

# transport assessment

Land East of High Road, High  
Cross, Hertfordshire

Transport Assessment

November 2023

For M Scott Properties Limited

Ref: CCE/U321/TA-01

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## Document Review Sheet

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### Document status

Issue	Date	Author	Checked
01	November 2023 (Draft)	EM/DCS	-
02	November 2023 (For Planning)	EM/DCS	

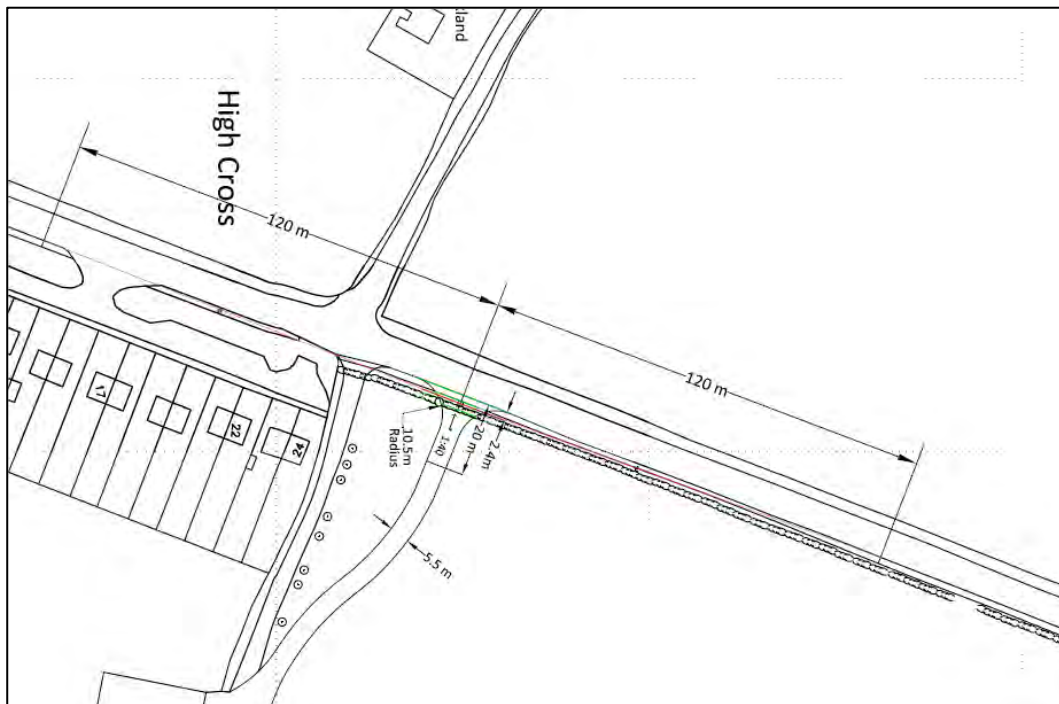
## 1.0 INTRODUCTION

### *Introduction*

- 1.1 Cannon Consulting Engineers (CCE) are appointed by M Scott Properties Limited to provide highways and transportation advice in relation to proposals for an outline application for residential development on Land East of High Road, High Cross, Hertfordshire. The location of the site is presented on **Figure 1**.
- 1.2 This Transport Assessment (TA) forms part of the supporting documentation for an outline planning application for 95 residential dwellings, including the allocation of a parcel of land for the primary school, allotments, landscaping, cemetery extension and associated infrastructure. A Concept Plan is contained in **Appendix A**.

### *Historic Planning Background*

- 1.3 In 2016 Sutes Farm, received planning approval for the erection of an agricultural building (grain store), and relocation of access road (planning reference 3\_16\_0246), to provide betterment over the existing access track. The proposed relocated and improved access are detailed on drawing 201307 DWG 006 and included at **Appendix B**. The consented access comprised the provision of a 5.5m wide priority controlled T-junction with 10.5m corner radii. The consented access demonstrated that visibility splays of 2.4m x 120m were acceptable and achievable in both directions from the access.



Extract of Consented Sutes Farm Access: Drawing 201307 DWG 006

- 1.4 The existing farm access was to be closed off to vehicular traffic, with pedestrian infrastructure reinstated.



**Sutes Farm: Existing Track Access with High Street**

- 1.5 The permission has since expired; however, the principle of a new access sets a precedent, and this principle forms the access strategy for the proposed development.
- 1.6 In preparing the TA reference has been made to, National Planning Policy Guidance, Local Plan Policy and Hertfordshire's design guide -Roads in Hertfordshire: Highway Design Guide 3rd Edition.

#### *Report Structure*

- 1.7 Following the above summary, this TA sets out the methodology and process undertaken to establish the potential highways and transport impacts as a result of the development proposals at Land East of High Road located in High Cross, Hertfordshire.
- 1.8 **Section 2** of this report describes the existing conditions at the application site in more detail, including details of the existing highway conditions, existing sustainable transport links, and the road safety considerations in the vicinity of the proposed development.
- 1.9 **Section 3** presents a summary of the relevant transport policy at national and local levels which apply to the application site and the development proposals.
- 1.10 **Section 4** describes the development proposals in more detail, including the scale and layout of the development, the proposed site access arrangement, proposed connections to sustainable transport links and the potential improvements to the existing infrastructure.
- 1.11 **Section 5** provides details of the methodology used to ascertain the level of trip generation and distribution onto the local highway network associated with the development proposals, the background traffic details and growth factors used to establish a future assessment in order to assess the potential traffic impact of the development proposals on the surrounding highway network.

- 1.12 **Section 6** provides a summary of the capacity assessments undertaken in relation to the key junctions on the local highway network.
- 1.13 **Section 7** presents the summary and the conclusions of this TA.



## 2.0 EXISTING CONDITIONS

### The Site and Existing Conditions

- 2.1 High Cross is a village located in the county of Hertfordshire and is situated approximately 5km north of the town of Ware and 8km north east of Hertford. The site lies within the planning district East Hertfordshire. East Hertfordshire District Council, are the planning authority and Hertfordshire County Council (HCC) as the local highway authority.
- 2.2 The site which is approximately 7.75 hectares of agricultural land is located towards the northern boundary of High Cross. Further agricultural land lies to the north and east. The site is bordered by residential areas to the south and west with The Parish Church of St John's and Puller Memorial CE primary school bordering to the south western corner of the site.
- 2.3 The location of the site is shown in **Figure 1**.



### Site Location

- 2.4 The following paragraphs set out the local road network surrounding the site.

#### *Local Network*

- 2.5 Ermine Street runs along the western boundary of the site. Heading north for approximately 4km Ermine Street joins the A10 and A120 at a roundabout junction. Ermine Street is subject to a 50mph speed limit, which transitions to a 30mph speed limit on entry to High Cross, approximately 60m north of the Sutes Farm access junction with Pest House Lane. Footways are provided along the eastern side of Ermine Street, which continue north and south into High Cross, where street lighting is also provided.



- 2.6 Where Ermine Street meets the junction with Pest House Lane, Ermine Street becomes High Road, which continues south through the village. The speed limit through High Cross is 30mph.



**Ermine Street: Speed Limit Transition on Entry to High Cross**

- 2.7 Pest House Lane is located directly opposite the existing access to Sutes Farm. It is derestricted. Pest House Lane is a single track road that meets Ermine Street at a priority junction.



**View of Pest House Lane**



- 2.8 High Road is a relatively straight road with a system of priority-controlled buildout features, the first of which is located approximately 200 metres to the south of the proposed access. There is a further 2 priority-controlled buildouts through the village.



**Example of Priority Working on High Road**

- 2.9 Approximately 80m to the south of the access to Sutes Farm, is a residential access road (referred to as High Road), which provides a cul-de-sac and serves circa 20 dwellings. Along High Road, in the vicinity of Pest House Lane, footway provision is provided on both sides of the carriageway. The footway provision on the eastern side of High Road continues up to the southbound bus stop adjacent to the residential access cul-de-sac.



**Example of pedestrian footways on High Road**



- 2.10 Where the eastern footway ceases on High Road, the western footway continues south. Pedestrian access is also available from the High Road residential cul-de-sac, which continues into the village and provides access to village facilities.



**Residential Cul-de-Sac footway connection onto High Road (Avoiding Priority Working)**

- 2.11 High Road continues south of the village passing through the villages of Wadesmill and Thundridge where it becomes Cambridge Road.

### *Wider Network*

- 2.12 The A120 meets Ermine Street and the A10 at a roundabout Junction to the north of High Cross and provides a connection to Bishops Stortford and the M11.
- 2.13 The A10 bypasses High Cross to the east connecting Cambridge with London. Traffic from High Cross travelling north joins the A10 at a roundabout junction to the north. Traffic to and from the south will use the slip road junctions from the A1170.
- 2.14 The A1170 connects Thundridge to the town of Ware to the south providing a connection to the closest railway station to High Cross.

