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CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY

ANSTY GARDEN COMMUNITY,

WEST SUSSEX

DESIGNERS RESPONSE

REPORT REF NO. 2207280-R15

PROJECT NO. 2207280

OCTOBER 2023

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APPENDICES

Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft for M&S Approval	DV	DH/KK	Draft	19/10/2023
-	Draft for M&S Approval	DV	DH/KK	Draft	24/10/2023
-	Final for Submission to WSCC	DV	JS/KK	DH	26/10/2023

Distribution

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1.0 INTRODUCTION

1.1 Ardent Consulting Engineers (ACE) has been appointed by Fairfax Acquisitions Ltd to advise on the transport aspects of the proposed development at Land Adjoining Ansty, West Sussex.

1.2 The proposed development comprises a residential-led, mixed-use development comprising up to 1,450 homes, a local centre, two schools and other community uses such as sports pitches.

1.3 This report addresses matters originally raised in the Stage 1 Road Safety Audit (RSA) undertaken by M & S Traffic (M&S), dated October 2023. The Audit is attached at **Appendix A**.

1.4 The Audit was undertaken on the proposed A272 Southern Access roundabout junction, which is located to the south of the proposed development site. The works involve the construction of a new roundabout and pedestrian/cycle infrastructure improvements to include new crossing facilities.

1.5 In advance of submission of this Designers' Response to WSCC as the overseeing organisation, a draft was issued to M&S in order to seek their feedback on the proposed responses and obtain their in-principle approval. The responses incorporated within this Designers Response incorporate M&S recommendations/acceptance as attached at **Appendix B**.

1.6 The following drawing have been prepared to incorporate the findings of the RSA:

- **ACE Drawing 2207280-005D** – Proposed Roundabout Southern Access (A272)

2.0 DESIGNERS RESPONSE TO STAGE 1 ROAD SAFETY AUDIT

Table 2.1 Project Details

Report title:	Designers Response to Stage 1 Road Safety Audit – Southern Access
Date:	October 2023
Document reference and revision:	2207280-R15
Prepared by:	Ardent Consulting Engineers
On behalf of:	Fairfax Acquisitions Ltd

Table 2.2 Authorisation Sheet

Project:	Ansty Garden Community
Report title:	Designers Response to Stage 1 Road Safety Audit – Southern Access
Prepared by	
Name:	Dan Vallance
Position:	Principal Transport Planner
Signed:	DV
Organisation:	Ardent Consulting Engineers
Date:	26/10/2023
Approved by	
Name:	David Howson
Position:	Associate
Signed:	DH
Organisation:	Ardent Consulting Engineers
Date:	26/10/2023

Table 2.3 Key Personnel

Overseeing Organisation:	WSCC Highways– Mr G. Parfect
RSA team:	M&S - Mr B. Shawyer & Mr M. Morris
Design organisation:	Ardent – Mr D. Vallance, Mr D. Howson & Mr K. Markey

Table 2.4 Road Safety Audit Decision Log

RSA problem	RSA recommendation	Design Organisation response	Overseeing Organisation response	Agreed RSA action
3.1.1 Insufficient construction details could lead to overshoot or rear end shunt collisions. The proposals do not include the introduction of anti-skid surfacing or detail the Polished Stone Value (PSV) to be used on the approaches to the roundabout and surfacing as part of the scheme. Surfacing with an insufficient PSV could lead to overshoot or rear end shunt collisions.	It is recommended that high friction surfacing should be provided on all the approaches to the roundabout and that the PSV of all surfacing should be provided for assessment.	Details of PSV values and surfacing materials will be provided for Stage 2 Audit.		
3.1.2 Ponding of surface water could lead to loss of control collisions. Kerblines are being amended as part of these proposals, where no details of	It is recommended that drainage details should be provided at Stage 2 Safety Audit.	Drainage details will be provided for Stage 2 Audit.		

carriageway drainage have been provided for assessment; ponding on the carriageway or water moving across the carriageway at junctions or bends could lead to loss of control collisions, particularly in wet / icy conditions.				
3.1.3 Insufficient signing could lead to could lead to vehicle to pedestrian / cyclist collisions or rear end shunts. A national speed limit currently applies to this section of Harvest Hill, where the proposed speed limit on the eastern arm is unknown. This could lead to inappropriate vehicle speeds approaching the Parallel crossing, which should not be installed on roads with an 85th percentile speed of 35 mph or above without speed reducing measures to slow traffic. Inappropriate vehicle speeds could lead to vehicle to pedestrian / cyclist collisions or rear end shunts.	It is recommended that a 30mph speed restriction should be applied to the eastern arm of the roundabout.	Agreed, the eastern arm (development access) will be subject to a 20/30mph speed limit as noted on **ACE Drawing 2207280-005D**. To confirm, 43m visibility has also been shown to the give way line. Signage to be in accordance with TSRGD and LTN1/20 standards and vegetation to be trimmed and cut back to keep visibility splays clear has also been noted on the drawing. Signage details will be provided for Stage 2 Safety Audit.		

3.1.4 Inappropriate surfacing could lead to vehicle to pedestrian / cyclist collisions or rear end shunts. The proposals do not include the introduction of anti-skid surfacing or a surface with a high polished stone value on the approaches to the Parallel crossing. Surfacing with an inadequate PSV could lead to vehicles not being able to stop, leading to possible rear end shunt or vehicle to pedestrian / cyclist collisions.	It is recommended that antiskid surfacing or surfacing with a high PSV should be used on the approaches to the crossing.	Details of PSV values and surfacing materials will be provided for Stage 2 Audit		
3.2.1 Approaches to the proposed roundabout. Stopping Sight Distances (SSD) have been provided for assessment and at 215m are acceptable for the current national speed limit. An insufficient SSD may increase the risk of junction related or shunt type collisions at the roundabout and so the 120m SSD, which is commensurate with a 40mph design speed, should only be incorporated if a reduced speed limit of 40mph is introduced.	It is recommended that the SSD should be commensurate with the design speeds.	The proposed roundabout will significantly change the nature of speeds approaching the proposed crossing location, resulting in lower than compared to the current speeds Visibility splays for the current posted speed has been shown and noted to be kept clear to be robust at this stage. A change in speed limit is at the discretion of WSCC but agreed, if there is a change, the splays provided will be in accordance with speed limit.		

