



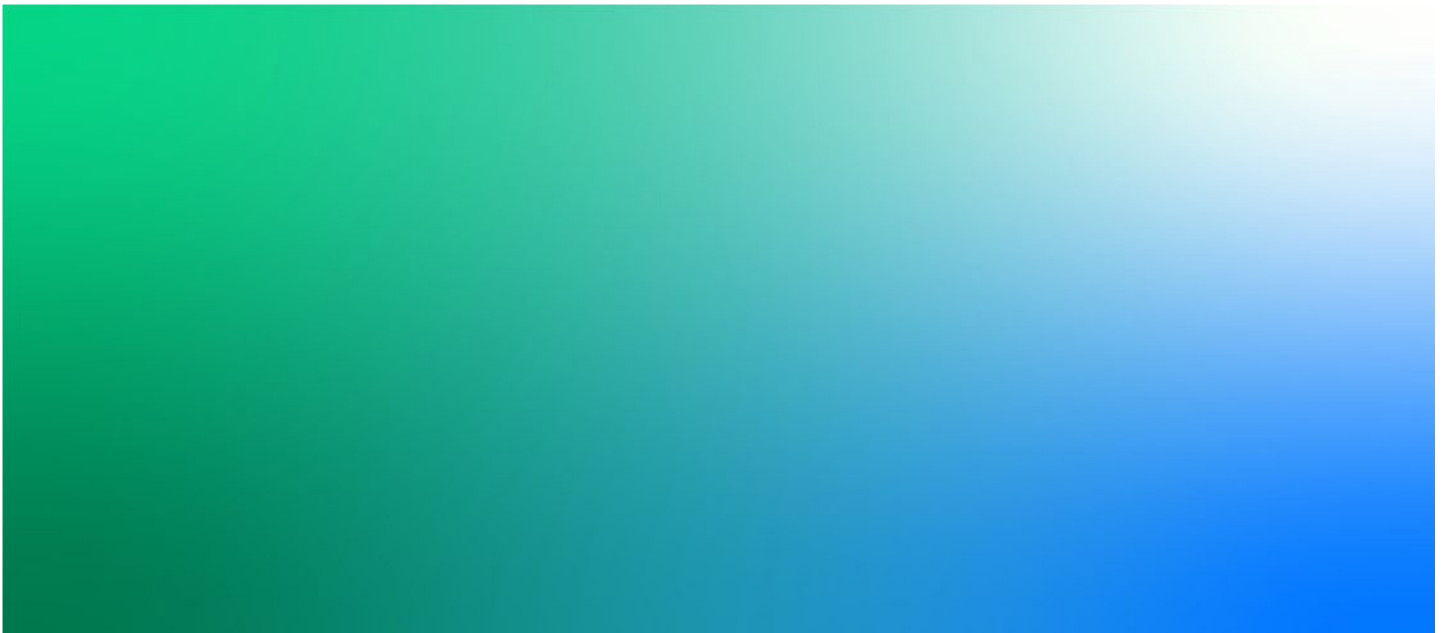
Hole Farm Community Woodland

Designer's response to Stage 1 Road Safety Audit

B2428401.LT.00 -50-Stage 1 RSAResponse| P01

May 2023

National Highways / Forestry England



Hole Farm Community Woodland

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 Client Name: National Highways / Forestry England
 Project Manager: David Allen
 Author: Gianluca Colucci
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Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved
P01	04/05/2023	Designer's Response to RSA	GC	BB		DA

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Appendix A. Road safety audit response

Appendix B. Road safety audit Brief (Rev03)

1. Introduction

This is the Designer's Response to a Stage 1 Road Safety Audit (RSA) undertaken by an independent Jacobs RSA team, from an office not linked to the design team, dated April 2023 in accordance with DMRB GG 119.

It is noted that RSA1 items raised have been tabulated with the Designer's Responses in *Table A.4 Road safety audit decision log* in the following sections of this report. For conciseness of document, only the RSA1 finding problem 'headline' has been included in the table. For further detailed commentary of each problem raised, please read this document in conjunction with the full RSA 1 Report (report reference B2428401.LT.00-50 - Stage 1 RSA). All problem numbers referenced in this report cross reference to those in the full RSA 1 Report.

A number of observations were raised by the Road Safety Audit team, as included in the RSA 1 Report

It is considered that the items referred to in the observations fall within the scope of standard operational maintenance for the local authority to uphold. These include standard vegetation clearance, replacement of worn signs and road markings. The design organisation will consult the Local Highway Authority and advise them of the observations raised by the RSA.

Appendix A. Road safety audit response

A1 Project Details

Table A.1 Project Details

Report Title:	Hole Farm Community Woodland: Designer's Response to Stage 1 Road Safety Audit
Date:	04/05/2023
Document reference (and revision):	B2428401.LT.00-50-Stage 1 RSA Response (P01)
Prepared by:	Jacobs UK Ltd
On behalf of:	National Highways

Table A.2 Authorisation Sheet

Project:	Hole Farm Community Woodland
Report title:	Hole Farm Community Woodland: Designer's Response to Stage 1 Road Safety Audit
Prepared by:	
Name:	Gianluca Colucci
Position:	Highway Engineer
Signed:	<i>Gianluca Colucci</i>
Organisation:	Jacobs UK Ltd
Date:	May 2023
Approved By:	
Name:	Bleddyn Bridge
Position:	Highways Lead
Signed:	<i>Bleddyn Bridge</i>
Organisation:	Jacobs UK Ltd
Date:	May 2023