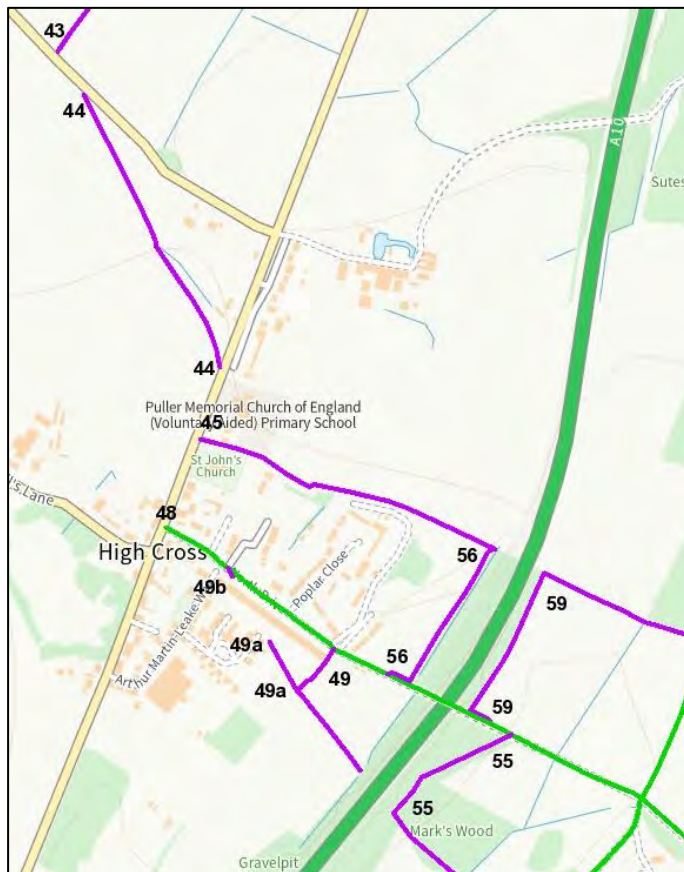
### **Non-Car Modes**

- 2.15 Access to the site by modes other than the car include the following:
- Walking – pedestrian networks;
  - Cycling – cycle route networks; and
  - Public Transport – bus, and rail services.

### **Pedestrian Access**

- 2.16 The site is located to the north of a well-established residential location in High Cross and benefits from a good provision of pedestrian facilities that provide access to public transport, education and village facilities to the south.
- 2.17 In addition, the site is located to a network of PRoW. The closest is PRoW, FP45 which is located within the site along the southern boundary. This FP, will be retained and improved as part of the development proposals. This provides footway access from the site to High Road, running parallel with St John’s Church and Puller Memorial Church of England Primary School. The FP continues eastwards, forming FP 56, which then joins a bridleway BR48, at North Drive. The bridleway at North Drive, leads onto High Road.





**Extract of PRoW Network**



**PRoW FP 45: Connection from High Road**

- 2.18 Further south into the village at the junction of High Road and Marshall's Lane is a traffic signal controlled crossing on High Road immediately to the south of the junction.



**Signal Crossing; High Road**

- 2.19 Reference to the Chartered Institution of Highways and Transportation (CIHT) Guidelines for Providing for Journeys on Foot (2000) considers suggested acceptable walking distances for various journey purposes such as commuting, walking to school and recreational, these are summarised in **Table 2.1**.

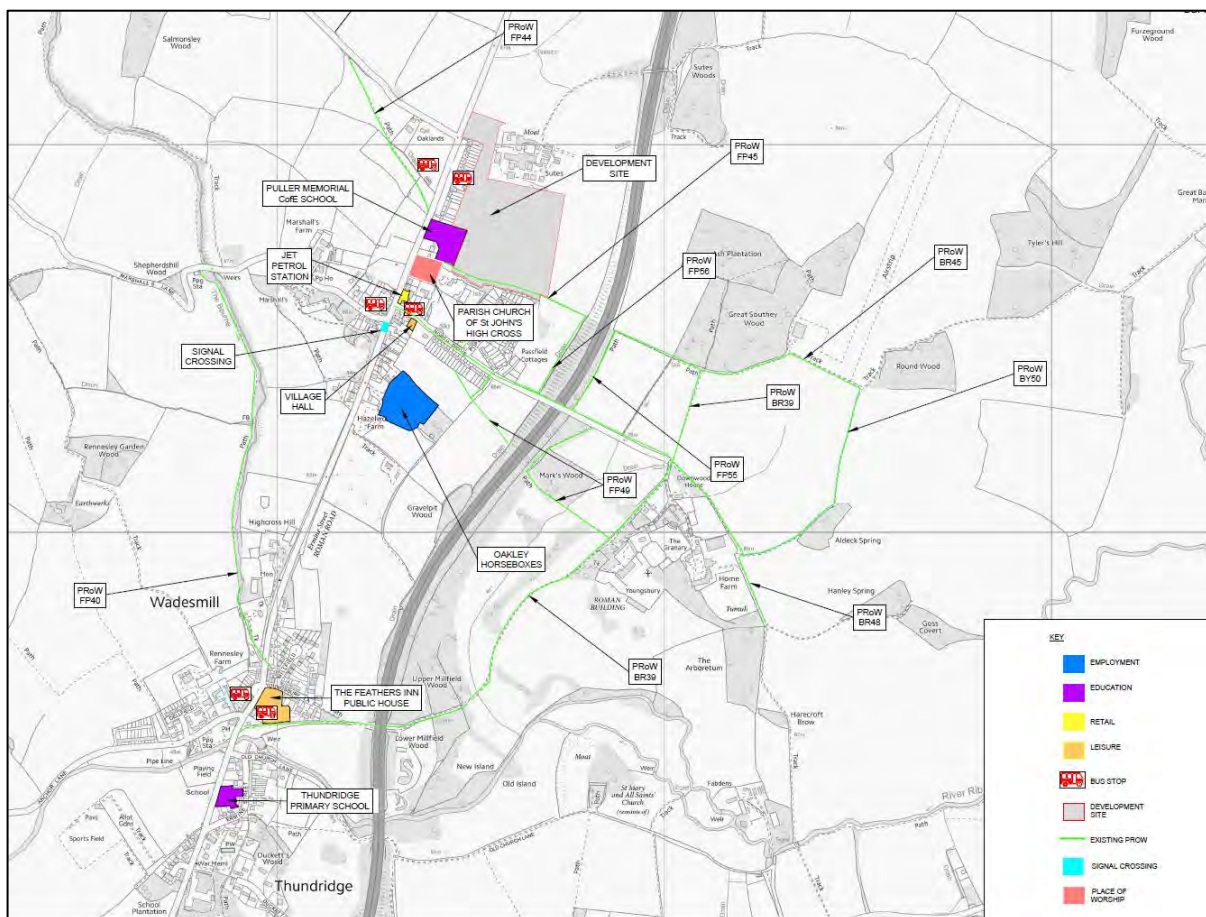
CIHT Guidelines	Distance		Walk Time	
	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys
<b>Desirable</b>	500m	400m	6.25 mins	5 mins
<b>Acceptable</b>	1,000m	800m	12.5 mins	10 mins
<b>Considered</b>	2,000m	1,200m	25 mins	15 mins

**Table 2.1: CIHT guidance 'Providing for Journeys on Foot'**

- 2.20 Documents such as Manual for Streets, CIHT Planning for Walking, reference that walking neighbourhoods are typically characterised as having a range of facilities within catchments of 800m (10 minute). With bus stop accessibility for residential areas to be typically within 400m. The development site meets this criteria.



2.21 **Figure 2** shows the locations of key facilities in relation to the site.



**Figure 2: Key Facilities**

2.22 **Tables 2.2** provide a summary catchment and walk times to employment, education, retail, leisure and public transport facilities within the vicinity of the proposed site.

Land East of Ermine Street Key Destination & Services	Maximum Distance from Site Centre	Typical Walk Time
Bus Stops (Cambridge Cottages)	400m	5 mins
Primary School	400m	5 mins
Jet Petrol Station and Spa	700m	9 mins
Village Hall	800m	10 mins
Oakley Horse Boxes	1,100m	14 mins
The Feathers Inn (Public House)	1,600m	20 mins
Thundridge Village Stores	2,000m	25 mins

**Table 2.2: Summary distances and typical walking journey times to key local destinations & services.**

2.23 Shorter walking distances between the site and village facilities can be achieved via the PRoW FP45.

2.24 **Tables 2.2** demonstrates that the site is located to a variety of uses' including key facilities, such as education and retail which serve a proportion of 'everyday short journey purposes' all of which are within suitable walking distance of facilities and will benefit residents and can be