		As presented on **ACE Drawing 2207280-005D**, the design incorporates suitable visibility splays based on the current posted speed limit.		
3.2.2 Insufficient Stopping Sight Distance may increase the risk of junction related or shunt type collisions at the roundabout. On the westbound approach to the roundabout no SSD has been provided for assessment. There is concern that the SSD could pass over non-highway land. Vegetation or landscaping features in this splay could restrict visibility, where insufficient visibility may increase the risk of junction related or shunt type collisions at the roundabout.	It is recommended that the SSD should be supplied for assessment and that they should be within the adoptable highway, or that a suitable covenant should be arranged to ensure that the splay is not affected by planting or landscaping features.	All visibility splays are within highway land or land within the development site and therefore can be kept clear as shown and noted on **ACE Drawing 2207280-005D.**		
3.2.3 Lack of vertical profile information could lead to side impact collisions and loss of control collisions. The proposed roundabout is located on Harvest Hill, where there is a fall from the northwest to the southeast. At this early stage no vertical alignment details were	It is recommended that vertical alignment details should be provided for assessment at Stage 2 Safety Audit.	Details of vertical alignments will be provided for Stage 2 Audit.		

provided for assessment. There is concern that inappropriate vertical profiles could restrict visibility at the junction, which may lead to side impact collisions and loss of control collisions.				
3.2.4 Restricted Stopping Sight Distance may increase the risk of vehicle to pedestrian / cyclist collisions or rear end shunts. On the westbound approach to the Parallel crossing no SSD has been provided for assessment. There is concern that the SSD could pass over non-highway land. Vegetation or landscaping features in this splay could restrict visibility, where restricted SSD may increase the risk of vehicle to pedestrian / cyclist collisions or rear end shunts.	It is recommended that the SSD should be supplied for assessment and that they should be within the adoptable highway, or that a suitable covenant should be arranged to ensure that the splay is not affected by planting or landscaping features.	The proposed parallel crossing is located on the development access arm and will be subject to a 20/30mph speed limit subject to public transport requirements. Suitable visibility splays are proposed of 43m with visibility splays shown on **ACE Drawing 2207280-005D**.		
3.3.1 Insufficient capacity could lead to rear end shunt or side impact collisions. No details of expected flows and the capacity of the roundabout have been provided for assessment.	It is recommended that the roundabout should operate without excessive queuing and with balanced flows and that an ARCADY or similar model should be provided for assessment..	An ARCADY assessment has been undertaken and demonstrates that the junction operates with spare capacity in the Development Case scenario. The results are attached at **Appendix C**.		

Insufficient capacity could lead to congestion where excessive queuing at the roundabout could lead to driver frustration and the use of inappropriate gaps, further unbalanced flows could lead to entry problems on to the roundabout. This may lead to rear end shunt or side impact collisions.				
3.5.1 Insufficient street lighting could lead to vehicle to pedestrian / cyclist collisions during the hours of darkness. At this early stage no details of street lighting have been provided for assessment. A lack of lighting could increase the risk of loss of control and side impact collisions at the roundabout and vehicle to pedestrian / cyclist collisions during the hours of darkness.	It is recommended that street lighting should be checked with the Highway Authority's street lighting team and that a plan showing the light distribution should be provided for assessment at Stage 2 Safety Audit.	It has been noted on **ACE Drawing 2207280-005D** that street lighting is to be considered in liaison with WSCC as per the recommendation. Lighting details to be provided for Stage 2 Audit.		

3.5.2 Insufficient road markings could lead to vehicle to pedestrian / cyclist collisions. At this early-stage full details of road markings have not been provided for assessment, including the Controlled Area. A lack of a Controlled Area could lead to inappropriate parking near the crossing that may restrict intervisibility, increasing the risk of vehicle to pedestrian / cyclist collisions.	It is recommended that the Controlled Area should be provided for assessment at Stage 2 Safety Audit.	The proposed parallel crossing has been updated on **ACE Drawing 2207280-005D** with appropriate road markings as per TSRGD standards. Further details will be provided at Stage 2 Safety Audit.		

Table 2.6 Design Organisation Statement

On behalf of the design organisation I certify that: **1) the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.**	
Name:	David Howson
Signed	
Position:	Associate
Organisation:	Ardent Consulting Engineers
Date:	

Table 2.6 Overseeing Organisation Statement

On behalf of the Overseeing Organisation I certify that:

1) **the RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and**
2) **the agreed RSA actions will be progressed.**

Name:	Guy Parfect
Signed:	
Position:	Senior Planner
Organisation:	West Sussex County Council Highways
Date:	

Designers Response

Drawings

N

EXISTING PUBLIC RIGHT OF WAY

Mount Noddy Cottage

West Riddens Cottages

Little Orchard

Ansty Lodge

Anstye Place

Pond

West Riddens Farm

West Riddens

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph (NOTE APPROACHING WITHIN 30mph SPEED LIMIT)

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

CONNECT TO EXISTING FOOTWAY

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 70.18m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 40.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 40.00m

POTENTIAL CROSSING POINT AND TRANSITION FROM SEGREGATED CYCLE ROUTE TO SHARED FOOT/CYCLEWAY

SIGNAGE AND DETAILS TBC

NOTE DEVELOPMENT ACCESS ARM TO BE A 20/30mph SPEED LIMIT

PROPOSED DEVELOPMENT

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 67.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 20.00m

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 42.00m

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

TIE INTO EXISTING ROAD ALIGNMENT

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 60.00m

CIRCULATORY CARRIAGEWAY WIDTH AS PER PARA 3.6 OF CD116
THE WIDTH OF THE CIRCULATORY CARRIAGEWAY FOR NORMAL OR COMPACT ROUNDABOUTS SHALL BE BETWEEN 1.0 AND 1.2 TIMES THE MAXIMUM ENTRY WIDTH, EXCLUDING ANY OVERRUN AREA - 5.40m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 15m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 99.84m

