

RIVERDALE

PROPOSED DEVELOPMENT, LAND AT MERCER ROAD, HORSHAM

DESIGN AUDIT

8TH SEPTEMBER 2025

1.0 Introduction

- 1.1 This design audit has been prepared in relation to a proposed residential-led development on land at Mercer Road, Horsham, West Sussex.
- 1.2 It is proposed that the existing A264 / Langhurst Wood Road left-in-left-out priority-controlled junction will be upgraded to a signal-controlled junction, allowing for all movements except the right-turn out of Langhurst Wood Road. The upgraded junction will incorporate signal-controlled pedestrian crossings over the A264.
- 1.3 This will be an interim arrangement until the implementation of the North of Horsham development's western A264 roundabout and the associated road infrastructure which includes the stopping-up of the southern end of Langhurst Wood Road.
- 1.4 This Design Audit has been undertaken at the request of the Local Highway Authority, West Sussex County Council Highways.
- 1.5 The Design audit has been undertaken against nationally recognised design standards in the preparation of highway schemes, document 'CD123, Geometric design of at-grade priority and signal-controlled junctions', which is contained within the Design Manual for Roads and Bridges (DMRB), published by His Majesty's Stationary Office.
- 1.6 The DMRB is the national reference document for the preparation of highway related schemes.
- 1.7 Each document identifies design requirements, and are broadly identified as being mandatory requirements, and guidance or advice.
- 1.8 This Design Audit considers the principal mandatory requirements for the provision of signal-controlled junctions, where mandatory sections cannot be achieved, typically departures from standard are required to be applied for each non-compliance and are subject to review by the Highway Authority and Department for Transport.
- 1.9 This document has used a Red, Amber, Green (RAG) assessment process to identify compliance or otherwise.

2.0 Design Audit

- 2.1 The A264 is a dual-carriageway road with a posted speed limit of 70mph; DMRB design speed of 120 kph.
- 2.2 The proposal is to replace the existing A264 / Langhurst Wood Road left-in-left-out priority-controlled junction with a signal-controlled junction.
- 2.3 The proposed junction will allow all movements except the right-turn out of Langhurst Wood Road. The proposed junction will incorporate signal-controlled pedestrian crossings over the A264.

2.4 The proposed junction arrangements are shown on drawings 17085 – 011, 17085 – 013, 17085 – 014, and 17085 – TR004 at Appendix 1.

2.5

2	Junction Selection	
2.27	Where the 85 th percentile speed on the approach roads is greater than or equal to 104 kph (65 mph), a signal-controlled junction shall not be provided.	<p>The speed limit on the A264 is 70mph, and the 85th percentile speeds have been recorded at between 69mph and 70mph.</p> <p>A reduction in traffic speeds is required.</p>

3	Visibility	
	Section not applicable to signal-controlled junctions	Junction inter-visibility and vision to signal heads are achievable see section 7.2, 7.3, and 7.4 below