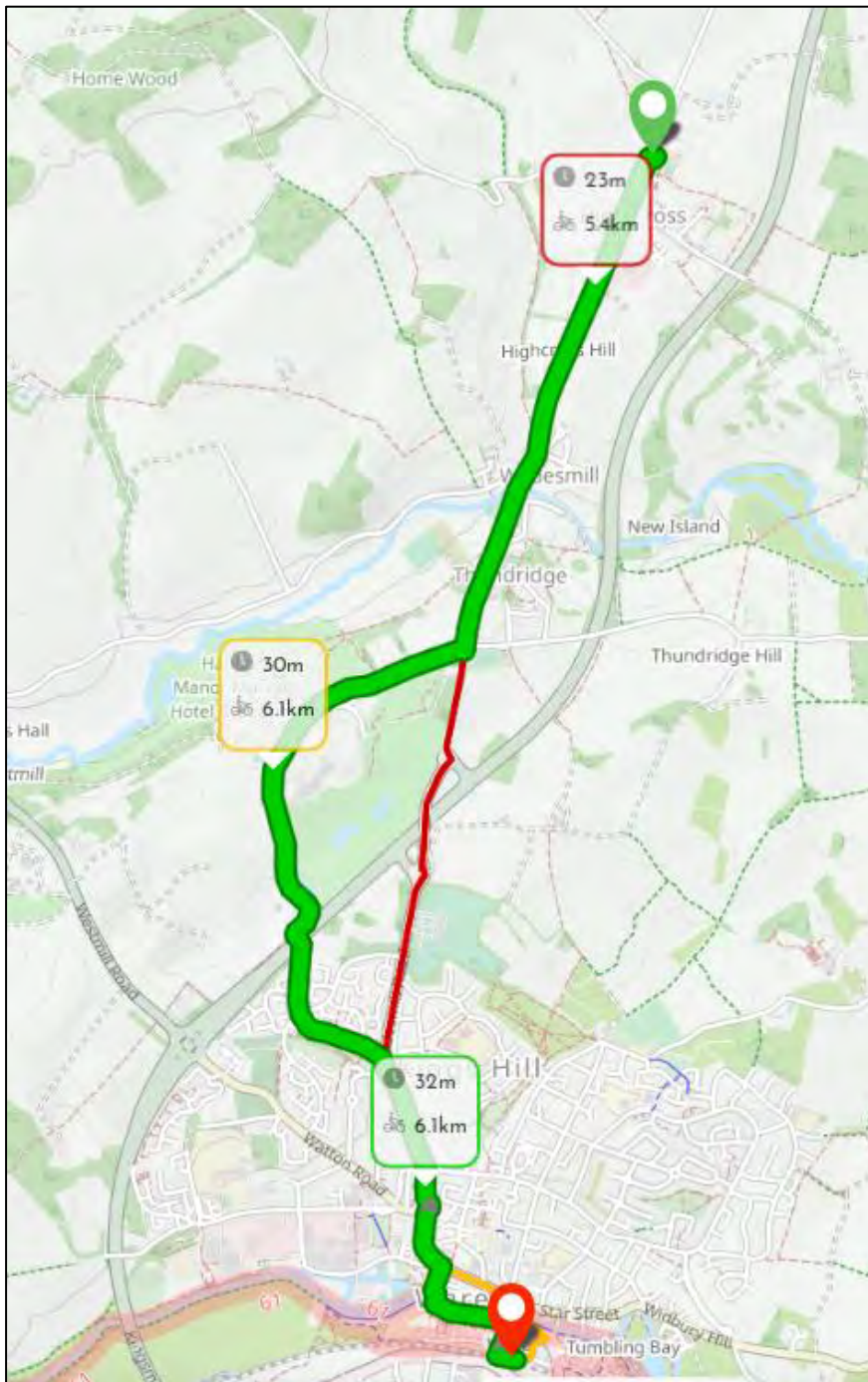
described as a walkable neighbourhood. All amenities are within 2km of the site in accordance with the CIHT guidance for providing for journeys on foot as summarised in paragraph 2.21.

- 2.25 Accordingly, there exists the opportunity for short distance trips to be undertaken by sustainable modes which will be promoted through the Framework Travel Plan, which has been prepared separately for the planning application.
- 2.26 This highlights that the sites' proximity to these local facilities lends itself to sustainable travel and will assist in reducing the reliance on car use for local journeys.

### **Cycle Access**

- 2.27 CIHT Planning for Cycling, provides an overview on cycle activity and distance travelled, setting out that the majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, cycling is a potential mode for many of these trips (DfT, 2014a). Electric bicycles extend the range that can be cycled comfortably, and combined; cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips
- 2.28 With the exception of bridleway 48 along North Drive, there are no formal cycle routes within High Cross with all routes being undertaken on road. The Ermine Street/High Road is traffic calmed through the village itself which could help encourage cycle journeys.
- 2.29 Ware is located within 5km of High Cross, and Ware Station is within a 23m cycle ride. These distances (as summarised in the CIHT Planning for Cycling) are conducive cycling to be a realistic travel choice to access wider services in Ware. Reference is made to cyclestreets.net, which provides details of the available routes to access services by bike, and provides a comparison between the fastest, quietest and balanced routing available.

2.30 There are two identified routes, the fastest and direct route (23 min) is via the A1170, and this route includes a number of sections where the speed limit is 40mph. However, the second route, although slightly less direct, the route (30 min), deviates away from the A1170 at Thundridge, and comprises a mix of lanes, bridleways, and residential roads, re-joining the A1170 into off-street cycle infrastructure, and local roads subject to 30mph speed limits. Once into Ware there are a range of quiet routes to use to access Town Centre facilities, including alongside the Canal and NCR 61 to the train station.



Cycle Streets: Routes to Ware From High Cross

### Public Transport - Bus

- 2.31 The nearest bus stops are located on High Road (ID: Cambridge Cottages), adjacent to the proposed site and within 400m of the centre of the proposed development. The stop is serviced by route 331 which is operated by Arriva. Service 331 provides a connections to Ware and Hertford Train Station.
- 2.32 A summary of the bus frequencies is summarised below.

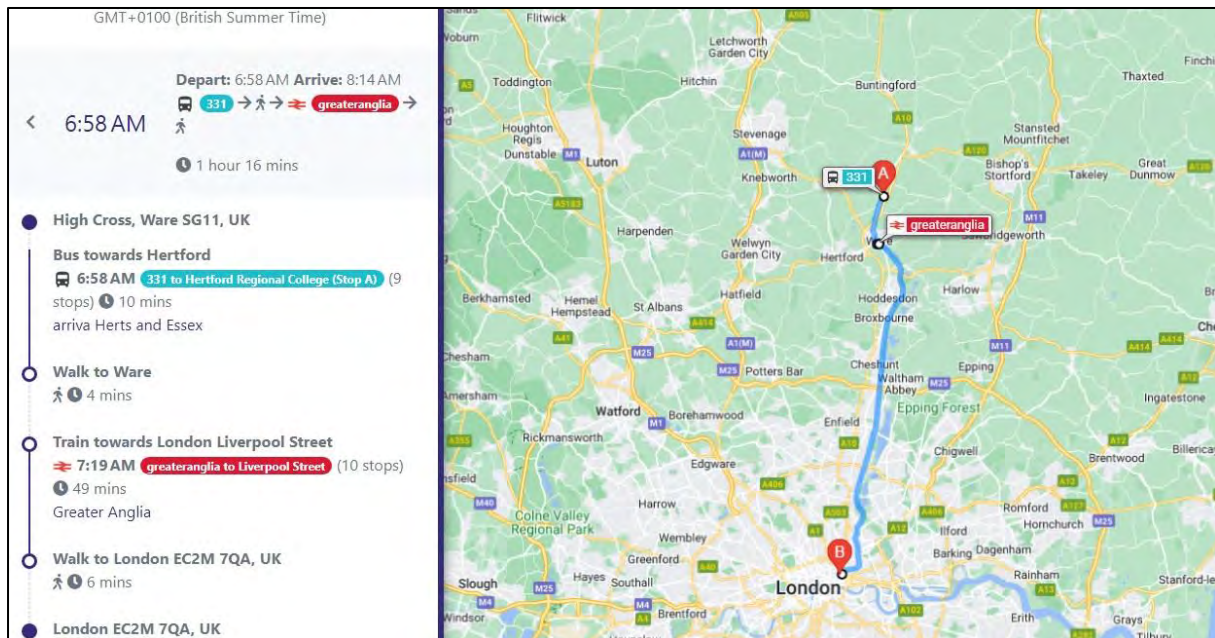
Service	Operator	Route/Direction	Frequency				Journey Times	
			Mon-Fri	Mon – Fri off-peak	First	Last	Destination	Time
331	Arriva	Hertford -Ware Buntingford	Hourly	Hourly	07:52	19:11	Puckeridge	12min
							Buntingford	25min
		Buntingford – Ware - Hertford	Hourly	Hourly	06:57	18:25	Ware (Hertford Reginal College Stop A)	11min
							Hertford	20min

**Table 2.3: Summary of local bus services.**

- 2.33 Bus services provide good accessibility to the towns of Ware (less than 15 minutes) and Hertford (circa 20 minutes), where a full range of retail, employment education and public transport accessibility is available.

### Public Transport - Rail

- 2.34 The nearest train station is located in Ware, approximately 3.3miles to the south of High Cross. Ware Train Station provides a 30 minute service to London Liverpool Street and Hertford. The journey from Ware station to London Liverpool Street is 47 minutes.
- 2.35 Bus Service 331 stops at Hertford regional College (Stop D) and arrives 18 minutes prior to the departure of the train. This allows suitable transition time between modes which makes bus and train travel a realistic choice. From High Cross it is estimated to take approximately 1 hour and 20 minutes using bus and rail services to travel to London Liverpool Street.
- 2.36 Below is an example Journey Plan between High Cross and London Liverpool Street to arrive before 08:30. Total journey time is less than 1 hr 20 minutes.



### Accessibility Summary

- 2.37 The site is within a walkable neighbourhood, with access to a range of everyday journey purposes, it is well located in terms of public transport with bus stops to regular bus services located within 400m walking distance from the centre of the site. These provide frequent connections to the larger urban settlements of Ware, and Hertford, where residents of High Cross, can access a wide range of additional services and facilities including education, retail, employment and leisure. Furthermore, as well as using public transport, Ware is within a suitable cycle distance from the site.
- 2.38 The existing walking environment is street lit and permeable from the site, with access to existing PRoW, providing alternative quiet routes to education and other facilities within the village. The existing infrastructure provides the opportunity for walking in the local area

### Personal Injury Accident Review

- 2.39 CCE have obtained Personal Injury Collision (PIC) from Hertfordshire, for High Cross. The search covers a 5 year period between 1 April 2018-31 March 2023. A copy of the PIC data is included at **Appendix C**. In this period there has been one slight collision, involving a vehicle and a cyclist in the vicinity of the petrol filling station on High Road. There have been no recorded collisions in the vicinity of the site or site access.