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

215m FORWARD VISIBILITY ON APPROACH BASED ON POSTED SPEED LIMIT (60mph)

B2036 SOUTH

61.7m

68.2m

ARCADY ROUNDABOUT GEOMETRY:	(ARM 1) B2036 NORTH	(ARM 2) DEVELOPMENT ACCESS	(ARM 3) B2036 SOUTH
APPROACH ROAD HALF WIDTH	3.00m	3.25m	3.30m
ENTRY WIDTH	4.50m	4.50m	4.50m
EFFECTIVE FLARE LENGTH	10.00m	11.00m	14.50m
ENTRY RADIUS	40.00m	20.00m	15.00m
INSCRIBED CIRCLE DIAMETER	30.00m	30.00m	30.00m
CONFLICT ANGLE	30.00°	37.00°	29.00°
DEFLECTION	70.18m	67.00m	99.84m

NOTES:

ROUNDABOUT DESIGNED TO CD 116 GEOMETRIC DESIGN OF ROUNDABOUTS (FORMERLY TO 16/07, TO 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

ROUNDABOUT SUBJECT TO FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

STREET LIGHTING TO BE CONSIDERED.

VEGETATION WITHIN VISIBILITY SPLAYS TO BE TRIMMED AND CUT BACK TO KEEP VISIBILITY SPLAYS CLEAR.

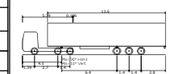
DESIGN IN ACCORDANCE WITH THE CURRENT POSTED SPEED LIMIT, ANY REDUCTION IN SPEED LIMIT IS SUBJECT TO REVIEW BY WSCC.

SIGNAGE TO BE IN ACCORDANCE WITH TSRGD AND LTN 1/ 20 STANDARDS.

KEY:

- INDICATIVE SITE BOUNDARY
- INDICATIVE APPLICATION ACCESS WORKS BOUNDARY TO BE CONFIRMED
- EXISTING PUBLIC RIGHT OF WAY
- DEFLECTION ANGLE
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT
- 43m FORWARD VISIBILITY SPLAY
- 43m PEDESTRIAN VISIBILITY SPLAY
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS

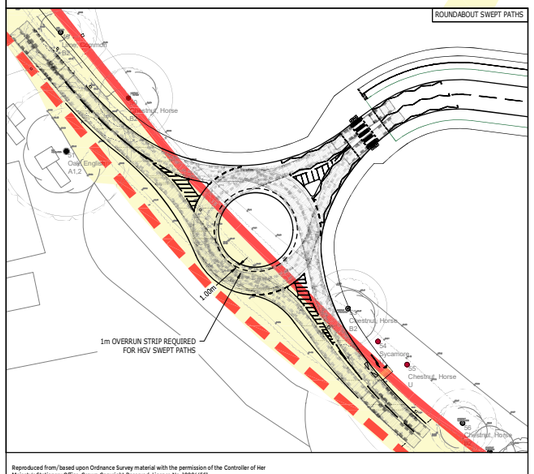
VEHICLE SPECIFICATION:



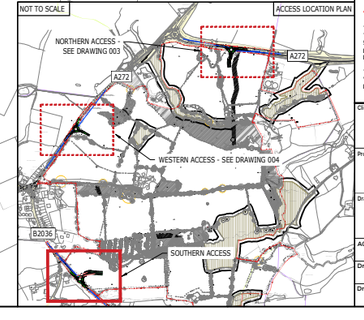
Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.500m
Min Body Ground Height	0.530m
Min Body Ground Clearance	0.530m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

ROUNDABOUT SWEPT PATHS



NOT TO SCALE — ACCESS LOCATION PLAN



DRAFT

Rev	Description	Dsn	Chk	App	Date
D	UPDATED FOLLOWING STAGE 1 RSA COMMENTS	DV	DV	DH	17.10.23
C	CYCLE ROUTE EXTENDED ALONG SOUTHERN ARM	ADS	DH	KM	28.09.23
B	UPDATED TO WSCC COMMENTS	DV	DH	KM	12.07.23
A	TREES SURVEY ADDED / REDLINE UPDATED	DV	DH	KM	13.04.23

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Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANTSY FARM, MID SUSSEX

Drawing Title: PROPOSED ROUNDABOUT SOUTHERN ACCESS (B2036)

AO Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-005 — Rev: D

Designers Response Appendix A

Stage 1 Road Safety Audit

M & S Traffic

Road Safety Audit Stage 1

Land at Ansty Farm

Proposed Roundabout B2036

Southern Access

West Sussex

Date: 13th October 2023

Report produced for: Ardent Consulting Engineers

Report produced by: M & S Traffic Ltd

DOCUMENT CONTROL SHEET

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Report Title:	Land at Antsy Farm, Mid Sussex (Proposed Roundabout Southern Access - B2036) Road Safety Audit Stage 1
Date:	13th October 2023
Document reference and revision:	ARD/23//2207280/1/MM
Prepared by:	M & S Traffic
On behalf of:	West Sussex County Council

	Prepared by: (Name)	Checked by: (Name)	Approved by (Signature)	Date Approved
Revision	Martin Morris	Bryan Shawyer		13th October 2023
Designers Response				
Authority Response				

Distribution

Organisation	Contact	Copies
Ardent Consulting Engineers	David Howson	-

CONTENTS

1 INTRODUCTION

1.1 This report describes a Stage 1 Road Safety Audit carried out on proposed Section 278 works associated with a proposed development in Ansty, West Sussex, comprising of:

- The provision of a three-arm roundabout on the B2036 to serve the development.
- A parallel crossing on the eastern arm of the roundabout.

The Audit was requested by the design organisation, Ardent Consulting Engineers, Crescent Court, High St, Billericay, CM12 9AQ on behalf of West Sussex County Council as the Highway Authority.

