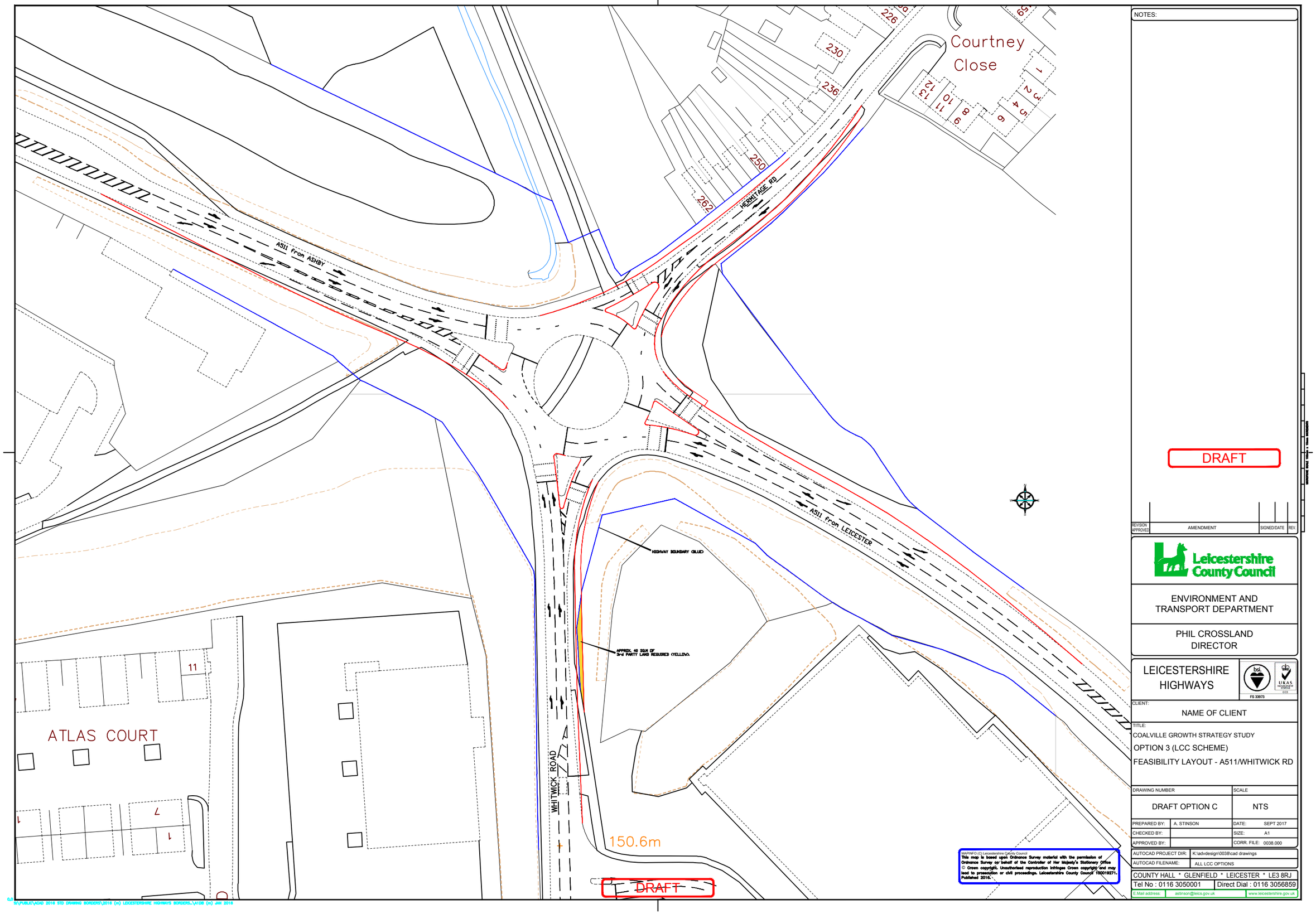
DRAFT OPTION B (NTS)

	Drawn	Date	Checked	Date	Approved	Date
	RB	27/05/10	AH	27/05/10	CS	27/05/10

Project No.	Office	Type	Drawing No.	Revision
[illegible]	35	18		

FILENAME : N:\PROJECTS\A056098\ACAD\DWGS\A056098 - 35 - 18 - 052A A511 - WHITWICK RD.DWG | PLOTTED BY : RICHARD.BISHOP | PLOTTED DATE : 06 December 2011 12:37:55

APPENDIX D



NOTES:

DRAFT

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV.