**PIC Data HCC: 01.04.2018-31.03.2023**

- 2.40 Based on the accident recorded it not considered that the development proposals will have a detrimental impact on safety or specific types of accidents.

### 3.0 POLICY REVIEW

#### *Policy Overview*

3.1 This section of the report considers the transport policy background against which the planning application will be assessed. This includes National, Regional and Local Policy. The main policy documents setting the context within which the assessment will be undertaken are:

- National Planning Policy Framework (2023);
- Planning Practice Guidance (NPPG);
- East Hertfordshire District Council – East Herts District Plan (2018);
- East Hertfordshire District Council – Update Parking Standards
- East Hertfordshire District Council – Sustainability SPD
- HCC Local Transport Plan LTP4 – 2018.

#### **National Planning Policy Framework 2023**

3.2 The National Planning Policy Framework was revised on 5<sup>th</sup> September 2023 and sets out the government’s planning policies for England and how these are expected to be applied.

3.3 Section 2 sets out the overarching objectives to achieve sustainable development at paragraph 10 confirms states that *“so that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.”*

3.4 Paragraph 11 states that *“plans and decisions should apply a presumption in favour of sustainable development. “*

3.5 Paragraph 11 specifies that for **decision-taking** this means:

(c) approving development proposals that accord with an up to date development plan without delay; or

(d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date, granting permission unless:

- the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed; or
- any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.

3.6 Section 9 of NPPF refers to the promotion of sustainable transport.

3.7 Paragraph 104 of the 2021 NPPF states that *“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:*

*a) The potential impacts of development on the transport networks can be addressed;*



- b) *Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
  - c) *Opportunities to promote walking, cycling and public transport use are identified and pursued;*
  - d) *The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
  - e) *Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places.”*
- 3.8 Paragraph 105 states that “The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.”
- 3.9 Paragraph 108 states that “Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimising the density of development in city and town centres and other locations that are well served by public transport (in accordance with chapter 11 of the Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists.”
- 3.10 Paragraph 110 states that “In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:
- a) *Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
  - b) *Safe and suitable access to the site can be achieved for all users;*
  - c) *The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
  - d) *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.”*
- 3.11 Paragraph 111 states that “Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. “



- 3.12 Paragraph 112 states that “Within this context, applications for development should:
- a) *Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
  - b) *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
  - c) *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
  - d) *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
  - e) *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.”*
- 3.13 Paragraph 113 states that “All developments that generate significant amounts of movement should be required to provide a travel plan and should be supported by a transport statement or transport assessment so that the likely impacts of the proposals can be assessed.”

#### **National Planning Practice Guidance**

- 3.14 The National Planning Practice Guide (NPPG) aims to provide an accessible web-based source for all national planning guidance. In the section relating to Travel Plans, Transport Assessments and Statements, the NPPG defines Transport Assessments and Statements as documents which:
- “... are ways of assessing the potential transport impacts of developments (and they may propose mitigation measures to promote sustainable development. Where that mitigation relates to matters that can be addressed by management measures, the mitigation may inform the preparation of Travel Plans).”*
- 3.15 The NPPG also discusses the relationship between Transport Assessments and Travel Plans:
- “Transport Assessments and Transport Statements primarily focus on evaluating the potential transport impacts of a development proposal. (They may consider those impacts net of any reductions likely to arise from the implementation of a Travel Plan, though producing a Travel Plan is not always required). The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or “severe” impacts. Travel Plans can play an effective role in taking forward those mitigation measures which relate to on-going occupation and operation of the development.”*
- 3.16 The NPPG identifies key principles governing the production of these documents stating that they should be:
- *proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible;*

- *established at the earliest practicable possible stage of a development proposal;*
- *be tailored to particular local circumstances (other locally-determined factors and information beyond those which are set out in this guidance may need to be considered in these studies provided there is robust evidence for doing so locally); and*
- *be brought forward through collaborative ongoing working between the Local Planning Authority / Transport Authority, transport operators, Rail Network Operators, Highways Agency where there may be implications for the strategic road network and other relevant bodies. Engaging communities and local businesses in Travel Plans, Transport Assessments and Statements can be beneficial in positively supporting higher levels of walking and cycling (which in turn can encourage greater social inclusion, community cohesion and healthier communities).*

### **Local Policy**

3.17 Local policy is contained within the East Herts District Plan (adopted October 2018). Policies relating to highways and transport are discussed below.

#### **Policy TRA1 Sustainable Transport**

To achieve accessibility improvements and promotion of sustainable transport in the district, development the policy requires that development proposals should:

Be located in places which enable sustainable journeys to be made to key services and facilities;

Ensure that a range of sustainable transport options are available to occupants or users;

Ensure that site layouts prioritise the provision of modes of transport other than the car (particularly walking, cycling and, where appropriate passenger transport) which where feasible should provide easy and direct access to key services and facilities

Allow for the early implementation of sustainable travel infrastructure or initiatives that influence behaviour to enable green travel patterns to become established from the outset

Protect existing rights of way, cycling and equestrian routes.

#### **Policy TRA2 Safe and Suitable Highway Access Arrangements and Mitigation**

Development proposals should ensure that safe and suitable access can be achieved for all users. Site layouts, access proposals and any measures designed to mitigate trip generation produced by the development should be acceptable in highway safety terms, not result in any severe residual cumulative impact, and not have a significant detrimental effect on the character of the local environment.

#### **Policy TRA3 Vehicle Parking Provision**

Vehicle parking provision associated with development will be assessed on a site by site basis taking into account the adopted SPD' Vehicle Parking Provision at New Development'.

**East Hertfordshire District Council’s Updated Parking Standards**

3.18 East Hertfordshire District Council have provided an update to their parking standards. It identifies the following maximum parking provision for new residential developments.

Use Class	Description	Car Parking Standards (Spaces per dwelling)	Minimum Cycle Parking Standards
C3 Residential	i) 1 bedroom dwelling/studies	1.5*	1 l/t space per unit if no garage or shed is provided
	ii) 2 bedroom dwellings	2.0	
	iii) 3 bedroom dwellings	2.5*	
	iv) 4 or more bedrooms	3.0	

**Table 3.1 – EHDC Parking Standards**

*\*(note that the number of spaces to be provided should be rounded up if necessary i.e. 3 dwellings should provide 5 car parking spaces).*

**East Hertfordshire District Council’s Sustainability SPD (March 2021)**

3.19 The Sustainability Supplementary Planning Document (SPD) has been prepared to provide guidance on the implementation of adopted District Plan (2018) policies related to climate change and sustainable design and construction, in order to improve the environmental sustainability of new development. It will be a material consideration in the determination of planning applications.

3.20 The Council adopted the SPD at the Council meeting on 2 March 2021.

3.21 At Section 8, reference is made that new development should ensure streets and paths facilitate direct and efficient bus operation and as many homes as possible should lie within 400m access of bus services.

3.22 The SPD requires all new residential and non-residential development to submit a completed Sustainability Checklist to demonstrate that relevant criteria relating to Sustainable transport have been considered and explained. In addition, and depending on the scale of development all developments are required to submit a Travel Plan, Transport Statement, Transport Assessment.

Sustainable Transport	Checklist Criteria	Compliance	Summary of Approach
T.1	Have you demonstrated that the development includes measure that reduce the overall need to travel and particularly by Private Car	Yes	The site is within a walkable neighborhood with access to primary school, village facilities and access to regular bus services to Ware and Hertford. This provides residents with opportunity to access 'every day' journey purposes: education, leisure, retail & employment to be undertaken by sustainable modes.
T.2	Have you demonstrated how, as first principles of design, the scheme proposals priorities walking and cycling within the development and link with existing networks beyond the development to deliver healthy and walkable neighborhoods	Yes	The proposals provide pedestrian and cycle facilities internally which link with the existing external infrastructure, including PRow, and via the repurposed farm access for sustainable access.
T.3	Where cycling facilities and any bus stops are to be provided, have you demonstrated that they are accessible and attractive for all users and offer appropriate shelter	Yes	There are no bus shelters at the closet bus stops on High Road. This could be an area where the development could provide an improvement
T.4	Have you included measures to encourage uptake of more sustainable transport and engender modal shift from the outset of development	Yes	A Travel Plan will be secured as part of the development from the outset. This includes the provision of a travel voucher in accordance with HCC Travel Plan Guidance.
T.5	Have you submitted to HCC an appropriate Travel Plan, Transport Assessment and or Statement (as appropriate)	Yes	
T.6	Where car parking is to be provided have you provided justification for the number of spaces proposed and made provision for electric vehicle charging in accordance with the SPD	NA	Parking will be a reserved matter and will be in accordance with SPD requirements

**Table 3.2 – Sustainability Checklist**

#### **HCC Local Transport Plan 4**

3.23 Respective local policies relating to highways and transport are summarised below:

- Policy 2 – Influencing land use Planning
- Policy 3 – Travel Plans & Behavioural Change
- Policy 5 – Development Management
- Policy 6 – Accessibility
- Policy 7 – Active Travel – Walking
- Policy 8 – Active Travel - Cycling

3.24 These policies have been considered as part of the proposed development.

## 4.0 DEVELOPMENT PROPOSALS

### Overview

- 4.1 This TA examines the transport aspects of the proposed residential development for up to 95 dwellings, of a mix of 1,2,3 & 4 bed properties. The application is in outline with all matters reserved except access.