A2 Introduction

This report is a Designer's Response to a Stage 1 Road Safety Audit carried out on the Hole Farm Community Woodland project. The purpose of the scheme is the creation of a community woodland facility comprising: vehicular access into a 94-space car and coach park, with EV charging points and overflow area; substation; an open sided visitor shelter; a modular café with covered outdoor seating area, bin store, cycle parking and WC facilities; demolition of a grain store and development of a community building including staff welfare and office facilities and outdoor terrace; staff and disabled car parking; demolition of an agricultural machinery store and construction of a Forestry England Barn; service yard and vehicle turning circle; surfaced and unsurfaced woodland paths; creation of six new ponds; countryside heritage and interpretation boards and informal natural play areas at Hole Farm Lane, Great Warley, Brentwood, Essex CM13 3JD (the site)

A3 Key Personnel

Table A.3 Key personnel

Overseeing Organisation:	National Highways Eve Herrington
RSA Team:	Jacobs UK Ltd Paul Bartley – Senior Associate Director (Road Safety) Ciaron Morgan – Associate Director (Road Safety)
Design Organisation:	Jacobs UK Ltd Gianluca Colucci – Highways Engineer Parmjit Nila – Transport Planner Bleddyn Bridge – Highways Lead Arcadis UK David Allen – Project Manager

A4 Road safety audit decision log

Table A.4 Road safety audit decision log

Problems & Recommendations – Hole Farm Community Woodland

RSA Problem	RSA recommendation	Design Organisation response	Overseeing Organisation response	Agreed RSA action
<p>3.1 General: Lack of signing to advise large vehicles such as HGV's or Coaches that there is a height barrier at the entrance to the car park</p> <p>Location: Carpark entrance</p>	<p>Provide appropriate signing on Great Warley Street to the car park for all users, ensuring this access is signed for motor vehicles only</p>	<p>Agreed.</p> <p>To clarify – the current bell mouth access to the car park has been designed to cater for a maximum design vehicle of a 15m Luxury Coach 15m (refer to drawing <i>Hole-Farm_Highways.003.2</i>). The setback of the height barrier (from the B186) will be determined during the later design stages with cognisance of the requirements of the design vehicle.</p> <p>Appropriate signing will be provided at detailed design to instruct vehicles of the height barrier at the entrance to the car park.</p> <p>Signage will be shown on detailed construction plans, and it should be captured in the following RSA stage.</p>	<p>In agreement with the Design Organisation.</p>	<p>Accepted, based on further warning signs being erected.</p>
<p>3.2 General: Insufficient visibility of junction from the south</p> <p>Location: Proposed new access off Great Warley Street</p>	<p>Ensure that the appropriate SSD in both directions along Great Warley Street can be achieved and where required, the design is revised to take account of the change in vertical alignment and potential higher vehicle speeds travelling along Great Warley Street</p>	<p>Disagree - but with comments.</p> <p>To clarify – the RSA refers to drawing <i>Hole-Farm_Highways.002.3</i>, but it is assumed that the assessment was carried on the <i>Hole-Farm_Highways.003.2</i>.</p> <p>Junction visibility has been assessed in 2D in accordance with CD123 cl3.2 to identify the required vegetation clearance, based on the topographical survey data.</p> <p>Junction visibility has also been assessed in 3D with Civil 3D to consider the vertical profile approaching to the proposed junction. The visibility profile shown below confirms that, based on the available topographical survey data, the change in gradient on the B186 does not impact on the visibility and that appropriate vegetation clearance is accommodated within the planning application boundary along the western side of the road.</p>	<p>In agreement with the Design Organisation.</p>	<p>Accepted, based on design in accordance with CD123 and use of topo survey.</p>

RSA Problem	RSA recommendation	Design Organisation response	Overseeing Organisation response	Agreed RSA action
<p>3.3 General: Inappropriate marking of new internal footway.</p> <p>Location: Proposed new 2.0m segregated footway</p>	<p>Increase the width of the proposed new footway to allow all users to share a segregated footway facility or provide an alternative footway arrangement to</p>	<p>Disagree but with comments: The proposed segregated footpath at the new bell mouth access to the car park, it is not intended for shared used pedestrian/cycle, but for pedestrian only. The existing footway on Great Warley Street is circa 1.2m wide, therefore deemed unsuitable for shared use at its current state. No improvement of the existing</p>	<p>In agreement with the Design Organisation.</p>	<p>Accepted following confirmation that the path is only</p>

RSA Problem	RSA recommendation	Design Organisation response	Overseeing Organisation response	Agreed RSA action
	<p>accommodate all users safely.</p>	<p>footway on the B186 are proposed as part of the project, it is therefore assumed that cyclists use the carriageway lane to travel and will continue to do so to ingress and egress the new car park</p> <p>The proposed 2m segregated footway is designed in accordance with the Inclusive Mobility Guidance from DfT. The type of segregation will be implemented by segregation strip or kerb line, depending on the drainage strategy pursued in detailed design</p> <p>Should the risk for pedestrian be deemed inappropriate at this location, there is opportunity to widen the footway and rearrange the drainage proposal at detailed design, while maintaining a safe offset from the gas main.</p>		<p>for pedestrians.</p>

A5 Design organisation and Overseeing Organisation statements

Table A.5 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 Allen
Signed:	
Position:	Project Manager
Organisation:	Arcadis UK
Date:	11/05/ 2023

Table A.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:	Eve Herrington
Signed:	
Position:	Programme Manager
Organisation:	National Highways
Date:	11/05/2023

Appendix B. Road safety audit Brief (Rev03)

Lower Thames Crossing

Hole Farm Community Woodland – B186
Great Warley Street, Road Safety Audit Brief

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Author	Approver	Date	Revision
Gianluca Colucci	David Allen	03/04/2023	P03

1 Context and Background

1.1 Background

Hole Farm, 95 hectares (ha) agricultural site, was purchased by National Highways in 2021 as part of the Legacy and Benefits strategy for the Lower Thames Crossing (LTC) Development Consent Order (DCO) project. Working in partnership with Forestry England, the site has been identified as providing an opportunity to create a new community woodland through a combination of natural regeneration of habitats and planting. Facilities for the community such as parking, visitor facilities and a kiosk are proposed, alongside buildings reconfiguration and new reverse bays to improve manoeuvring for harvesting purpose. The location of Hole Farm in relation to LTC project can be seen in Figure 1 below.