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: NAME OF CLIENT

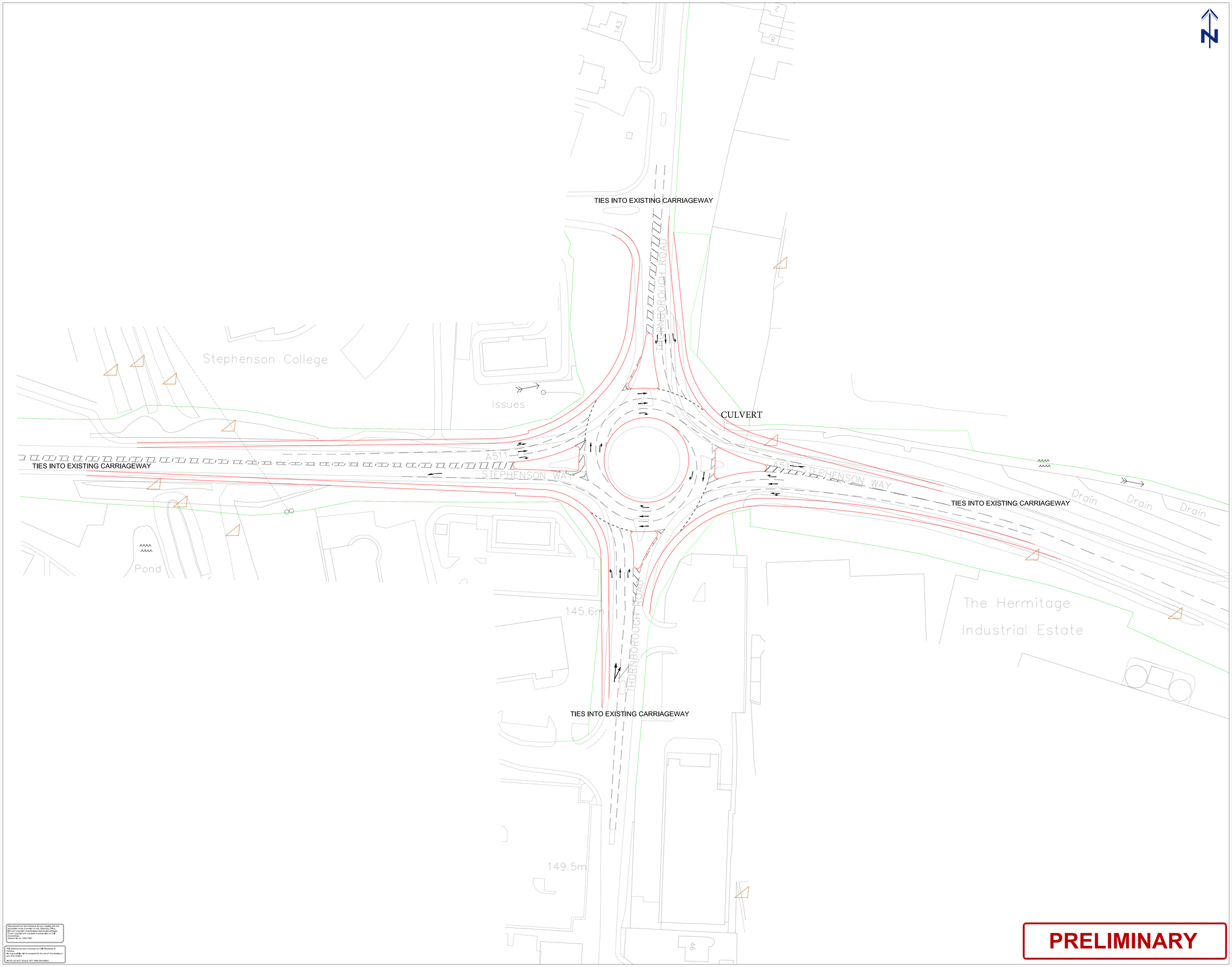
TITLE:
COALVILLE GROWTH STRATEGY STUDY
OPTION 3 (LCC SCHEME)
FEASIBILITY LAYOUT - A511/WHITWICK RD