4	Geometric design of direct accesses	
	Not applicable to signal-controlled junctions	

5	Geometric design of priority junctions	
	Not applicable to signal-controlled junctions	

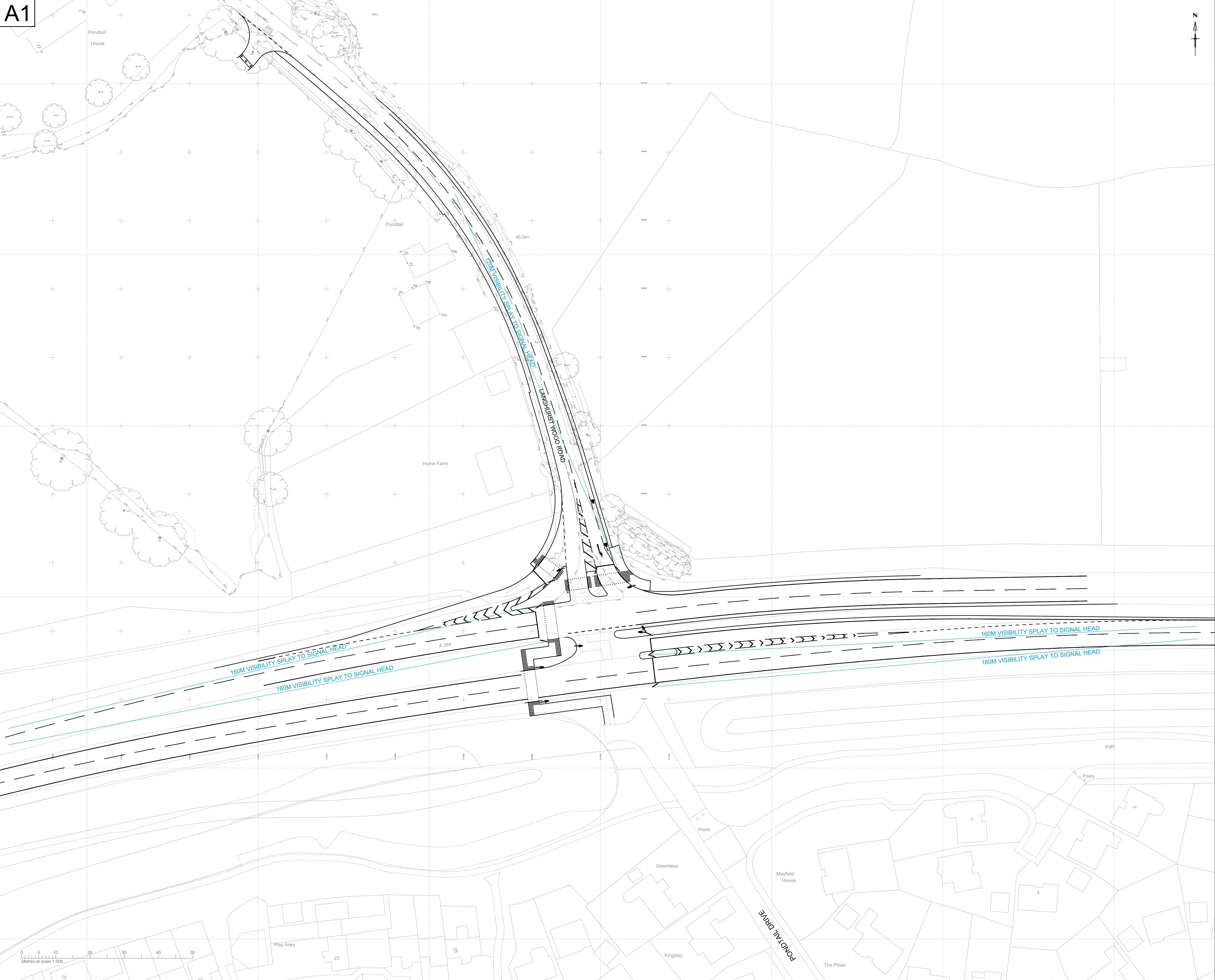
6	Geometric design of major road central treatments	
	Not applicable to signal-controlled junctions	

7	Geometric design of signal-controlled junctions	
7.1	At new signal controlled junctions, the minimum intersection angle of the roads shall satisfy one of the following: 90 degrees; or a minimum of 70 degrees.	Intersection angle is approximately 90 degrees.
7.2	Each traffic lane shall have clear visibility of at least one primary signal associated with its particular movement, from a distance equivalent to the desirable minimum SSD of the approach road.	<p>The proposed signal junction requires a reduction of the speed limit on the A264. For a design speed of 85kph (50 mph speed limit), clear visibility is achievable in both directions at the SSD of 160m.</p> <p>Visibility on the Langhurst Wood Road approach is achievable at the SSD of 120m for the 40mph speed limit.</p>


		This is shown on drawing 17085-014 appended to this report.
7.3	Visibility to the primary signal shall be in accordance with the CD 109 [Ref 5.N] visibility envelope, but with the high object height amended to incorporate the signal head where this exceeds 2 metres, as indicated in Figure 7.3.	The appropriate visibility envelope is achievable on all approaches to the junction.
7.4	An intervisibility zone shall be provided that incorporates an area that extends across the full carriageway width of each arm from a distance of 2.5 metres back from each stop line, as illustrated in Figure 7.4.	The appropriate intervisibility zone is achievable. This is shown on drawing 17085-013 appended to this report.
7.5	Where an advance stop-line (ASL) is provided, the intervisibility zone shall be measured from a point 2.5 m behind the cyclists' stop-line.	Not applicable.
7.6	No substantial fixed obstructions shall be located within the intervisibility zone of new junctions.	No substantial fixed obstructions are proposed to be located within the intervisibility zone of the junction.
7.7	At new junctions, the minimum width of straight ahead lanes shall be 3.0 metres.	The straight ahead lanes are wider than 3.0m.
7.8	At existing junctions, the minimum width of straight ahead lanes shall satisfy one of the following: 3.0 metres; or, 2.5 metres where the 85th percentile approach speed exceeds 56 kph (35 mph) and/or it is necessary to make provision for HGVs; or, 2.25 metres where the 85th percentile approach speed does not exceed 56 kph (35 mph) and it is not necessary to make provision for HGVs.	Not applicable.
7.9	Dedicated lanes for left or right turning traffic shall be a minimum of 3.0 metres wide.	The dedicated lanes for turning traffic are wider than 3.0m.
7.10	Dedicated lanes for left-or right-turning traffic shall be developed with tapers of 1 in 5, as illustrated in Figure 7.10.	The dedicated lane for left-turning traffic has a taper of 1 in 7.5. The lane for right-turning traffic has a taper of approximately 1 in 20.4.
7.11	The storage length shall be measured from the stop line to the furthest point upstream where the total number of entry lanes are at full width, as illustrated in Figure 7.10.2.	The storage length is measured from the stop line to the furthest point upstream where the total number of entry lanes are at full width. For the proposed right-turn lane, LinSig modelling shows that the mean maximum queue length is accommodated within the storage length. For the proposed left-turn lane, the LinSig modelling shows that