Figure 1. Location of Hole Farm in relation to LTC

The Hole Farm Town and Country Planning Application (TCPA) will include the following elements, as shown in the schematic plan below:

- vehicular access on Great Warley Street and a 100-space car park, with overflow area, substation and bin store;
- an open sided visitor shelter; a modular café and WC facilities;
- surfaced and unsurfaced woodland paths;
- an access road from the car park to Hole Farm lane to facilitate harvesting operations, maintenance and emergency access resilience to the site
- creation of ponds;
- countryside heritage and interpretation and informal natural play areas;
- demolition of a brick built stable block and open fronted shed within the curtilage of a listed building;
- demolition of store and development of a community space with staff welfare and office facilities and outdoor terrace;
- demolition of an existing store and construction of a secure storage space and barn;
- log storage and lorry turning area at Hole Farm Lane, approx. 240m north of Coldham Hall Lane and elongated T-bay adjacent to proposed building cluster.

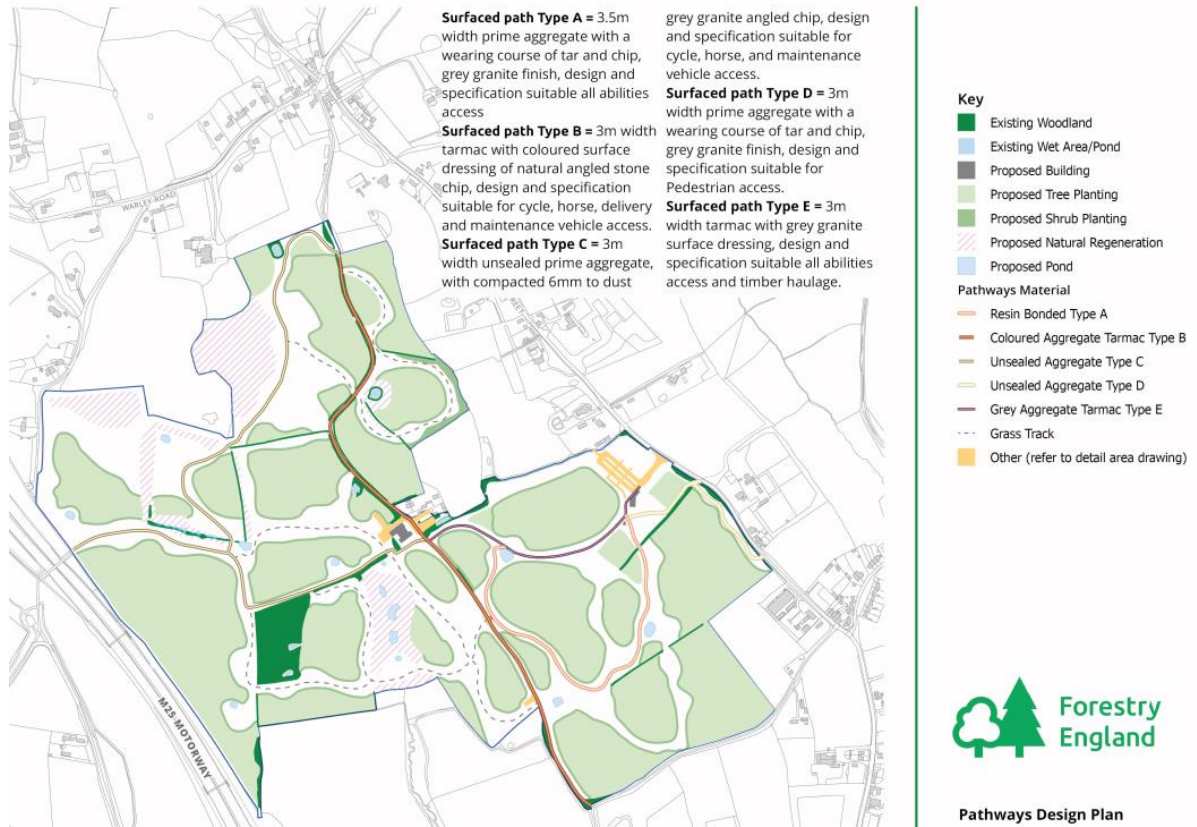


Figure 2: Hole Farm Woodland schematic plan

2 Description of works - Scope

The proposed access to the car park is placed on Great Warley Street, on a section with 3% uphill gradient driving north and a 40mph mandatory speed limit.

In accordance with GG119 cl.2.1, where there are physical changes to the highway impacting on road user behaviour, a Road Safety Audit shall apply. This document constitutes the brief for the RSA stage 1 (in accordance with cl 4.2) to be undertaken by the RSA safety team.

The proposed access to the car park is a Simple Priority Junction shown in appendix A (extract below).