DRAWING NUMBER	SCALE
DRAFT OPTION C	NTS

PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

AUTOCAD PROJECT DIR:	K:\advdesign\0038\cad drawings
AUTOCAD FILENAME:	ALL LCC OPTIONS

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8RJ
Tel No : 0116 3050001 | Direct Dial : 0116 3056859
E.Mail address: astinson@leics.gov.uk | www.leicestershire.gov.uk



Rev	Date	Amendment	Des.	Drn.

Canada House
Chepstow Street
Manchester
M1 5FW

T 0161 236 1736
F 0161 236 1737
www.cbuchanan.co.uk

Client:

Job Title:
Coalville Transport Study

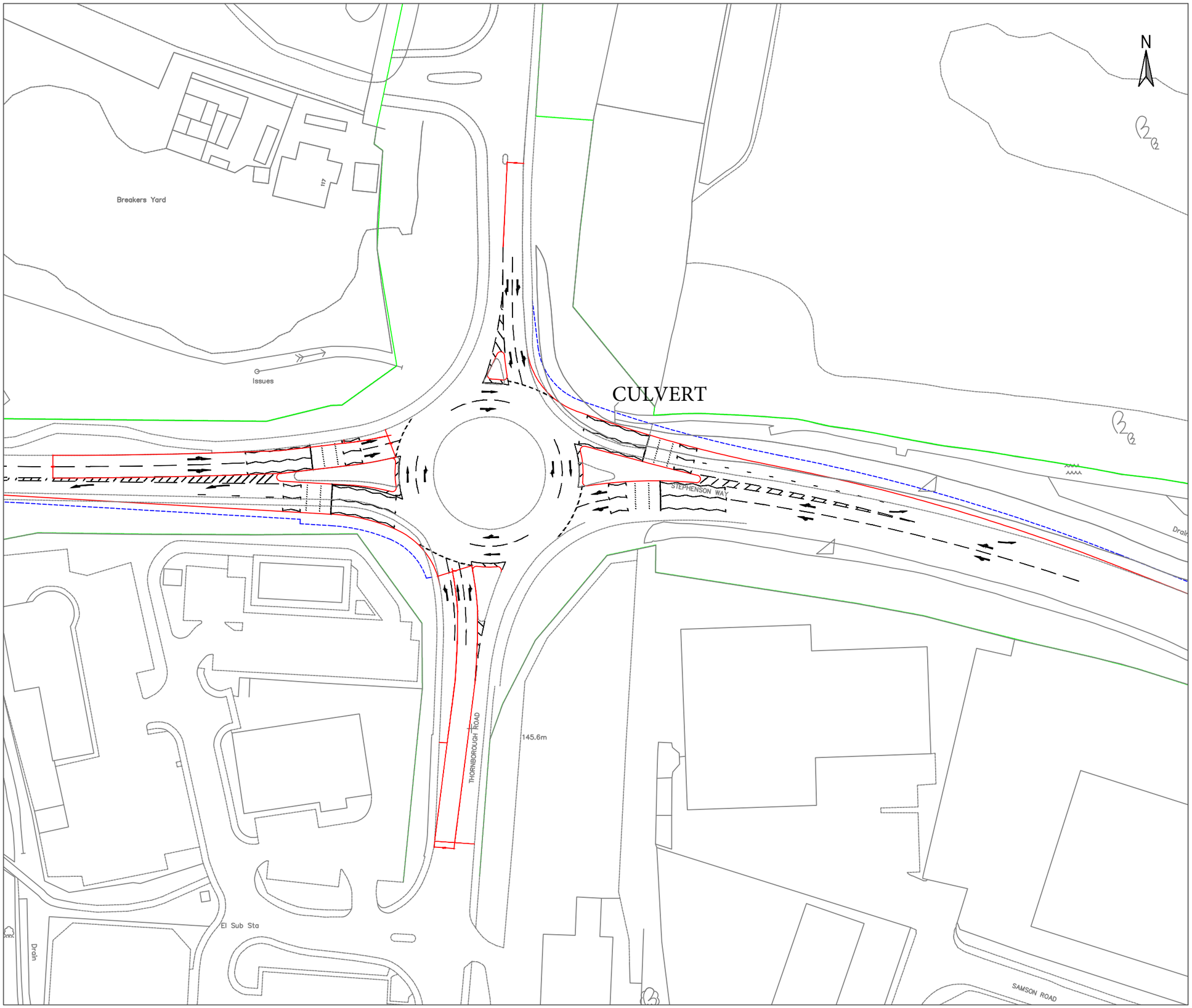
Drawing Title:
A511/THORNBOROUGH RD
DRAFT OPTION A (NTS)