		the mean maximum queue length slightly exceeds the storage length, but the left-turn traffic movement from the A264 to Langhurst Wood Road will be under the same control as the straight-ahead traffic, so there will be no instances when the left-turn lane is on a red signal while the ahead-movement is on green.
7.12	Where it is necessary to reduce the numbers of lanes on an exit, this shall be carried out on either the nearside or the offside depending on the prevailing traffic flows on the exit arm.	Not applicable.
7.13	The design of a signal-controlled junction shall allow for the swept turning paths of the design vehicle where provision is to be made for large goods vehicles.	The junction has been designed to accommodate swept turning path of a 16.5m articulated truck, as demonstrated in drawing 17085 - TR004 appended to this report.
7.14	Where provision is to be made for large goods vehicles, the values for corner radii and associated tapers shall be the same as for a priority junction (refer to Section 5).	The radii and tapers have been designed to accommodate the swept path tracking of large goods vehicles as demonstrated in drawing 17085 - TR004 appended to this report.
7.15	The nosing of central reserves and pedestrian refuges shall be set back a minimum distance of 1.5 metres from the edge of carriageway of the intersecting road.	The nosing of the central reserve is set back a minimum distance of 1.5m from the edge of carriageway of the intersecting road.
7.16	A minimum clearance of 450 mm shall be provided between the edge of carriageway and any street furniture.	A minimum clearance of 450mm will be provided on Langhurst Wood Road, and a clearance of 600mm will be provided on other areas between the edge of carriageway and any street furniture.
7.17	Traffic islands shall be provided to separate uncontrolled traffic from controlled traffic where left-turn slip lanes are provided.	Not applicable.
7.18	On roads with a design speed of 85 kph or higher, right turning lane(s) shall be separately signalled and segregated from the adjacent ahead-only lane(s) by a traffic island.	The right turning lane is separately signalled and segregated from the adjacent ahead-only lanes by a traffic island.
7.19	The controller cabinet shall not be situated such that it causes either physical or visual obstruction to road users and pedestrians.	The controller cabinet will not be situated such that it causes either physical or visual obstruction to road users and pedestrians.

Appendix 1 – Proposed Junction Drawings



KEY:

 PRIMARY SIGNAL

 SECONDARY SIGNAL

rev.	amendment	by	date



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client

RIVERDALE

project

LAND AT MERCER ROAD,
HORSHAM

title

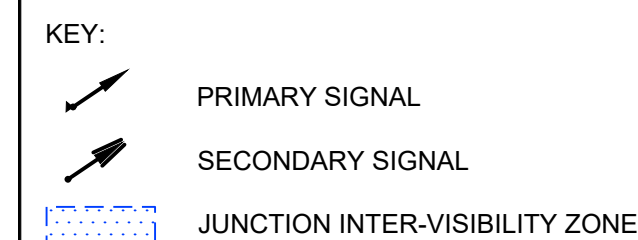
VISIBILITY SPLAYS TO
TRAFFIC SIGNALS

scale	drawn by	checked by
1:500	C.P.	G.O.J

date	status
SEPTEMBER 2025	PLANNING

drawing number	rev.
17085 - 014	

A1



INSET 1
SCALE 1:250

INSE

INCL 1

rev.	amendment	by	date
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client
RIVERDALE

project
LAND AT MERCER ROAD,
HORSHAM

title	PROPOSED DIMENSIONS AND TRAFFIC SIGNALS
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scale 1:250	drawn by C.P	checked by G.O.J
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date	status
SEPTEMBER 2025	PLANNING