Extract of Concept Plan Masterplan

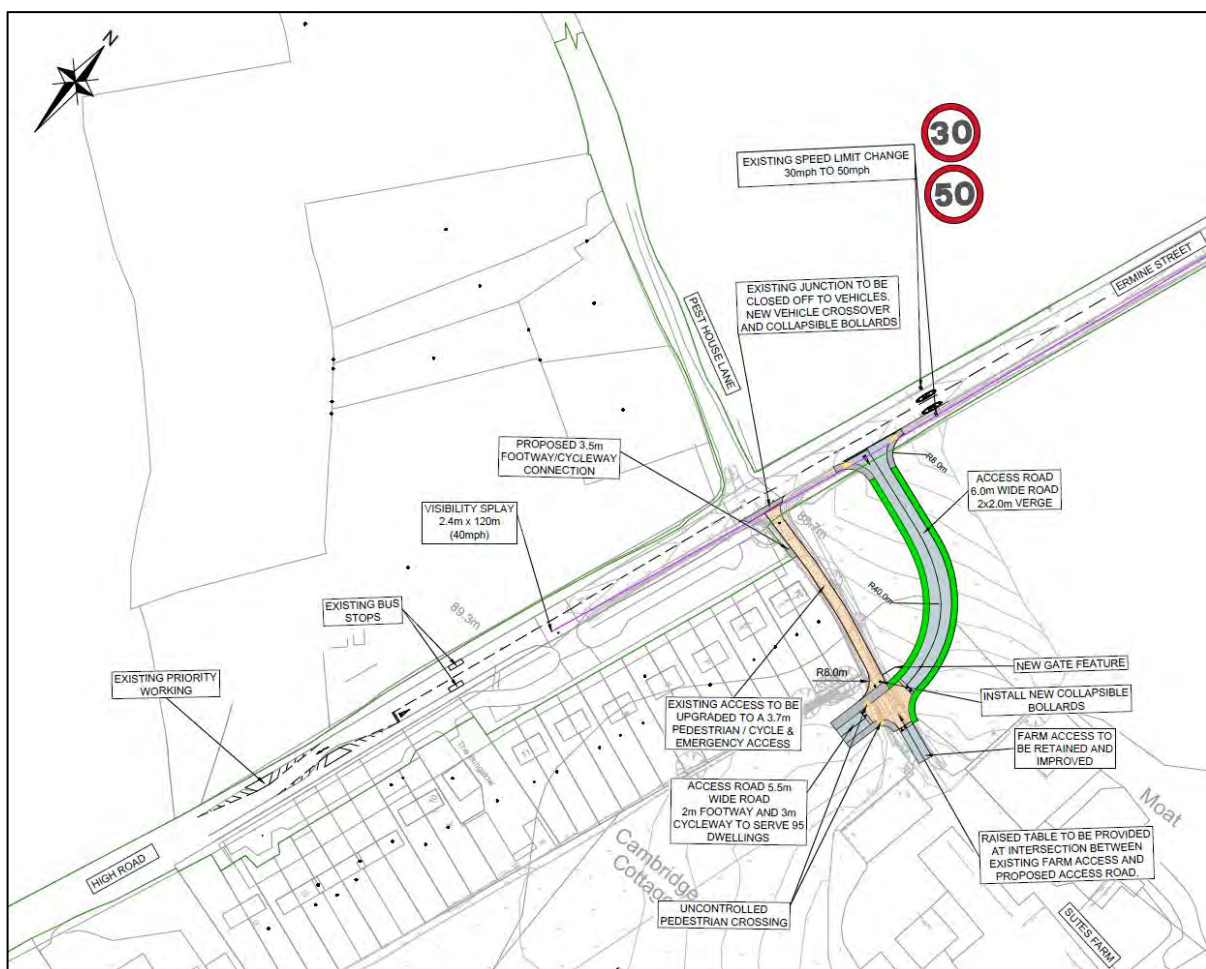
- 4.2 Thrive Architects have prepared a Concept Plan which is included at **Appendix A**.

### Proposed Access Arrangements

- 4.3 As described in Section 1, Sutes Farm submitted an application to relocate the access as part of a 2016 planning application for a proposed grain store (planning reference 3\_16\_0246). The application was granted permission which would result in the closure of the existing farm access to vehicular activity, and the reinstatement of the footway. The existing access to the farm runs adjacent to the existing residential boundary on Ermine Street.



- 4.4 The permitted access is shown on Drawing 201307 DWG 006, contained at **Appendix B**. The approved junction and adjoining section has been designed in accordance with Hertfordshire’s Design Guide Chapter 4 in which Table 4.1.1.1 identifies that an access with a minimum 5.5m carriageway can accommodate up to 300 residential units.
- 4.5 However, the access road between Ermine Street and the farm access, will cater for both residential development and farm related activity, accordingly to allow for this combined activity the consented drawing has been modified slightly with a widened access road between Ermine Street and the farm access to 6m. These modifications maintain the principle of access, as per the permitted junction. Beyond the farm access, the access road will be used for residential development only accordingly the carriageway width has been reduced to 5.5m. The modified access is detailed on **Drawing U321-PL-SK-201-P05**.
- 4.6 Footway and cycle accessibility will be via the existing access track, which will be improved and upgraded to a minimum 3.7m, and provides an emergency access. The internal residential road network will be designed to include pedestrian footways within the development up to the existing track. A 3m cycleway will be provided along the residential access road on its western side which ties into the upgraded farm track. A 2m footway will be provided on the opposite side of the residential access road. Where the proposed access road continues past the farm access towards Ermine Street, 2m verges will be provided.



Extract of Drawing U321-PL-SK-201-P05



- 4.7 The pedestrian and cycle infrastructure at the existing track, and internal pedestrian connections to PRoW FP 45 (located within the site on the southern boundary), will be improved to provide the non-car accessibility between the site and the public highway. A pedestrian / cycle connection will also be provided from the upgraded track to the High Road cul-de-sac, facilitating access to the Primary School, and village facilities. To prevent vehicular use on the upgraded pedestrian / cycle emergency access track, collapsible bollards will be installed, as shown on **Drawing U321-PL-SK-201-P05**.
- 4.8 Pedestrian infrastructure including drop kerbs and tactile will be provided within the junction bellmouth.
- 4.9 The proposed access road has been designed to accommodate farm related vehicle activity, associated with Sutes Farm, which will continue with the proposed development. At the point where farm vehicles access Sutes Farm, the access road has been designed with a raised table at this intersection.
- 4.10 Swept path drawings of the following vehicles have been prepared:
- **Drawing CCE U321-203** – Articulated Vehicle (Swept Path)
  - **Drawing CCE U321-204** – Articulated Vehicle - Sutes Farm (Swept Path)
  - **Drawing CCE U321-205** – Fire Tender (Swept Path)
  - **Drawing CCE U321-206** – Refuse Vehicle (Swept Path)

#### Visibility Splays

- 4.11 The previously consented drawing was approved, with 2.4m x 120m visibility splays. ATC surveys were carried out to record the 85<sup>th</sup> percentile vehicle speeds close to the site access. This data is discussed in **Section 5**, and has been used to confirm the visibility splay requirement 160m north and 120m south of the access. The visibility splays from the site access are provided in accordance with the current recorded 85th percentile speed of the road and DMRB due to the rural nature of the road and are detailed on drawing **U321-PL-SK-201-P05**.

#### Safety Audit

- 4.12 The access proposals have been subject to a Stage 1 Safety Audit details of which alongside the Designers Response are included at **Appendix D**.

#### Internal Site Layout

- 4.13 A Concept Plan is contained in **Appendix A**. The detail of the internal road layout is subject to reserved matters however, it is anticipated to comprise a 5.5m carriageway which will form a series of loops. 2m wide footways will be provided. A 3m cycleway will be provided on the southern side of the internal central access road which will provide access to the proposed pedestrian / cycleway (upgraded farm track).

*Parking Provision*

4.14 Car parking spaces will be provided in accordance with East Hertfordshire District Council Guidance for Parking. The standards relevant to the site are summarised in the table.

Use Class	Description	Car Parking Standards (Spaces per dwelling)	Minimum Cycle Parking Standards
C3 Residential	i) 1 bedroom dwelling/studies	1.5*	1 l/t space per unit if no garage or shed is provided
	ii) 2 bedroom dwellings	2.0	
	iii) 3 bedroom dwellings	2.5*	
	iv) 4 or more bedrooms	3.0	

**Table 4.2 – EHDC Parking Standards**

**Refuse Strategy**

4.15 The access point has been designed to accommodate a refuse vehicle. Swept path analysis for an 11.2m refuse vehicle has been undertaken and is included on CCE **Drawing U321 206**. The proposals allow for a refuse vehicle and a car to pass safely.

## 5.0 ASSESSMENT METHODOLOGY

### *Introduction*

5.1 In order to assess the impact of the trips associated with the development proposals, the following paragraphs set out the methodology applied based on the following parameters, which are discussed in turn.