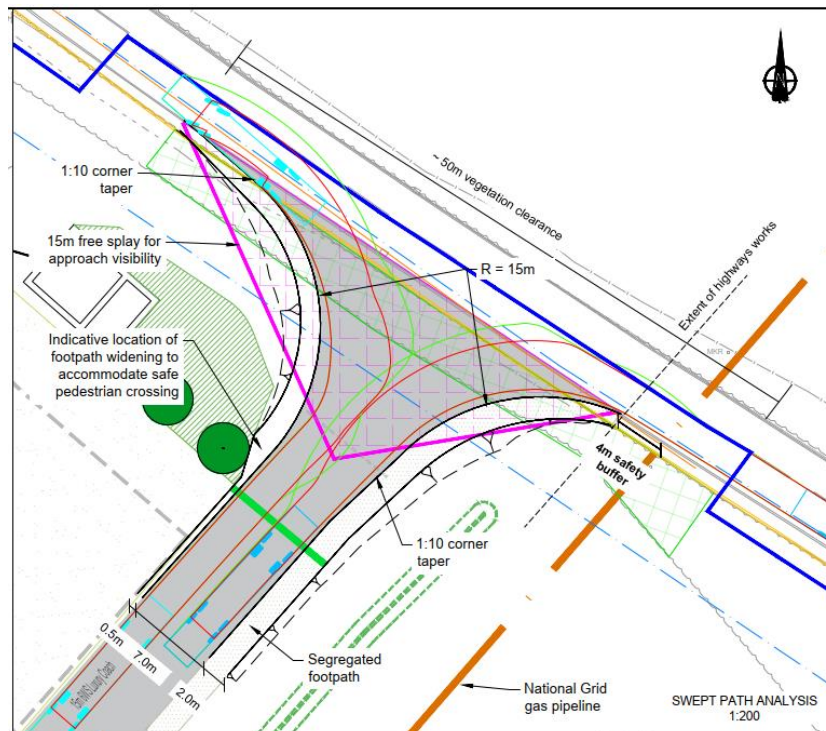


Figure 3 – Bell mouth car park entrance

CD123 cl.4.1 states that direct accesses shall only be used where less than 50 movements per week are expected, otherwise a priority junction may be provided instead. As stated on the Transport Statement, the assumed movements for Hole Farm car park are based on a similar site at Thorndon Country Park and are:

- 51 vehicles arrive and 29 depart - AM peak (0800-0900),
- 26 vehicles arrive and 31 depart - PM peak (1700-1800).

Considering the above and the relatively high speed on Great Warley Street (design speed 70kph), to promote a safer access onto the road network the bell mouth has been designed to a simple priority junction.

The new bell mouth is located about 100m south of the existing bell mouth on Great Warley Street, serving as maintenance access to Anglian Water. This location is deemed ideal because sited on a relatively straight section of the road, with full free 120m visibility splay either side, achievable with an approx. 50m of linear vegetation clearance along the south

side of Great Warley Street (deemed to be a Category U hedge – unsuitable for retention due to poor condition – by the Arboricultural report). Accurate topo survey data does not cover the full SSD analysis towards north but stops circa 20m away from the target point. However, meshed analysis of the latest topo survey with previous ground data (of a lesser degree of accuracy), indicates free splay towards north with reasonable assurance, to be confirmed at detailed design.

Visibility envelopes assessed in accordance with CD109 table 2.10 and CD123 cl. 3.4, prove full SSD to the nearside edge is achieved prior to the existing bend further south on Great Warley Street – if the bell mouth was to be moved further south, the sight splay would affect considerably the vegetation clearance along the bend. A 15m splay on the approach is deemed to be kept free of obstructions, as per CD123 cl.3.2.

The extent of the work is defined considering a free 4m buffer zone from the centreline of an existing National Grid gas pipeline, just south of the proposed bell mouth. Technical advice from a utility specialist requires a 3m buffer zone from the edge of the pipe but, given the uncertainty of exact location, diameter and the preliminary stage of design, a conservative approach is preferred. The utilities survey shows telecom and electrical cabling running under Great Warley Street footpath where the proposed access is placed – liaison with statutory undertakers and additional GPR/trench survey may be required by the contractor on site prior commencement of the work.

In terms of geometric design, the simple priority junction is designed in accordance with CD123 cl. 5.6.2, with corner radii to cater for a **15m long coach** egress and ingress, providing a 15m radius and 1:10 corner taper. The approach to the bell mouth from the car park is below 4% gradient.

According to the access strategy provided by Forestry England, an infrequent use of the car parking by coaches is expected (about once a month), therefore a simultaneous egress and ingress of coaches is not considered. With regards to the coach bay, the Essex Parking Design standards do not mention specific size for the bay, nor does Manual for Street. For reference, the guidance from British Parking Association has been considered and tailored to the assumed maximum 15m long coach. The bay is 18m long, with 10m entry taper and 5m exit taper to ensure manoeuvring of the bus will not encroach the turning of vehicles leaving the car park (assuming the one way clockwise flow).