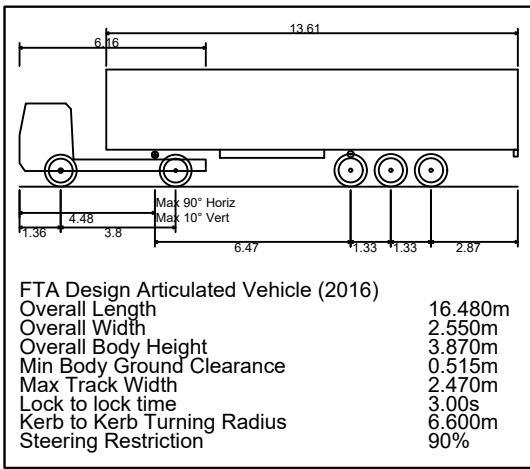
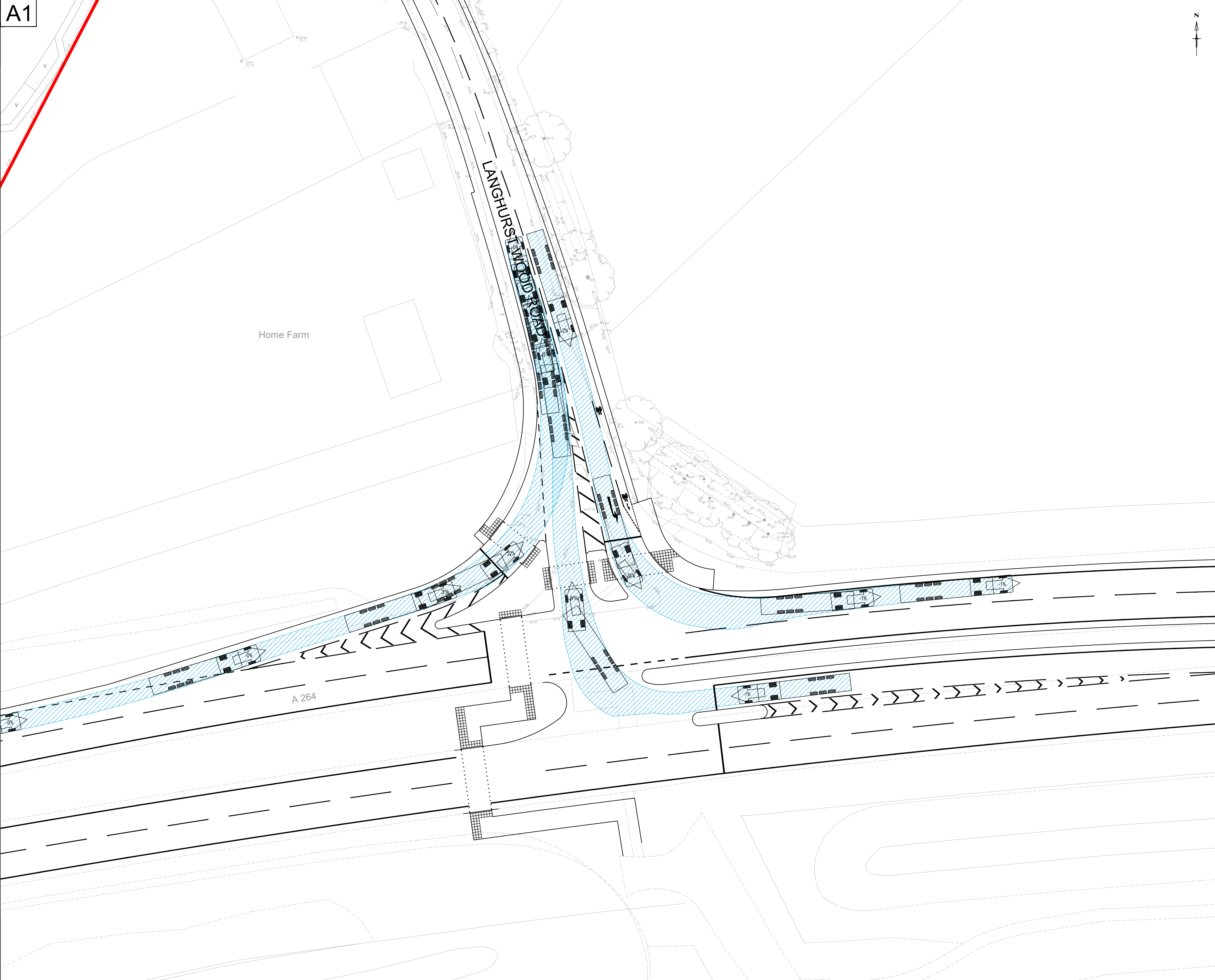
drawing number
17085 - 013

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client RIVERDALE		
project LAND AT MERCER ROAD, HORSHAM		
title PROPOSED OFF-SITE ACCES STRATEGY SWEEP PATH ANALYSIS FTA DESIGN ARTICULATED VEHICLE		
scale 1:250	drawn by T.A.S	checked by T.B
date SEPTEMBER 2025		status PLANNING
drawing number 17085 - TR004		rev.