- 2023 Traffic Surveys
- TRICS Database
- Census Travel to Work

### *Traffic Surveys*

5.2 To inform the assessment, Automatic Traffic Counts (ATC), were undertaken for a 7 day period (18<sup>th</sup> October – 24<sup>th</sup> October) and a further ATC survey on Ermine Street was undertaken for a 7 day period (Thursday 16<sup>th</sup> – Wednesday 22<sup>nd</sup> November 2023).

5.3 A manual turning count (MTC) survey was also carried out on Thursday 16<sup>th</sup> November 2023 (outside of school holidays) at the existing Sutes Farm access with Ermine Street. This information has been used to inform the junction capacity assessment of the proposed site access.



**Survey Locations**

### ATC Surveys

- 5.4 It is noted that the Primary school, Puller Memorial Church of England Primary School, was closed between 19<sup>th</sup> October – 27<sup>th</sup> October. The primary use of the ATC information, was to review vehicle speeds on Ermine Street and High Road, in the vicinity of the proposed site access, to inform visibility splay requirements. The closure of the school during this period does not affect speed data. Details of the survey area and survey outputs are included at **Appendix E**.
- 5.5 **Tables 5.1-5.2** summaries the recorded 5-day traffic flows by direction on Ermine Street and High Road, between Wednesday 18<sup>th</sup> – Tuesday 24<sup>th</sup> October 2023.

	ATC 1 – Ermine Street											
	Time Period											
	0800-0900			1700-1800			0700-1900			Daily		
	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL
<b>Monday (Half Term)</b>	86	130	216	171	105	276	1348	1256	2604	1591	1431	3022
<b>Tuesday (Half Term)</b>	89	116	205	166	132	298	1463	1361	2824	1707	1550	3257
<b>Wednesday</b>	<b>147</b>	<b>188</b>	<b>335</b>	<b>206</b>	<b>122</b>	<b>328</b>	<b>1653</b>	<b>1431</b>	<b>3084</b>	<b>1900</b>	<b>1639</b>	<b>3539</b>
<b>Thursday</b>	148	200	348	186	140	326	1551	1423	2974	1823	1621	3444
<b>Friday</b>	123	167	290	153	83	236	1522	1394	2916	1746	1567	3313

**Table 5.1: ATC 1 Ermine Street Summary Table (October 2023)**

	ATC 2 – High Road											
	Time Period											
	0800-0900			1700-1800			0700-1900			Daily		
	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL
<b>Monday (Half Term)</b>	83	142	225	200	122	322	1511	1412	2923	1785	1620	3405
<b>Tuesday (Half Term)</b>	99	134	233	184	151	335	1649	1549	3198	1925	1767	3692
<b>Wednesday</b>	<b>158</b>	<b>210</b>	<b>368</b>	<b>230</b>	<b>143</b>	<b>373</b>	<b>1825</b>	<b>1632</b>	<b>3457</b>	<b>2107</b>	<b>1874</b>	<b>3981</b>
<b>Thursday</b>	168	221	389	207	154	361	1755	1621	3376	2075	1866	3941
<b>Friday</b>	139	191	330	168	99	267	1677	1559	3236	1951	1775	3726

**Table 5.2: ATC 2 High Road Summary Table (October 2023)**

- 5.6 The ATC information shows that in the week prior to the school half term, traffic flows are consistent, with some drop off in vehicle activity in the AM period during the half term (Monday & Tuesday). The survey data shows that traffic flows recorded on Wednesday 18<sup>th</sup> October, were the highest across the survey period, and not impacted by the school closure.

### Ermine Street Re-survey

5.7 Notwithstanding that the October 2023 traffic flows are comparative across the survey period despite an overlap with the school being closed, to provide further information on traffic flows outside of when the school was closed an additional survey was undertaken on Ermine Street outside of the school half term between Thursday 16<sup>th</sup>- Wednesday 22<sup>nd</sup> November 2023. This information is detailed at **Appendix F. Table 5.3** summaries the recorded 5-day traffic flows by direction on Ermine Street over this period.

	ATC 1 – Ermine Street											
	Time Period											
	0800-0900			1700-1800			0700-1900			Daily		
	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL	NB	SB	TOTAL
<b>Monday</b>	156	192	348	213	108	321	1590	1420	3,010	1829	1611	3440
<b>Tuesday</b>	167	194	361	188	145	333	1666	1444	3,110	1923	1641	3564
<b>Wednesday</b>	<b>158</b>	<b>203</b>	<b>361</b>	<b>179</b>	<b>128</b>	<b>307</b>	<b>1567</b>	<b>1607</b>	<b>3,174</b>	<b>1810</b>	<b>1830</b>	<b>3640</b>
<b>Thursday</b>	170	198	368	198	138	336	1628	1428	3,053	1893	1615	3508
<b>Friday</b>	175	223	398	166	113	279	1686	1557	3,243	1914	1733	3647

**Table 5.3: Re-surveyed - ATC 1 Ermine Street Summary Table (November 2023)**

5.8 The re-survey shows that traffic flows are consistent to those carried out in October, albeit generally across the 5 day period to those observed in October. Notably with slightly higher AM and PM flows recorded for the Monday and Tuesday compared with the October counts (half term).

### Ermine Street Speed Surveys

5.9 Vehicle speeds were also obtained from the 2 ATC locations. Reference is made to DMRB CA185 Vehicle Speed Measurement, which contains the requirements for the measurement of vehicle speeds and for determining 85<sup>th</sup>ile speeds on existing all-purpose trunk roads.

5.10 The document requires speed measurements to be undertaken in free flow conditions, with a minimum 200 vehicle sample size and for measurements to be undertaken outside of peak traffic flows. This guidance relates specifically in the context of strategic trunk road networks and settings where peak hour volumes could prevent free flow conditions. However, its application to local rural roads provides a benchmark for considering 85<sup>th</sup>ile speeds for design purposes.

5.11 **Tables 5.4-5.5** below provide a breakdown of the 85<sup>th</sup>ile speeds across the day recorded on Ermine Street, during the peak periods and through the non-peak periods as defined by CA185.

	Northbound					Southbound				
	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
<b>0800-0900</b>	47.5	48.7	46.4	42.4	49.2	49.6	48.5	46.3	42.6	48.5
<b>1700-1800</b>	49.6	49.8	45.1	48.0	50.2	50.2	50.1	48.5	49.4	53.0
<b>1000-1100</b>	46.0	47.3	44.2	46.6	46.9	48.0	46.4	45.5	49.1	48.8
<b>1100-1200</b>	47.9	46.9	43.6	48.5	47.1	46.6	48.7	46.2	46.9	45.5
<b>1400-1500</b>	48.1	50.8	43.7	47.2	49.4	46.5	48.9	46.2	50.1	49.4
<b>1500-1600</b>	47.3	48.9	46.2	45.9	45.2	45.8	52.2	45.1	50.2	47.8
Daily	48.8	48.9	46.5	47.8	48.4	49.0	49.2	47.2	48.9	48.9

**Table 5.4: ATC 1 Ermine Street 85<sup>th</sup>ile Recorded Speed Summary Table (October 2023)**

	Northbound					Southbound				
	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
<b>0800-0900</b>	47.4	47.3	48.6	46.8	47.2	49.0	47.2	48.3	48.0	49.3
<b>1700-1800</b>	46.4	47.5	48.0	46.0	48.0	48.5	46.9	47.2	45.3	47.3
<b>1000-1100</b>	47.0	47.6	47.9	48.0	47.1	50.5	49.8	47.5	46.9	49.6
<b>1100-1200</b>	47.4	47.4	47.4	47.5	47.7	49.5	48.6	45.8	45.1	47.6
<b>1400-1500</b>	50.0	46.7	47.5	49.2	48.5	48.8	49.3	47.4	50.0	48.0
<b>1500-1600</b>	45.4	45.3	47.2	46.6	47.2	47.8	49.4	47.5	49.3	49.0
Daily	48.2	47.8	48.0	47.5	48.3	49.3	49.2	48.1	48.7	49.3

**Table 5.5: ATC 1 Ermine Street 85<sup>th</sup>ile Recorded Speed Summary Table (November 2023)**

5.12 The ATC was cited on the speed limit transition on Ermine Street where the posted speed limit is 50mph northbound: 30mph southbound (heading into High Cross). The survey data shows that for both survey periods (October and November) that across the week there is some variation in 85<sup>th</sup>ile recorded speeds but generally they are in the order of 50mph in both directions.

5.13 Visibility splays 2.4m x 160m from the proposed access to the north, are detailed on drawing **U321-201-P05**, which are in accordance with DMRB and 50mph speed limits and the recorded 85<sup>th</sup>ile speeds.