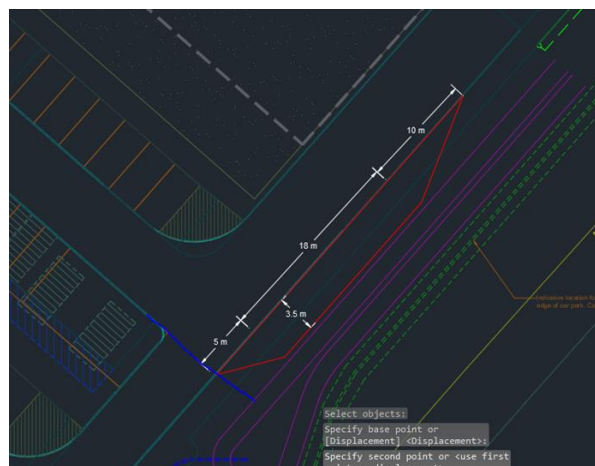
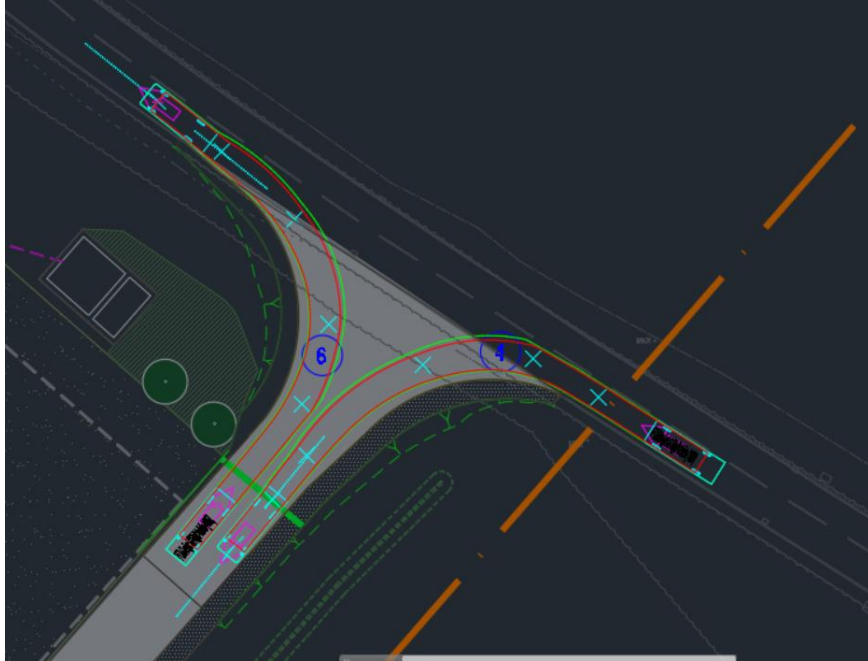


Figure 4: Coach Bay at car park

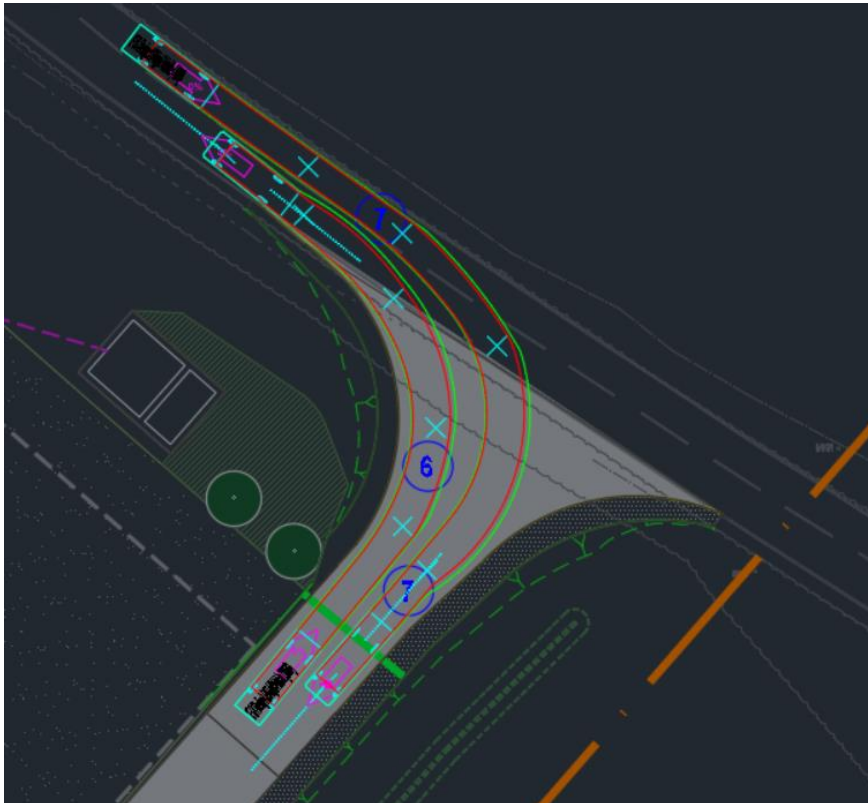
The bell mouth cross section is designed to cater for the simultaneous egress and ingress of 2 standard Rigid Vehicles (FTA Design LG Rigid Vehicle - 7m long).

All simultaneous movements have been assessed:

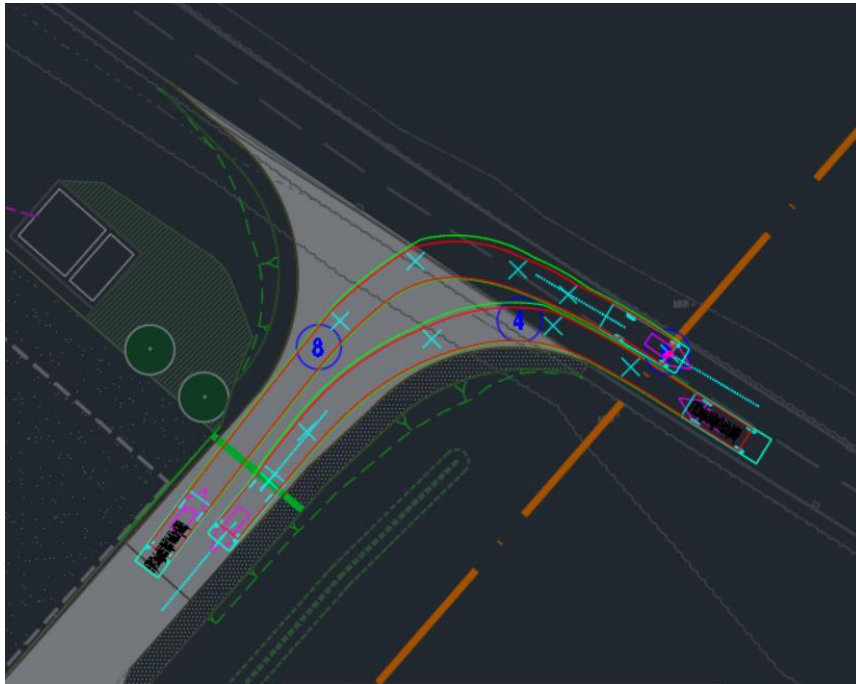
- left turn egress + left turn ingress



- left turn egress + right turn ingress



- right turn egress + left turn ingress



To enable the movements above and promote a conservative preliminary design approach to provide room for improvement at a later stage, a carriageway width of 7m has been provided leading to the car park. A verge 0.5m wide has been proposed on the northern side with a local widening prior the bell mouth to accommodate a safe pedestrian crossing, away from the carriageway edge. A segregated 2m wide footpath along the southern side tails from the existing footpath on Great Warley Street, leading to the kiosk and the car park.