1.2 The Audit Team membership was as follows:

Martin Morris, PGD, MCIHT, MSoRSA – Audit Team Leader
Highways England Approved RSA Certificate of Competency

Bryan Shawyer B.Eng. (Hons), MSc, MCIHT, MSoRSA– Audit Team Member
Highways England Approved RSA Certificate of Competency

1.3 The audit was undertaken following the principles of GG 119, The Design Manual for Roads and Bridges. The documents available at the time of the report are detailed in Appendix A.

1.4 The Audit took place at the Gillingham offices of M&S Traffic during October 2023 and comprised an examination of the documents provided as listed in Appendix A. A joint site visit and inspection was undertaken on the 10th of October 2023 between 11:30 and 17:30 hours. Weather conditions at the time were fine and the road surfaces were dry. Traffic flows and free flow speeds were moderate. There were low pedestrian flows and no cyclist movements observed during the site visit.

1.5 The report has been compiled, only with regards to the safety implications for road users of the layout presented in the supplied drawings. It has not been examined or verified for compliance with any other standards or criteria. This safety audit does not perform any "Technical Check function on these proposals. It is assumed that the Project Sponsor is satisfied that such a Technical Check" has been successfully completed prior to requesting this safety audit.

1.6 No Departures from Standard, traffic flow or personal injury collision data was provided to the Audit Team.

1.7 All comments and recommendations are referenced to the detailed drawings and the locations have been detailed relating to the plans supplied with the audit brief, Appendix B.

2 ITEMS RAISED BY PREVIOUS AUDITS

2.1 No previous Road Safety Audits were supplied for assessment.

3 ITEMS RAISED AT THE STAGE 1 AUDIT

3.1 General

3.1.1 PROBLEM

Location: Approaches to the roundabout.

Summary: Insufficient construction details could lead to overshoot or rear end shunt collisions.

The proposals do not include the introduction of anti-skid surfacing or detail the Polished Stone Value (PSV) to be used on the approaches to the roundabout and surfacing as part of the scheme. Surfacing with an insufficient PSV could lead to overshoot or rear end shunt collisions.

RECOMMENDATION

It is recommended that high friction surfacing should be provided on all the approaches to the roundabout and that the PSV of all surfacing should be provided for assessment a Stage 2 Safety Audit.

3.1.2 PROBLEM

Location: Proposed roundabout.

Summary: Ponding of surface water could lead to loss of control collisions.

Kerblines are being amended as part of these proposals, where no details of carriageway drainage have been provided for assessment; ponding on the carriageway or water moving across the carriageway at junctions or bends could lead to loss of control collisions, particularly in wet / icy conditions.

RECOMMENDATION

It is recommended that drainage details should be provided at Stage 2 Safety Audit.

3.1.3 PROBLEM

Location: Proposed Parallel crossing.

Summary: Insufficient signing could lead to could lead to vehicle to pedestrian / cyclist collisions or rear end shunts.

A national speed limit currently applies to this section of Harvest Hill, where the proposed speed limit on the eastern arm is unknown. This could lead to inappropriate vehicle speeds approaching the Parallel crossing, which should not be installed on roads with an 85th percentile speed of 35 mph or above without speed reducing measures to slow traffic.

Inappropriate vehicle speeds could lead to vehicle to pedestrian / cyclist collisions or rear end shunts.

RECOMMENDATION

It is recommended that a 30mph speed restriction should be applied to the eastern arm of the roundabout.

3.1.4 **PROBLEM**

Location: Approaches to the Parallel crossing.

Summary: Inappropriate surfacing could lead to vehicle to pedestrian / cyclist collisions or rear end shunts.

The proposals do not include the introduction of anti-skid surfacing or a surface with a high polished stone value on the approaches to the Parallel crossing. Surfacing with an inadequate PSV could lead to vehicles not being able to stop, leading to possible rear end shunt or vehicle to pedestrian / cyclist collisions.

RECOMMENDATION

It is recommended that antiskid surfacing or surfacing with a high PSV should be used on the approaches to the crossing.

3.2 Local Alignment

3.2.1 **PROBLEM**

Location. Approaches to the proposed roundabout.

Stopping Sight Distances (SSD) have been provided for assessment and at 215m are acceptable for the current national speed limit. An insufficient SSD may increase the risk of junction related or shunt type collisions at the roundabout and so the 120m SSD, which is commensurate with a 40mph design speed, should only be incorporated if a reduced speed limit of 40mph is introduced.

RECOMMENDATION

It is recommended that the SSD should be commensurate with the design speeds.

3.2.2 **PROBLEM**

Location. Western approach to proposed roundabout.

Summary: Insufficient Stopping Sight Distance may increase the risk of junction related or shunt type collisions at the roundabout.

On the westbound approach to the roundabout no SSD has been provided for assessment. There is concern that the SSD could pass over non-highway land. Vegetation or landscaping features in this splay could restrict visibility, where insufficient visibility may increase the risk of junction related or shunt type collisions at the roundabout.

RECOMMENDATION

It is recommended that the SSD should be supplied for assessment and that they should be within the adoptable highway, or that a suitable covenant should be arranged to ensure that the splay is not affected by planting or landscaping features.

3.2.3 **PROBLEM**

Location: Proposed roundabout.

Summary: Lack of vertical profile information could lead to side impact collisions and loss of control collisions.

The proposed roundabout is located on Harvest Hill, where there is a fall from the northwest to the southeast. At this early stage no vertical alignment details were provided for assessment. There is concern that inappropriate vertical profiles could restrict visibility at the junction, which may lead to side impact collisions and loss of control collisions.

RECOMMENDATION

It is recommended that vertical alignment details should be provided for assessment at Stage 2 Safety Audit.

3.2.4 **PROBLEM**

Location. Western approach to proposed Parallel crossing.

Summary: Restricted Stopping Sight Distance may increase the risk of vehicle to pedestrian / cyclist collisions or rear end shunts.