### High Road - Speed Surveys

5.14 Tables 5.6 below provide a breakdown of the 85%ile speeds across the day recorded on High Street, during peak periods and through the non-peak periods as defined by CA185

	Northbound					Southbound				
	Mon	Tues	Wed	Thurs	Fri	Mon	Tues	Wed	Thurs	Fri
<b>0800-0900</b>	39.5	38.1	38.8	37.3	37.9	36.6	36.0	33.9	33.0	34.8
<b>1700-1800</b>	40.3	39.0	37.5	38.7	41.0	34.7	35.9	35.2	35.5	35.7
<b>1000-1100</b>	39.6	37.4	37.6	37.5	38.1	35.0	34.2	34.3	34.8	34.9
<b>1100-1200</b>	38.5	37.4	38.5	38.9	37.9	32.0	37.6	35.9	34.6	33.7
<b>1400-1500</b>	39.4	39.8	37.5	37.8	38.5	34.1	35.2	36.7	35.8	34.5
<b>1500-1600</b>	38.3	38.7	38.6	37.7	38.1	34.1	35.5	33.3	34.1	33.9
Daily	39.4	38.8	38.5	38.6	38.9	35.7	36.0	35.6	35.9	35.1

**Table 5.6: ATC 2 High Road 85%ile Recorded Speed Summary Table**

5.15 The ATC was cited on High Road (posted speed limit 30mph) in the vicinity of the bus stops, and approximately 65m from the priority working traffic calming.



**Image of Priority Working south of ATC 2**

5.16 The survey data shows that across the week there is some variation in 85%ile recorded speeds, with southbound speeds in the order of 36mph. Northbound speeds were higher in the region of 40mph. For 30mph speed limits DMRB prescribes 90m, however based on the survey data, and the northbound recorded speeds, which are around 40mph, in this instance DMRB splays of 120m would be more appropriate.

5.17 Visibility splays from the proposed access to the south, are detailed on drawing **U321-201-P05** at 2.4m x 120m.



**MCC Survey: Ermine Street / Sutes Farm Access**

5.18 A MCC video survey was undertaken on Thursday 16<sup>th</sup> November 2023, within school term time. A copy of the survey data is included at **Appendix F**.

**MCC Survey: Peak Hour Calculation**

5.19 The MCC has been used to derive the peak hour for the junction assessment and this calculation is presented in the table below. The AM peak hour is 0800-0900 and the PM is 1600-1700. Observed flows are detailed on Diagrams TFD1.

	Totals
	Thursday 16 <sup>th</sup> November
0700-0800	304
0800-0900	398
0900-1000	2254
1600-1700	428
1700-1800	353
1800-1900	220

**Table 5.7: Peak Hour Summary Table**

**Vehicle Trip Rates**

5.20 The TRICS online database has been used to review similar developments in order to estimate the proposed vehicle trips associated with the development. These trip rates have been calculated in accordance with the TRICS Good Practice Guide 2023.

5.21 The TRICS database is updated quarterly and as such it is important to use the latest version, to ensure that the most current data sets are available. TRICS research suggests that an 8 year cut off of data is appropriate to ensure that current trends and patterns are taken into account.

5.22 In order to find sites that are comparable with the development proposals it is necessary to apply filters to include only those sites that demonstrate similar characteristics. These have been applied in accordance with the Good Practice Guidance.

5.23 TRICS version 7.10.03 was the most up to date version of the software available at the time of analysis and had been used in this report.

5.24 The following selections/assumptions were made in the interrogation of the TRICS database:

- Multi-modal Site Surveys
- Land use class 03 A – Residential, Houses Privately Owned
- Area/region – England only excluding Greater London

- Day of Week – Monday to Friday
- Number of dwellings – 50 to 150
- Location Type –Neighborhood Centre – Sub Category Villages. While none of these are an exact match to the rural village location of High Cross. Rank Tables identified two sites with low trip rates, and these have been removed from the selection.

5.25 **Table 5.8** summarises the expected trip rates in the AM and PM peak periods. TRICS outputs including Rank Tables are included at **Appendix G**. The predicted trip generation associated with the proposed 95 dwellings is set out in **Table 5.9**.

Trip Rates	Arrivals	Departures	Total
AM Peak Hour	0.171	0.354	0.525
PM Peak Hour	0.332	0.169	0.501
Daily	2.322	2.364	4.686

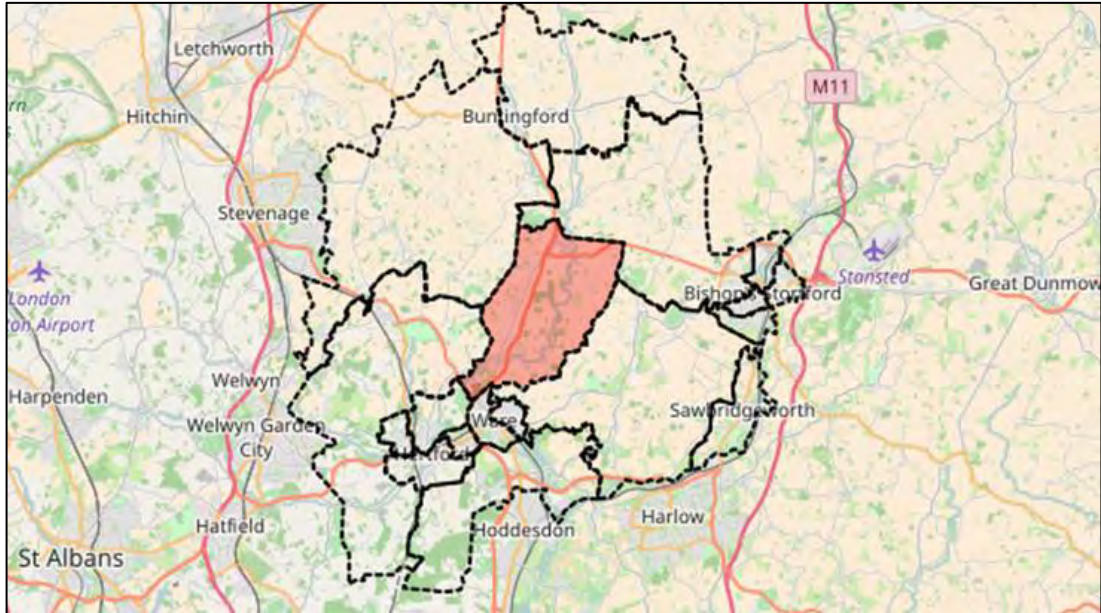
**Table 5.8: Residential Trip Rates**

	Proposed 95 Dwellings at Land North of Church Road		
	Arrivals	Departures	Total
AM Peak Hour	16	34	50
PM Peak Hour	32	16	48
Daily	221	225	446

**Table 5.9: Proposed Vehicle Trip Generation**

***2011 Travel to Work Census: Traffic Distribution***

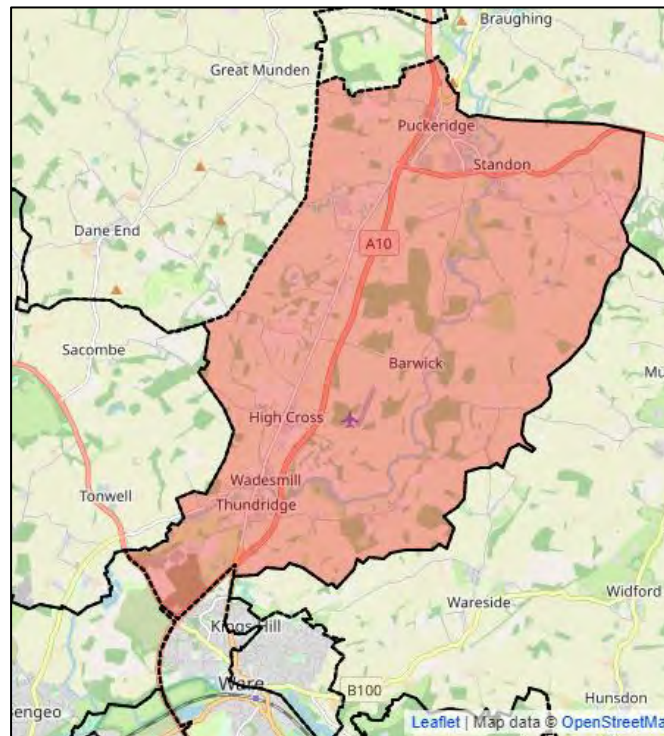
5.26 The proposed distribution has been based on 2011 Census Data ‘Journey to Work’ for Middle Super Output Area (MSOA) East Hertfordshire 006 as shown below:



**Image 5.1 – MSOA East Hertfordshire 006**

- 5.27 2011 Census Travel to Work provides the most recent representative available data to examine the level of accessibility for an area. It predates the 2021 TTW surveys, which were undertaken during a period of rapid change, during the Pandemic, the guidance around the use of the 2021 data acknowledges this confirming that it is difficult to compare this variable with the 2011 Census because Census 2021 took place during a national lockdown, when the government advice at the time was for people to work from home (if they can) and avoid public transport.

- 5.28 TTW data for the Middle Super Output Area (MSOA) East Hertfordshire 006, based on a sample size of 2,150 residents, is presented at **Appendix H**. This includes 247 residents who live and reside within the output area.