Des:	Drn:	Chkd:	Appd:	Job No:	1st Issued:	Scale:
CC	JS	PMcD	ME	17446-03-1	April 2011	

Dwg No. Rev.

APPENDIX D

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



KEY:

- PROPOSED KERBLINE
- PROPOSED FOOTWAY
- HIGHWAY BOUNDARY

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

William Davis Limited/Jelson Limited

EXECUTIVE PARK
AVALON WAY
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LEICESTER
LE7 7GR
TEL: +44 (0)116 234 8000
FAX: +44 (0)116 234 8001
e-mail: leicester@wyg.com

Project:

Stephenson Green - Coalville

Drawing Title:

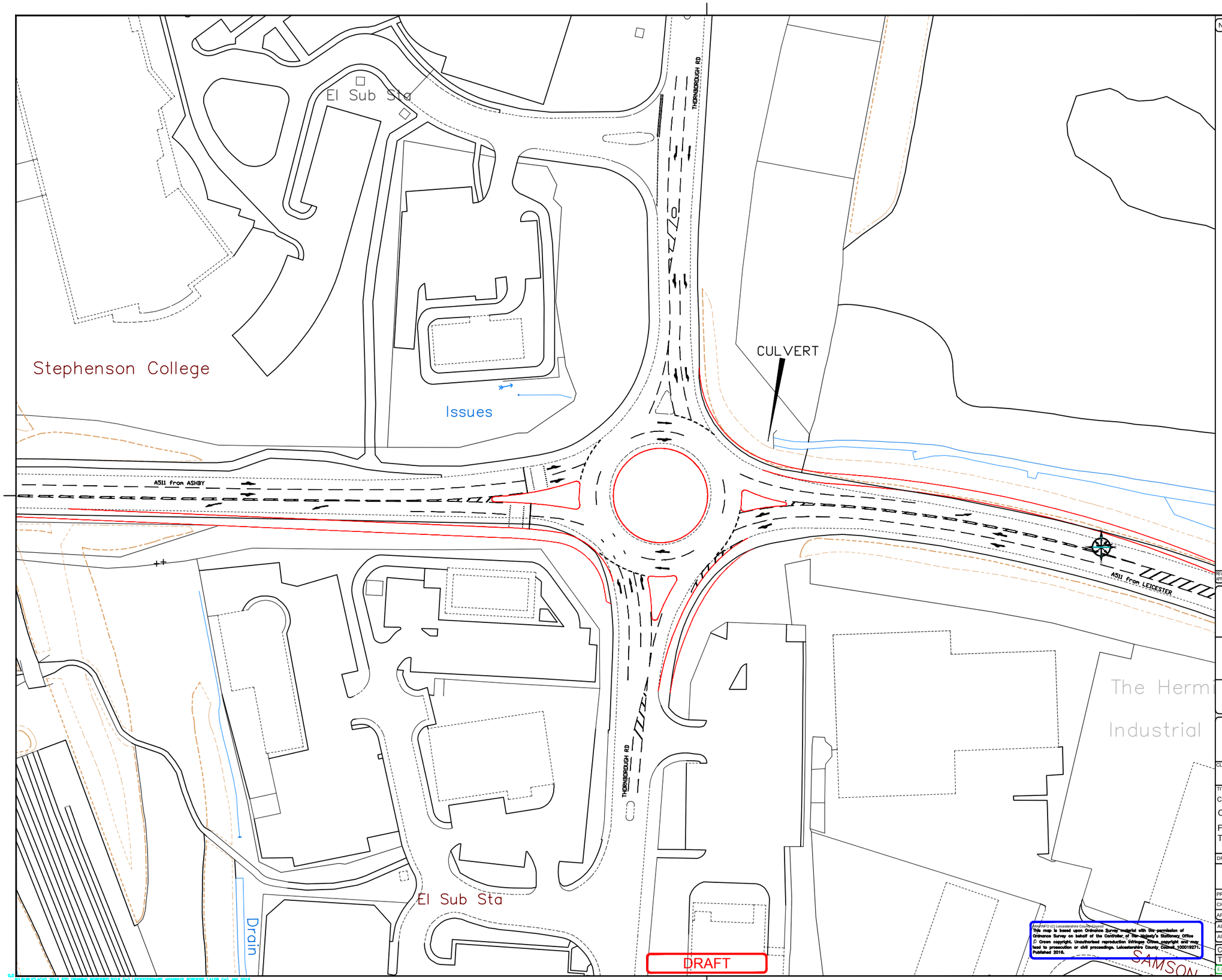
Proposed improvements at the A511/Thornborough Rd