On the westbound approach to the Parallel crossing no SSD has been provided for assessment. There is concern that the SSD could pass over non-highway land. Vegetation or landscaping features in this splay could restrict visibility, where restricted SSD may increase the risk of vehicle to pedestrian / cyclist collisions or rear end shunts.

RECOMMENDATION

It is recommended that the SSD should be supplied for assessment and that they should be within the adoptable highway, or that a suitable covenant should be arranged to ensure that the splay is not affected by planting or landscaping features.

3.3 Junctions

3.3.1 **PROBLEM**

Location: Proposed roundabout.

Summary: Insufficient capacity could lead to rear end shunt or side impact collisions.

No details of expected flows and the capacity of the roundabout have been provided for assessment. Insufficient capacity could lead to congestion where excessive queuing at the roundabout could lead to driver frustration and the use of inappropriate gaps, further unbalanced flows could lead to entry problems on to the roundabout. This may lead to rear end shunt or side impact collisions.

RECOMMENDATION

It is recommended that the roundabout should operate without excessive queuing and with balanced flows and that an ARCADY or similar model should be provided for assessment.

3.4 Non-Motorised User (NMU) Provision

3.4.1 No comment.

3.5 Road Signs, Carriageway Markings and Lighting

3.5.1 **PROBLEM**

Location: Proposed roundabout and Parallel crossing.

Summary: Insufficient street lighting could lead to vehicle to pedestrian / cyclist collisions during the hours of darkness.

At this early stage no details of street lighting have been provided for assessment. A lack of lighting could increase the risk of loss of control and side impact collisions at the roundabout and vehicle to pedestrian / cyclist collisions during the hours of darkness.

RECOMMENDATION

It is recommended that street lighting should be checked with the Highway Authority's street lighting team and that a plan showing the light distribution should be provided for assessment at Stage 2 Safety Audit.

3.5.2 **PROBLEM**

Location: Proposed Parallel crossing.

Summary: Insufficient road markings could lead to vehicle to pedestrian / cyclist collisions.

At this early-stage full details of road markings have not been provided for assessment, including the Controlled Area. A lack of a Controlled Area could lead to inappropriate parking near the crossing that may restrict intervisibility, increasing the risk of vehicle to pedestrian / cyclist collisions.

RECOMMENDATION

It is recommended that the Controlled Area should be provided for assessment at Stage 2 Safety Audit.

4 ISSUES IDENTIFIED DURING THE ROAD SAFETY AUDIT THAT ARE OUTSIDE THE TERMS OF REFERENCE

4.1 Safety issues identified during the audit and site inspection that are outside the Terms of Reference, but which the Audit Team wishes to draw to the attention of the Client Organisation, are set out in this section. It is to be understood that, in raising these issues, the Audit Team in no way warrant that a full review of the highway environment has been undertaken beyond that necessary to undertake the Audit as commissioned.

4.2 The Audit Team had no issues to raise within this section.

5 AUDITOR TEAM STATEMENT

5.1 We certify that this audit has been carried out following the principles of GG 119.

Audit Team Leader

Martin Morris
PGD, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed:  Date: 13/10/2023

Audit Team Member

Bryan Shawyer
BEng (Hons), MSc, MCIHT, MSoRSA
Highways England Approved RSA Certificate of Competency

Signed:  Date: 13/10/2023

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 www.mstraffic.co.uk

APPENDIX A

List of Drawings and other information submitted for auditing:

Drawing Number	Title
2207280-003 E	Proposed Roundabout Southern Access B2036

Supporting documentation:

- Covering emails, Ardent Consulting Engineers.

APPENDIX B

Plan attached showing the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

N

EXISTING PUBLIC RIGHT OF WAY

215m FORWARD VISIBILITY ON APPROACH BASED ON 60mph (NOTE APPROACHING WITHIN 30mph SPEED LIMIT)

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

CONNECT TO EXISTING FOOTWAY

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

3.1.1 & 3.2.1

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 70.18m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 40.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 40.00m

POTENTIAL CROSSING POINT AND TRANSITION FROM SEGREGATED CYCLE ROUTE TO SHARED FOOT/CYCLEWAY

SIGNAGE AND DETAILS TBC

PROPOSED DEVELOPMENT

3.1.1, 3.2.2 & 3.2.4

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 67.00m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m
SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 20.00m

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD116
EXIT WIDTH 7.00m
EXIT RADIUS 42.00m

PROPOSED DROPPED KERB FOOTWAY/CYCLEWAY TIE INTO EXISTING KERBS

TIE INTO EXISTING ROAD ALIGNMENT

3.1.3, 3.1.4, 3.5.1 & 3.5.2

EXIT WIDTH AND RADIUS AS PER FIG 3.28 OF CD1116
EXIT WIDTH 7.00m
EXIT RADIUS 60.00m

CIRCULATORY CARRIAGEWAY WIDTH AS PER PARA 3.6 OF CD116
THE WIDTH OF THE CIRCULATORY CARRIAGEWAY FOR NORMAL OR COMPACT ROUNDABOUTS SHALL BE BETWEEN 1.0 AND 1.2 TIMES THE MAXIMUM ENTRY WIDTH, EXCLUDING ANY OVERRUN AREA - 5.40m

ENTRY KERB RADIUS AS PER FIG 3.19 OF CD116
RADIUS OF 15m

ENTRY WIDTH AS PER PARA 3.14.1 OF CD116
AT THE GIVE WAY LINE A LANE WIDTH OF 4.5m SHOULD BE USED AT SINGLE LANE ENTRIES

ENTRY PATH RADIUS AS PER FIG 3.20 OF CD116
ENTRY PATH RADIUS 99.84m

3.1.2, 3.2.3, 3.3.1, 3.5.2 & 3.5.3

3.1.1 & 3.2.1

120m FORWARD VISIBILITY ON APPROACH BASED ON 40mph SPEED LIMIT

215m FORWARD VISIBILITY ON APPROACH BASED ON POSTED SPEED LIMIT (60mph)