An indicative gate has been shown on the plan, in line with the proposed car park hedgerows, providing adequate setback from the carriageway edge for a large vehicle to turn in and stop at the gate, with no part of the vehicle overhanging onto the carriageway.

An existing PRoW comes from north-east onto Great Warley Street about 110m south of the proposed bell mouth – no zebra crossing is currently present at this location.



The existing pedestrian crossing shown above is outside the highways boundary and deemed out of scope for the proposed Hole Farm development.

Two additional pedestrian accesses will be included on Great Warley Street as part of the Hole Farm landscape development proposal and are indicatively shown on the plan below. The masterplan is shown in Appendix B.



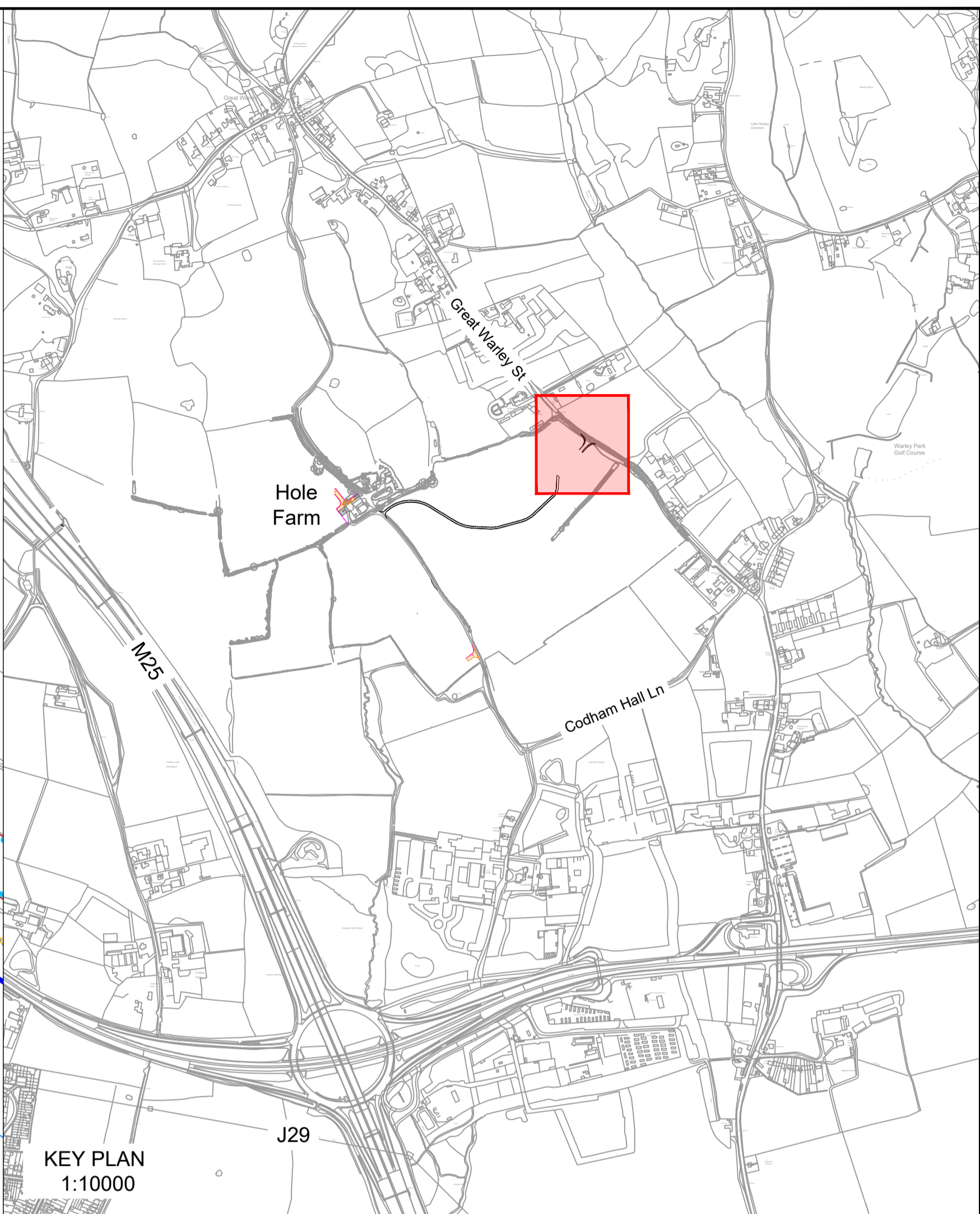
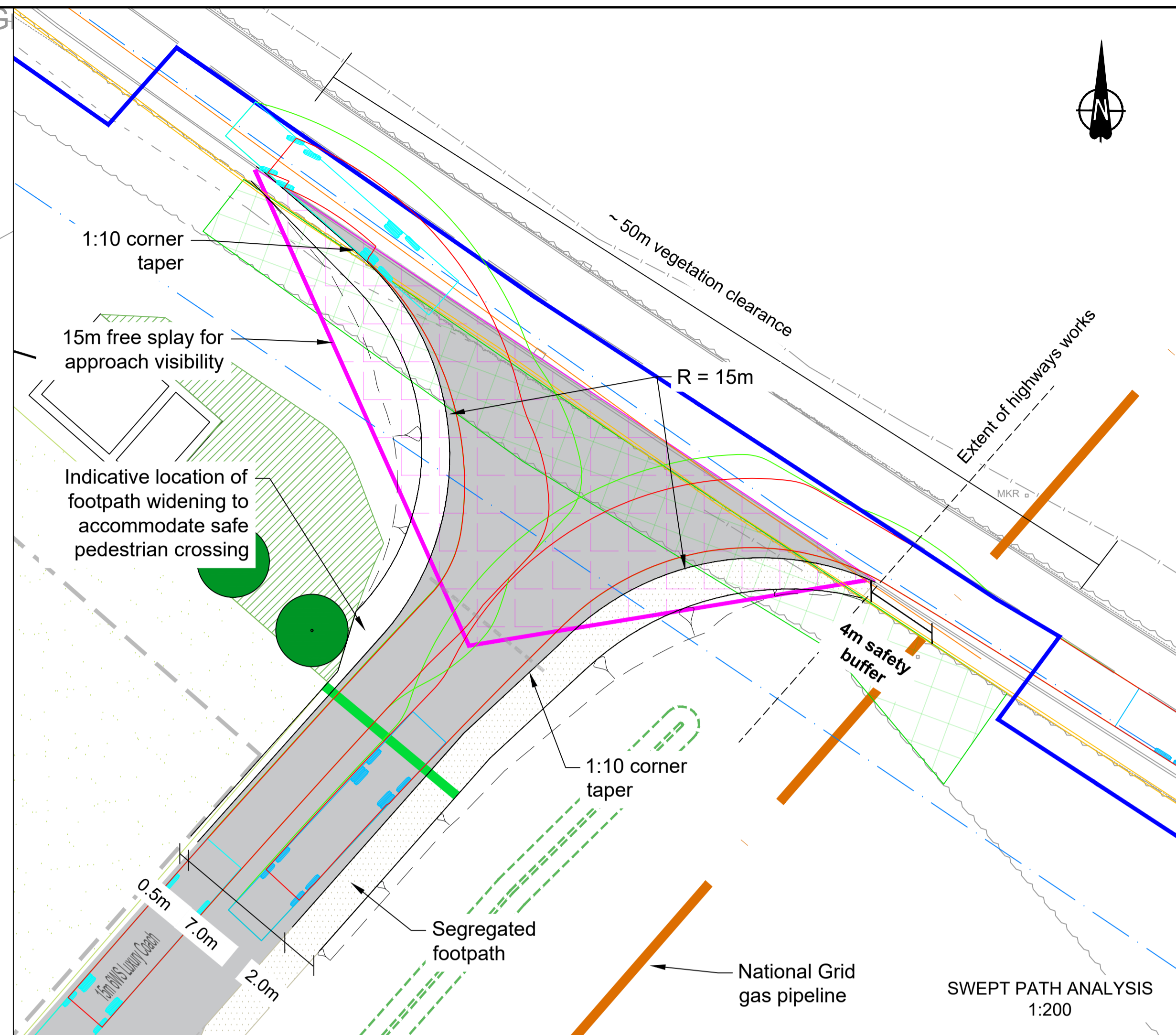
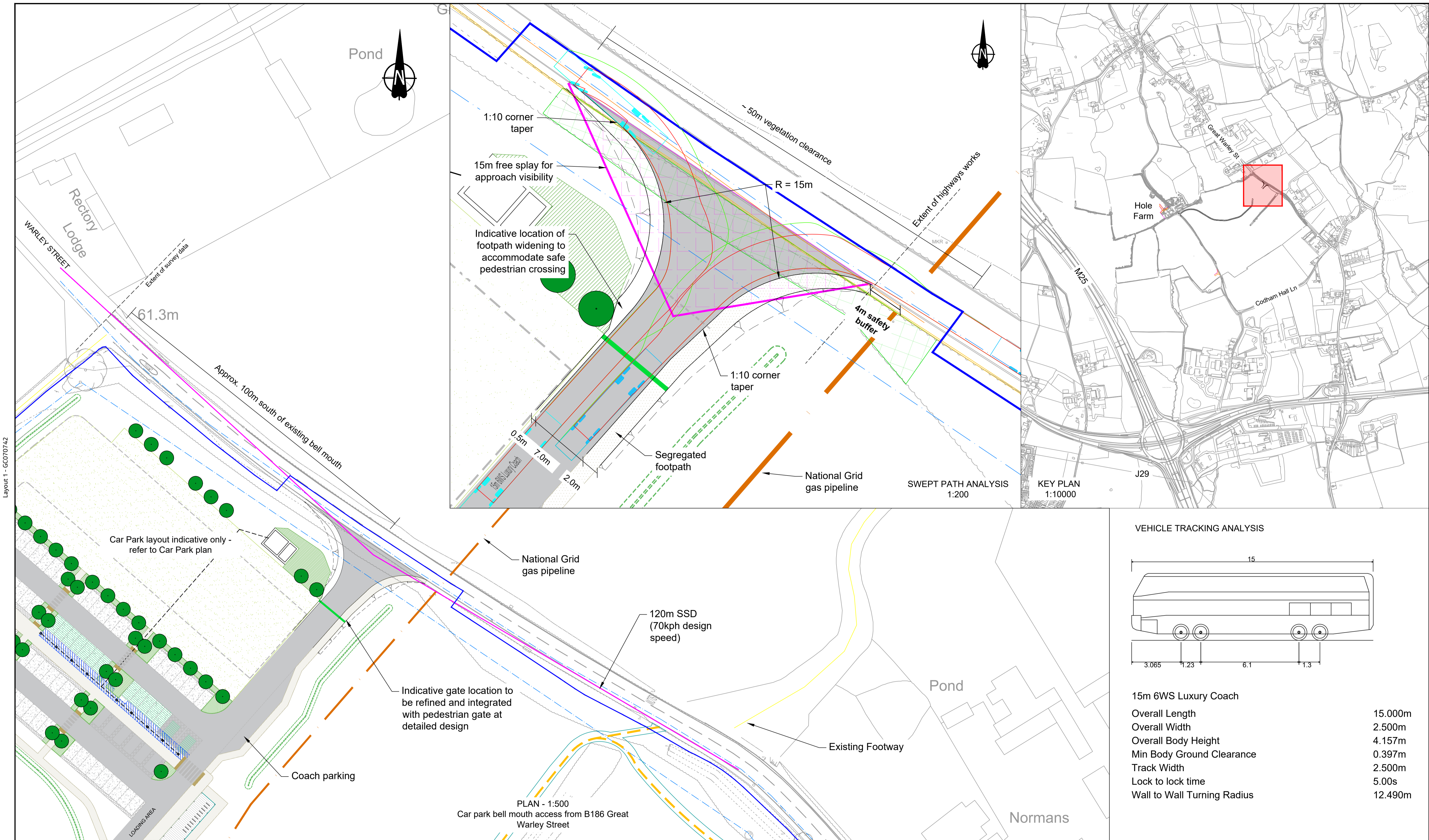
Figure 5: Extract of Master Plan