DRAFT OPTION B (NTS)

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
1:1000	RB	27/05/10	AH	27/05/10	CS	27/05/10

Project No.	Office	Type	Drawing No.	Revision
A056098	35	18	051	-

APPENDIX D



NOTES:

DRAFT

REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: NAME OF CLIENT

TITLE:
COALVILLE GROWTH STRATEGY STUDY
OPTION1 (LCC SCHEME)
FEASIBILITY LAYOUT - A511 / THORNBOROUGH RD

DRAWING NUMBER	SCALE
DRAFT OPTION C	NTS

PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

AUTOCAD PROJECT DIR:	K:\advdesign\0038\cad drawings
AUTOCAD FILENAME:	ALL LCC OPTIONS

COUNTY HALL * GLENFIELD * LEICESTER * LE3 8RJ
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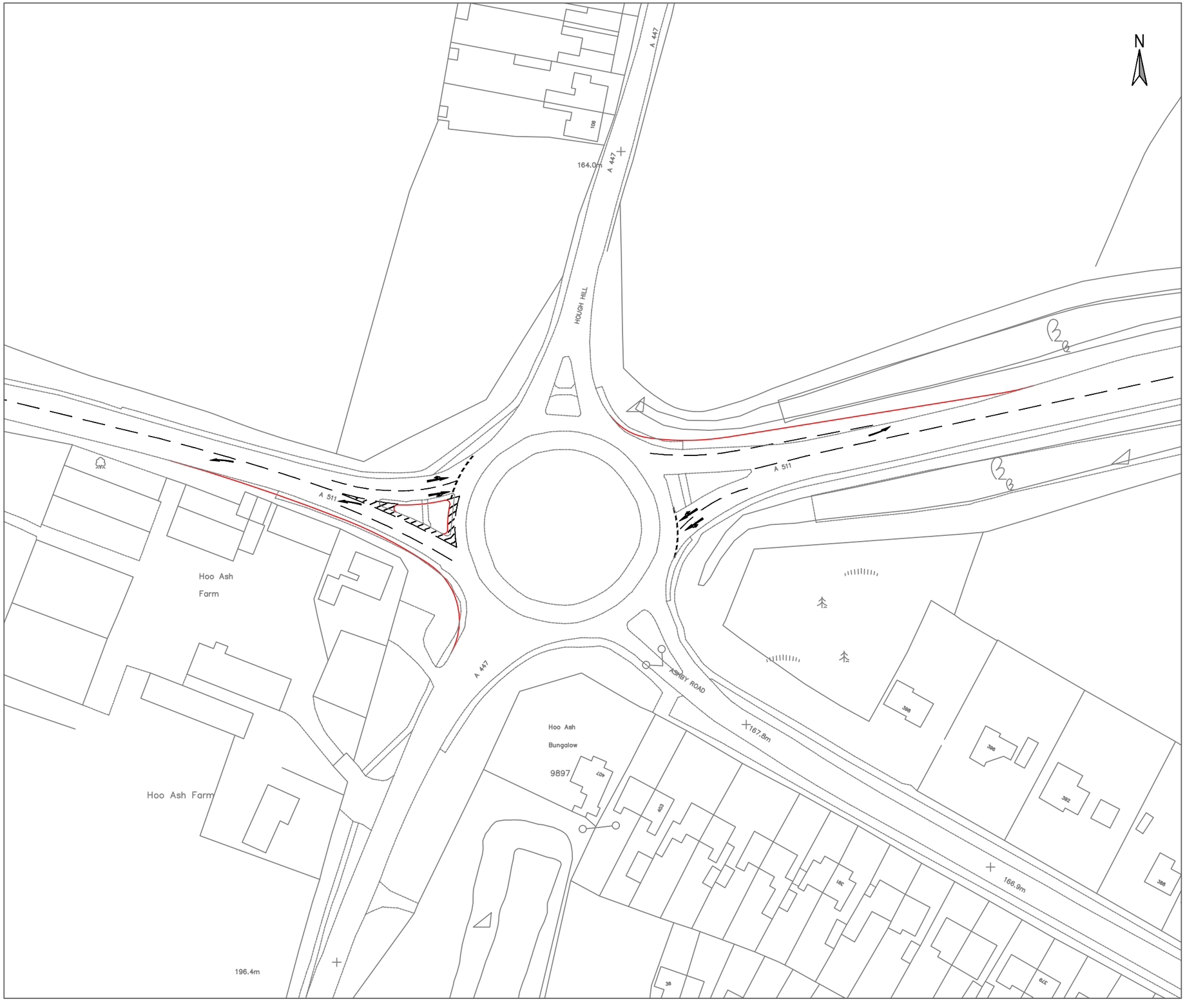
E.Mail address: astinson@leics.gov.uk | www.leicestershire.gov.uk

APPENDIX D

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



KEY:

PROPOSED KERBLINE

PROPOSED FOOTWAY

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

William Davis Limited/Jelson Limited

EXECUTIVE PARK
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LE7 7GR
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e-mail: leicester@wyg.com

Project:

Stephenson Green - Coalville

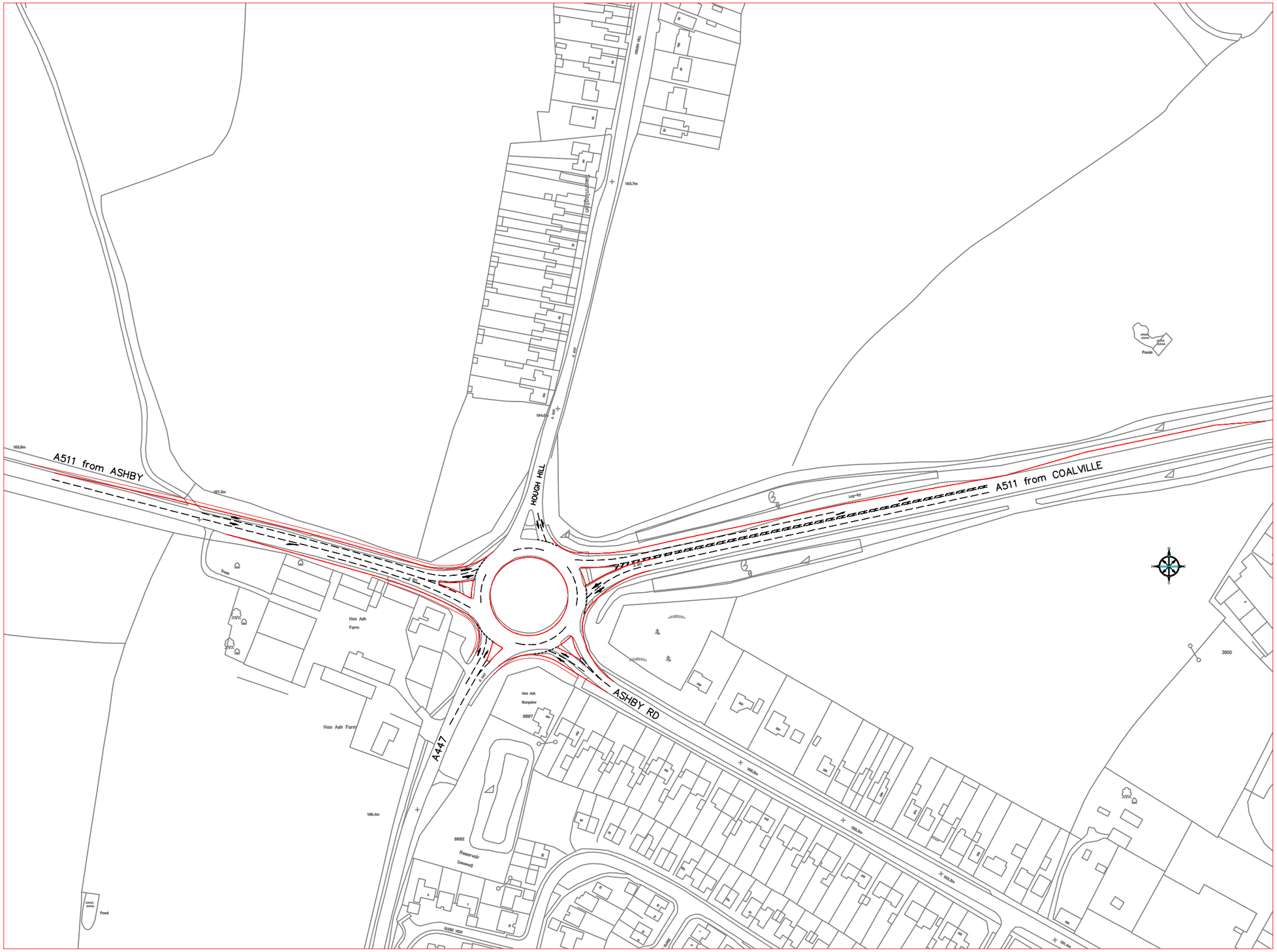
Drawing Title:

Proposed Improvements at the A511 / Hough Hill /
DRAFT OPTION A (NTS)

Scale @ A3	Drawn Date	Checked Date	Approved Date
	RB 27/05/10	AH 27/05/10	CS 27/05/10

Project No.	Office	Type	Drawing No.	Revision
	35	18		-

APPENDIX D



NOTES:

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REVISION APPROVED	AMENDMENT	SIGNED/DATE	REV

Leicestershire County Council

ENVIRONMENT AND TRANSPORT DEPARTMENT

PHIL CROSSLAND
DIRECTOR

LEICESTERSHIRE HIGHWAYS

FS 33973

CLIENT: NAME OF CLIENT

TITLE:
COALVILLE GROWTH STRATEGY STUDY
OPTION B (LCC SCHEME)
FEASIBILITY LAYOUT - HOO ASH ROUNDABOUT

DRAWING NUMBER	SCALE
DRAFT OPTION B	NTS

PREPARED BY:	A. STINSON	DATE:	SEPT 2017
CHECKED BY:		SIZE:	A1
APPROVED BY:		CORR. FILE:	0038.000

AUTOCAD PROJECT DIR:	K:\advdesign\0038\cad drawings
AUTOCAD FILENAME:	ALL LCC OPTIONS

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DRAFT

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