B2036 SOUTH

ARCADY ROUNDABOUT GEOMETRY:	(ARM 1) B2036 NORTH	(ARM 2) DEVELOPMENT ACCESS	(ARM 3) B2036 SOUTH
APPROACH ROAD HALF WIDTH	3.00m	3.25m	3.30m
ENTRY WIDTH	4.50m	4.50m	4.50m
EFFECTIVE FLARE LENGTH	10.00m	11.00m	14.50m
ENTRY RADIUS	40.00m	20.00m	15.00m
INSCRIBED CIRCLE DIAMETER	30.00m	30.00m	30.00m
CONFLICT ANGLE	30.00°	37.00°	29.00°
DEFLECTION	70.18m	67.00m	99.84m

NOTES:

ROUNDABOUT DESIGNED TO CD 116 GEOMETRIC DESIGN OF ROUNDABOUTS (FORMERLY TD 16/07, TD 50/04, TD 51/17, TD 54/07, TA 23/81, TA 78/97, TA 86/03, TD 70/08)

DESIGN IS BASED ON TOPOGRAPHICAL SURVEY PRODUCED BY MARVIN & PARTNERS LTD DATED FEB 2023

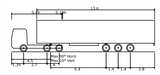
ROUNDABOUT SUBJECT TO FURTHER DESIGN REFINEMENT OF NON-VEHICULAR WORKS, SPEED SURVEYS, ROAD SAFETY AUDIT, LAND OWNERSHIP CONFIRMATION, ARBORICULTURAL SURVEY AND DISCUSSIONS WITH HIGHWAYS

THE PEDESTRIAN/CYCLE ACCESS STRATEGY IS SUBJECT TO DISCUSSIONS WITH HIGHWAYS BUT INDICATIVE ROUTING/CROSSING LOCATIONS HAVE BEEN SHOWN SUBJECT TO REVIEW AGAINST LAND OWNERSHIP/CONSTRAINTS INFORMATION, ECOLOGY INFORMATION AND ARBORICULTURAL SURVEY.

KEY:

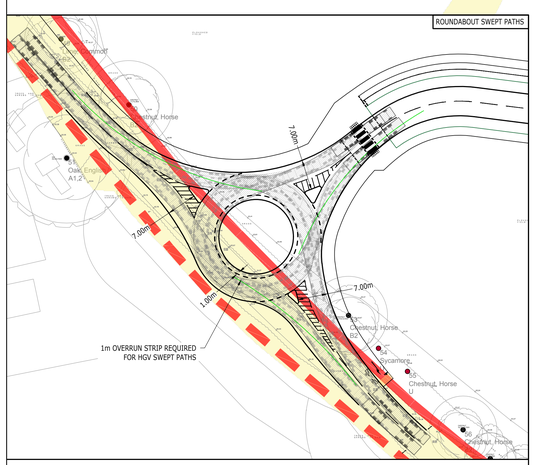
- INDICATIVE SITE BOUNDARY
- INDICATIVE APPLICATION ACCESS WORKS BOUNDARY TO BE CONFIRMED
- EXISTING PUBLIC RIGHT OF WAY
- DEFLECTION ANGLE
- FORWARD VISIBILITY SPLAY BASED ON 40mph SPEED LIMIT
- FORWARD VISIBILITY SPLAY BASED ON 60mph SPEED LIMIT
- HIGHWAY BOUNDARY TRANSCRIBED FROM WEST SUSSEX RECORDS

VEHICLE SPECIFICATION:

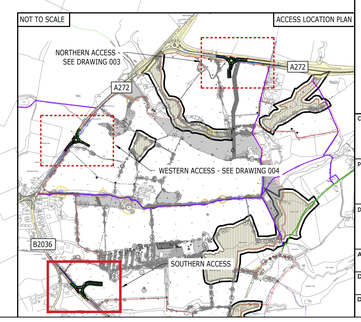


Max Legal Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.500m
Overall Body Height	3.623m
Min Body Ground Clearance	0.255m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.870m

ROUNDABOUT SWEPT PATHS



NOT TO SCALE — ACCESS LOCATION PLAN



DRAFT

Rev	Description	Drn	Chk	App	Date
C	CYCLE ROUTE EXTENDED ALONG SOUTHERN ARM	ADS	DH	KM	28.09.23
B	UPDATED TO WSCC COMMENTS	DV	DH	KM	12.07.23
A	TREES SURVEY ADDED / REDLINE UPDATED	DV	DH	KM	15.04.23

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Client: FAIRFAX ACQUISITIONS LTD

Project Title: LAND AT ANTSY FARM, MID SUSSEX

Drawing Title: PROPOSED ROUNDABOUT SOUTHERN ACCESS (B2036)

A0 Scale	Date	Designed by
1:500	22.02.23	DV
Drawn by	Checked by	Approved by
DV	DV	DH

Drawing Number: 2207280-005 — Rev: C

Designers Response Appendix B

M&S Traffic Response

David Howson

From: bryan.shawyer <bryan.shawyer@mstraffic.co.uk>
Sent: 25 October 2023 10:01
To: David Howson; martin.morris
Cc: Jamie Symington; Dan Vallance
Subject: RE: Ansty - Designers Response 2nd draft - Southern Access

Hi David

Many thanks for these our comments are as follows:

3.1.1 Noted and accepted.
3.1.2 Noted and accepted.
3.1.3 Noted and accepted.
3.1.4 Noted and accepted.
3.2.1 Noted and accepted.
3.2.2 Noted and accepted.
3.2.3 Noted and accepted.
3.2.4 Noted and accepted.
3.3.1 Noted and accepted.
3.5.1 Noted and accepted.
3.5.2 Noted and accepted.