3 Outputs

The expected output in response to this Road Safety Audit Brief is a **RSA stage 1 report** with evaluation of the proposal and recommendations to improve safety.

4 Supporting information

All the relevant supporting information with regards travels, traffic and ATC are reported in the Transport Statement, attached in Appendix C.



VEHICLE TRACKING ANALYSIS

Overall Length	15.000m
Overall Width	2.500m
Overall Body Height	4.157m
Min Body Ground Clearance	0.397m
Track Width	2.500m
Lock to lock time	5.00s
Wall to Wall Turning Radius	12.490m

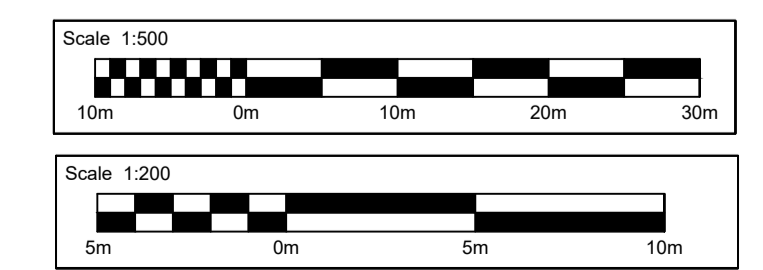
Layout 1 - GC070742

KEY

	Topo Survey		Forward tyres pathway
	Survey_Service underground gas		Forward overhang pathway
	Survey_Service water pipeline		Proposed access
	Survey_Electrical		Proposed indicative gate
	Survey_Telecom		Proposed indicative unsurfaced route
	Existing Footway		Visibility splay
	Planning Application boundary		Required vegetation clearance
			Low quality BS 5837 Category U hedge

NOTES

- Drawing to be printed in colors.
- Do not to scale from this drawing.
- Car park and kiosk layout shown is indicative only. For detailed surfacing refer to architectural plans.
- Stopping sight distance assessed based on CD123 cl. 3.2 and 3.4.
- Engagement with Statutory Undertakers and additional surveys to be undertake at detailed design.
- For details on vegetation refer to Arboricultural Assessment report.



R02	March 2023	Updated following IDR	GC			
R01	Dec 2022	First issue	GC	BB		BB
Rev	Rev. Date	Purpose of revision	Orig	Check'd	Rev'd	Apprv'd

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Client: FORESTRY ENGLAND

Project: HOLE FARM COMMUNITY WOODLAND

Drawing title: **Highways Car park bell mouth**

Drawing status: **Fit for information** Suitability: **S2**

Scale: @ A1 DO NOT SCALE

Jacobs No. J***** Rev

Client No. R02

Drawing number: **Hole-Farm_Highways.003.2**

APPENDIX B



Surfaced path Type A = 3.5m width prime aggregate with a wearing course of tar and chip, grey granite finish, design and specification suitable all abilities access

Surfaced path Type B = 3m width tarmac with coloured surface dressing of natural angled stone chip, design and specification suitable for cycle, horse, delivery and maintenance vehicle access.

Surfaced path Type C = 3m width unsealed prime aggregate, with compacted 6mm to dust

grey granite angled chip, design and specification suitable for cycle, horse, and maintenance vehicle access.

Surfaced path Type D = 3m width prime aggregate with a wearing course of tar and chip, grey granite finish, design and specification suitable for Pedestrian access.

Surfaced path Type E = 3m width tarmac with grey granite surface dressing, design and specification suitable all abilities access and timber haulage.

Key

- Existing Woodland
- Existing Wet Area/Pond
- Proposed Building
- Proposed Tree Planting
- Proposed Shrub Planting
- Proposed Natural Regeneration
- Proposed Pond

Pathways Material

- Resin Bonded Type A
- Coloured Aggregate Tarmac Type B
- Unsealed Aggregate Type C
- Unsealed Aggregate Type D
- Grey Aggregate Tarmac Type E
- Grass Track
- Other (refer to detail area drawing)



Pathways Design Plan

Scale: 1:7,500 @ A3
 Site: Hole Farm
 Drawn by: SS
 Date: 31 March 2023