Kind regards

Bryan

Bryan Shawyer
Director

M&S Traffic Ltd
Aeolus House, 32 Hamelin Road, Gillingham, Kent ME7 3EX

M: 07891 596289 T: 01634 307498

From: David Howson <dhowson@ardent-ce.co.uk>
Sent: Tuesday, October 24, 2023 5:39 PM
To: martin.morris <martin.morris@mstraffic.co.uk>; bryan.shawyer <bryan.shawyer@mstraffic.co.uk>
Cc: Jamie Symington <jsymington@ardent-ce.co.uk>; Dan Vallance <dvallance@ardent-ce.co.uk>
Subject: Ansty - Designers Response 2nd draft - Southern Access

Dear Martin,
Further to receipt of the Stage 1 RSA prepared by M&S Traffic, we have collated a Designers Response (DR) and in accordance with GG119 will be sending to WSCC Highways as the Overseeing Organisation in due course.

However, in the interim we though it appropriate to send our draft DR for M&S feedback and comment that we have suitably addressed the points raised for RSA1.

Kind regards
David

David Howson
Associate

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CONSULTING ENGINEERS

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Infrastructure | Transport Planning | Flood Risk | Acoustics | Air Quality

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Designers Response Appendix C

ARCADY Output

Junctions 10

ARCADY 10 - Roundabout Module

Version: 10.0.4.1693

Filename: Jct W - South Site Access.j10
Path: Y:\ARDENT PROJECTS\2207280 - Land at Ansty Farm, Mid Sussex\Transport\ARCADY
Report generation date: 27/09/2023 12:30:35

»2039 Do Something Isolated, AM
»2039 Do Something Isolated, PM

Summary of junction performance

	AM			PM		
	Q (Veh)	Delay (s)	RFC	Q (Veh)	Delay (s)	RFC
	2039 Do Something Isolated					
1 - B2036 (N)	0.1	3.58	0.12	0.5	4.80	0.34
2 - Site Access 3	0.0	3.26	0.04	0.0	3.71	0.04
3 - B2036 (S)	0.6	4.68	0.37	0.5	4.28	0.33

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

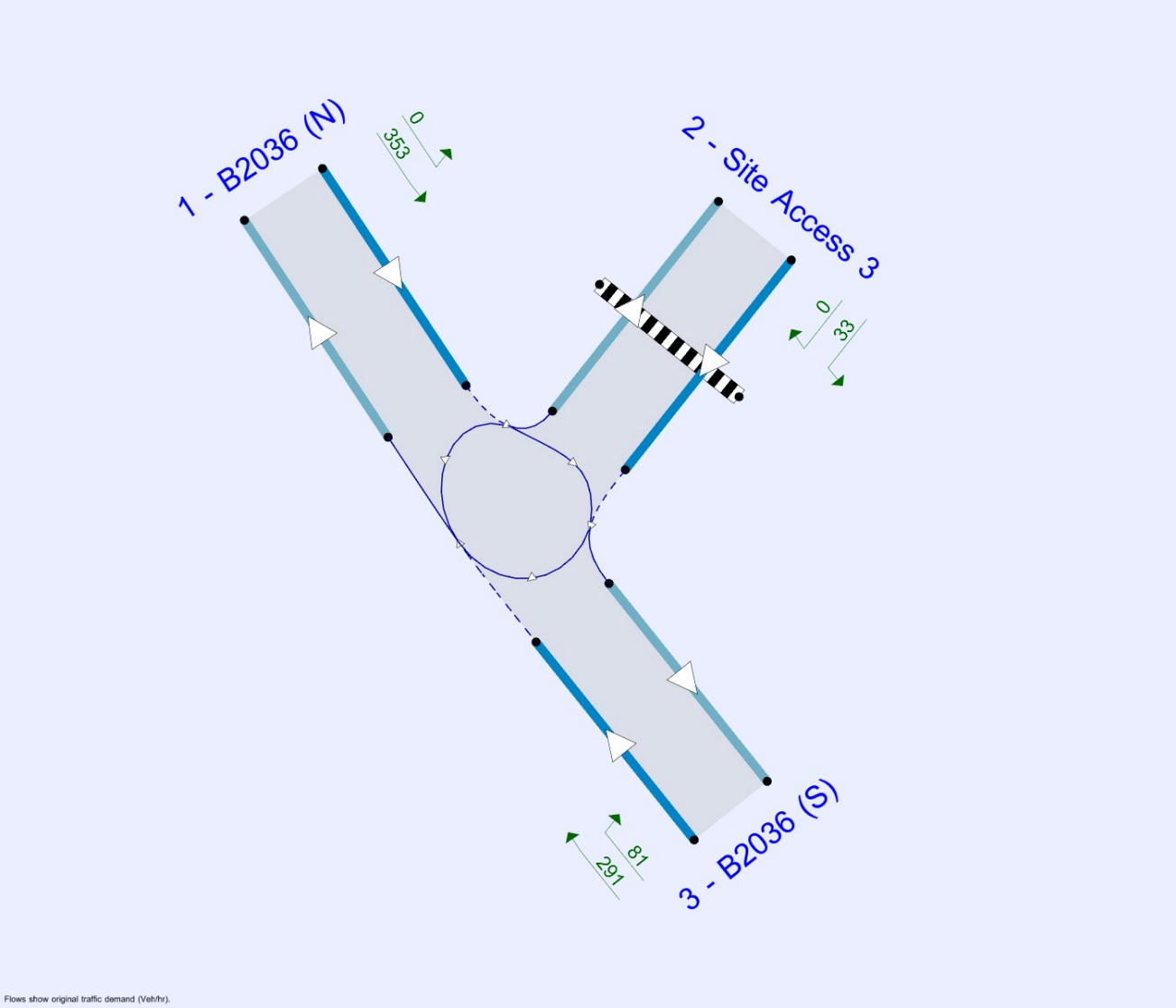
File summary

File Description

Title	B2036 / Site Access 3
Location	
Site number	
Date	28/04/2023
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Hour	perHour



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2039 Do Something Isolated, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B2036 / Site Access 3	Standard Roundabout		1, 2, 3	4.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.34	A

Arms

Arms

Arm	Name	Description	No give-way line
1	B2036 (N)		
2	Site Access 3		
3	B2036 (S)		

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Entry only	Exit only
1 - B2036 (N)	3.00	4.50	10.0	40.0	30.0	30.0		
2 - Site Access 3	3.25	4.50	11.0	20.0	30.0	37.0		
3 - B2036 (S)	3.30	4.50	14.5	15.0	30.0	29.0		

Zebra Crossings

Arm	VGAP (PCU)	Vehs queueing on exit (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
2 - Site Access 3	3.00	3.00		Distance	6.50	4.64

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B2036 (N)	0.573	1246
2 - Site Access 3	0.555	1232
3 - B2036 (S)	0.566	1271

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2039 Do Something Isolated	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 (N)		ONE HOUR	✓	129	100.000
2 - Site Access 3		ONE HOUR	✓	39	100.000
3 - B2036 (S)		ONE HOUR	✓	415	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - B2036 (N)		
2 - Site Access 3	[ONEHOUR]	100.00
3 - B2036 (S)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	129
	2 - Site Access 3	0	0	39
	3 - B2036 (S)	385	30	0

Vehicle Mix

HV %s

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	7
	2 - Site Access 3	0	0	0
	3 - B2036 (S)	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 (N)	0.12	3.58	0.1	A	118	178
2 - Site Access 3	0.04	3.26	0.0	A	36	54
3 - B2036 (S)	0.37	4.68	0.6	A	381	571

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	97	24	22		1152	0.084	97	289	0.0	0.1	3.410	A
2 - Site Access 3	29	7	97	75.29	1174	0.025	29	22	0.0	0.0	3.143	A
3 - B2036 (S)	312	78	0		1225	0.255	311	126	0.0	0.3	3.932	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	116	29	27		1150	0.101	116	346	0.1	0.1	3.480	A
2 - Site Access 3	35	9	116	89.90	1163	0.030	35	27	0.0	0.0	3.191	A
3 - B2036 (S)	373	93	0		1225	0.304	373	151	0.3	0.4	4.220	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	142	36	33		1147	0.124	142	423	0.1	0.1	3.582	A
2 - Site Access 3	43	11	142	110.10	1147	0.037	43	33	0.0	0.0	3.258	A
3 - B2036 (S)	457	114	0		1225	0.373	456	185	0.4	0.6	4.676	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	142	36	33		1147	0.124	142	424	0.1	0.1	3.582	A
2 - Site Access 3	43	11	142	110.10	1147	0.037	43	33	0.0	0.0	3.258	A
3 - B2036 (S)	457	114	0		1225	0.373	457	185	0.6	0.6	4.684	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	116	29	27		1150	0.101	116	347	0.1	0.1	3.484	A
2 - Site Access 3	35	9	116	89.90	1163	0.030	35	27	0.0	0.0	3.191	A
3 - B2036 (S)	373	93	0		1225	0.304	374	151	0.6	0.4	4.231	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	97	24	23		1152	0.084	97	290	0.1	0.1	3.411	A
2 - Site Access 3	29	7	97	75.29	1174	0.025	29	23	0.0	0.0	3.146	A
3 - B2036 (S)	312	78	0		1225	0.255	313	127	0.4	0.3	3.946	A

2039 Do Something Isolated, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	B2036 / Site Access 3	Standard Roundabout		1, 2, 3	4.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.50	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2039 Do Something Isolated	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
1 - B2036 (N)		ONE HOUR	✓	353	100.000
2 - Site Access 3		ONE HOUR	✓	33	100.000
3 - B2036 (S)		ONE HOUR	✓	372	100.000

Demand overview (Pedestrians)

Arm	Profile type	Av. Ped flow (Ped/hr)
1 - B2036 (N)		
2 - Site Access 3	[ONEHOUR]	100.00
3 - B2036 (S)		

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	353
	2 - Site Access 3	0	0	33
	3 - B2036 (S)	291	81	0

Vehicle Mix

HV %s

		To		
		1 - B2036 (N)	2 - Site Access 3	3 - B2036 (S)
From	1 - B2036 (N)	0	0	5
	2 - Site Access 3	0	0	0
	3 - B2036 (S)	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B2036 (N)	0.34	4.80	0.5	A	324	486
2 - Site Access 3	0.04	3.71	0.0	A	30	45
3 - B2036 (S)	0.33	4.28	0.5	A	341	512

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	266	66	61		1153	0.230	265	218	0.0	0.3	4.045	A
2 - Site Access 3	25	6	265	75.29	1078	0.023	25	61	0.0	0.0	3.418	A
3 - B2036 (S)	280	70	0		1251	0.224	279	289	0.0	0.3	3.697	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	317	79	73		1147	0.277	317	261	0.3	0.4	4.336	A
2 - Site Access 3	30	7	317	89.90	1047	0.028	30	73	0.0	0.0	3.537	A
3 - B2036 (S)	334	84	0		1251	0.267	334	347	0.3	0.4	3.924	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	389	97	89		1138	0.342	388	320	0.4	0.5	4.798	A
2 - Site Access 3	36	9	388	110.10	1006	0.036	36	89	0.0	0.0	3.712	A
3 - B2036 (S)	410	102	0		1251	0.327	409	424	0.4	0.5	4.273	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	389	97	89		1138	0.342	389	320	0.5	0.5	4.804	A
2 - Site Access 3	36	9	389	110.10	1005	0.036	36	89	0.0	0.0	3.713	A
3 - B2036 (S)	410	102	0		1251	0.327	410	425	0.5	0.5	4.276	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	317	79	73		1147	0.277	318	262	0.5	0.4	4.347	A
2 - Site Access 3	30	7	318	89.90	1047	0.028	30	73	0.0	0.0	3.539	A
3 - B2036 (S)	334	84	0		1251	0.267	335	348	0.5	0.4	3.931	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B2036 (N)	266	66	61		1153	0.230	266	219	0.4	0.3	4.060	A
2 - Site Access 3	25	6	266	75.29	1077	0.023	25	61	0.0	0.0	3.424	A
3 - B2036 (S)	280	70	0		1251	0.224	280	291	0.4	0.3	3.708	A