**East Hertfordshire: MSOA 006**

- 5.29 The output area, covers a large area along between north of Ware up to and including Puckeridge. This area includes the villages of Wadesmill, Thundridge and High Cross.
- 5.30 Whilst there is some employment within High Cross, it is likely that the majority of employment trips are external to High Cross village. In contrast Puckeridge, is a larger settlement area, and may have a larger level of employment internalisation, and overall residential demand, and this is likely to be reflected in the mode share statistics, particularly for walking and cycling mode choice. For example, of the total TTW trips within MSOA 006, 80% are on foot and 44% are by bike. In contrast as a mode share overall walking is 6% and cycle is 1%. Accordingly, **Table 5.10**, below provides a summary of TTW trips by mode for all trips from MSOA 006, and an adjustment, removing the internal trips, so as to remove the potential for bias on mode share that would otherwise be applied to High Cross. This shows with internal TTW removed, the sample size of TTW trips is 1,909. The mode share for walking reduces to 1% (24) and cycling to 0%, whilst car mode share increases to 86% (1629).
- 5.31 None of the settlements within MSOA 006 have direct access to a rail station, however rail mode share makes up 5% (115) of TTW trips. It is reasonable to consider that the rail mode share is actually part of a combined mode share journey i.e., car and rail, or possibly bus and rail. As set out under the public transport section, bus services provide convenient access to rail connections within Ware.
- 5.32 As such the car mode share statistics probably encompasses an element of combined mode share journeys and will therefore include a level of sustainable travel. As such the 86% car

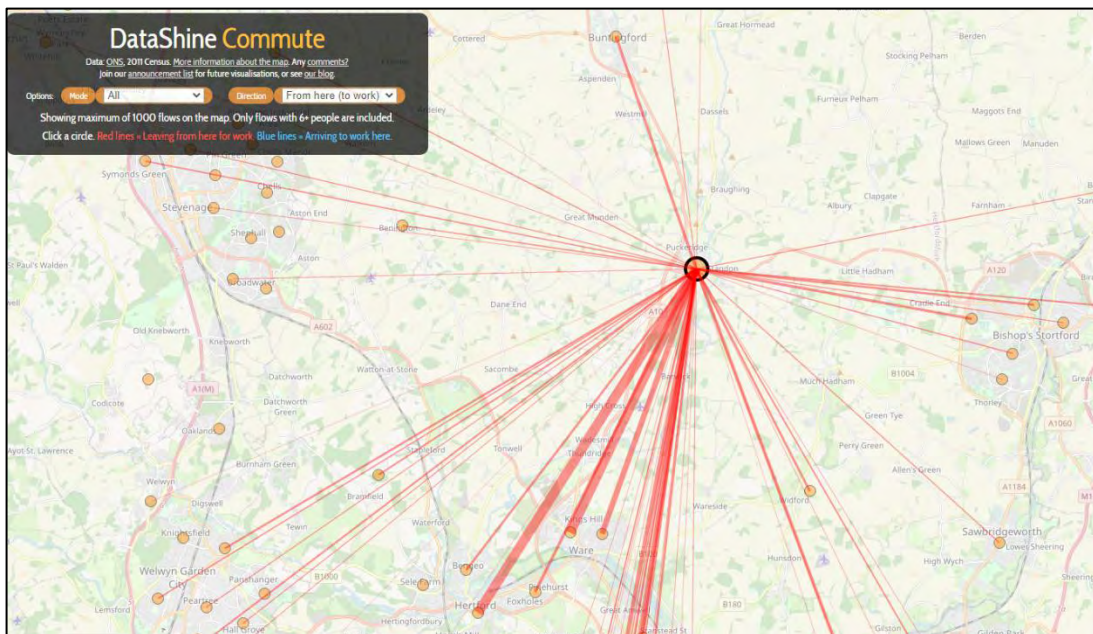


driver mode share needs to be viewed in this context of combined mode use. However, taking the information as presented, sustainable mode share for TTW accounts for around a 14%.

Mode	ALL TTW Mode Share	External TTW Mode Share Only
Walk	6%	1%
Car Driver	81%	86%
Car passenger	4%	4%
Bus	2%	2%
Train	5%	6%
Cycle	1%	0%
M/C	0%	0%
<b>Sustainable Mode Share</b>		<b>14%</b>

**Table 5.10: 2011 Census TTW Multi-Modal Data for East Hertfordshire 006**

5.33 In term of access to employment, the vast majority of journeys are to settlements to the south, as presented by the DataShine graphic below.



**DataShine Commute Pattern: East Hertfordshire: MSOA 006**

5.34 The travel to work key destinations are summarised in **Table 5.11** below for all work journeys made by car. Details are contained at **Appendix H**.

2011 Census 'Journey To Work' From East Hertfordshire 006		
Key Place of Work	Car Driver	Percentage
Ware	188	10.9%
Hertford	197	11.4%
Bishop Stortford	78	4.5%
Hatfield	46	2.7%
Welwyn Garden City	78	4.5%
Hoddeston & Broxborne	103	5.9%
Cheshunt	79	4.6%
Harlow	89	5.1%
Buntingford	34	1.9%
Stansted St Margrets	37	2.1%
Haddam	31	1.8%
Stapleford	26	1.5%
High Cross	27	1.6%
Stansted	33	1.9%
Stevenage	66	3.8%
Baldock, Letchworth & Hitchin	42	2.4%
Enfield	77	4.4%
Epping Forest	44	2.5%
Cambridgeshire & Bedfordshire	62	3.8%
London	78	4.5%
Chiltern	20	1.2%
Essex	20	1.2%
Other	277	16.0%
Total	1732	

**Table 5.11: 2011 Census Proportion of Car Work trips by Work Destination from EH006**

5.35 The 2011 Census data has been used alongside a review of journey times and likely route choices to establish a distribution profile the site. The wider distribution was used to determine the turning proportions at the site access. These are shown in **Table 5.12** below:

Site Distribution		
	Northbound	Southbound
% to / from	21%	79%

**Table 5.12: Generated traffic distribution by direction of travel.**

5.36 The majority of traffic (79%) will turn left from the site access in the AM Peak and head towards the south. The 79% is then split between the following routes:

- 43% A10 South;

- 13% A1170; and
- 23% Anchor Lane

5.37 The remainder of trips (21%) will turn right. Of the 21% of trips heading north 10% will turn onto the A10 with the remaining 11% carrying on the A120.

5.38 **Table 5.13** summarises the total flows in the AM and PM peak hour generated by the development on the local highway network.

Road Link	Development Trips (95 Units)	
	AM Peak Hour	PM Peak Hour
Ermine Road	11	10
A10	5	5
A120	6	5
High Road	39	38
Anchor Lane	12	11
A1170	7	6
A10 South	21	21

**Table 5.13: Distributed Development Trips**

5.39 The proposed development once distributed from the proposed site access, will dissipate through the network. High Road, will experience an increase of circa 40 additional trips in the AM and PM peak hour, this equates to less than one additional vehicle per minute. Beyond High Cross to the south, the proposed development will result in an additional circa 20 vehicle movements onto the A10. Heading north from the site there is predicted to be an additional 5-6 movements onto the A10 and A120 respectively. These are modest increases and below the 30-two-way threshold for consideration to further assessment.

5.40 **Table 5.14**, summarises the % increase on Ermine Street and High Road, with the proposed development. This demonstrates that on the immediate links to the site; on Ermine Street there will be circa a 3% increase in flows, and there will be a 10% change in flows in the peak period on High Road.

Road Link	AM Peak Hour			PM Peak Hour		
	Observed	Proposed	% Change	Observed	Proposed	% Change
Ermine Street (October 2023)	335	11	3.3%	328	10	3.0%
Ermine Street (November 2023)	361		3.0%	307	10	3.3%
High Road	368	39	10.6%	373	38	10.2%

**Table 5.14: Net Change Link Flows Ermine Street / High Road (October Survey)**

5.41 Whilst these increases are small a junction capacity assessment of the site access has been undertaken and this is discussed in **Section 6**.

**TEMPro Growth Factors**

5.42 For the capacity assessment, TEMPro 8.1 has been used to establish the growth rates between 2023 (year of survey data and, the year of application and the future assessment year 5 years post application (2028) as summarised in **Table 5.15**. The site is located within middle super output area (MSOA) East Hertfordshire 006, which has been set for all calculations.

Base Year	Forecast Year	AM	PM	Daily
2023	2028	1.0369	1.0384	1.040

**Table 5.15 – TEMPro Growth Factors: Core Scenario**

5.43 The growth rates summarised above have been used to factor the baseline traffic flows to the future base years. The growth rates are assumed to reflect all growth and therefore committed developments have not been included separately. The Base (without development) forecasts are shown on the following diagrams:

- TFD 1 – 2023 AM and PM Base; and
- TFD 1 – 2028 AM and PM Base.

5.44 The proposed development trips have been added to the baseline traffic flows to form the with development assessment years. These are shown on the following diagrams:

- TFD 2 – 2023 Base + Development; and
- TFD 2 – 2028 Base + Development.

5.45 An analysis of the capacity of the site access has been completed in Chapter 6.

## 6.0 JUNCTION IMPACT APPRAISAL

### Junction Capacity Analysis

- 6.1 Junction capacity analysis of the proposed site access at Ermine Street has been undertaken using Junctions 9 (PICADY), the industry standard software. Junction performance is measured as ratio of flow to capacity (RFC).
- 6.2 The PICADY outputs files are included at **Appendix I** and the results are summarised below. The base year and a 5-year future scenario have been tested.

Scenario	Scenario	Ermine Street (N)		B-AC Site Access		C-AB High Road (S)	
		RFC	Q	RFC	Q	RFC	Q
AM Peak Hour	2023 Base + Development	-	-	0.08	0	0.03	0
	2028 Base + Development	-	-	0.08	0	0.03	0
PM Peak Hour	2023 Base + Development	-	-	0.04	0	0.05	0
	2028 Base + Development	-	-	0.04	0	0.05	0

**Table 6.1: Summary of PICADY Results –Ermine Street / Site Access**

- 6.3 **Table 6.1** demonstrates that with the proposed development the junction will operate well within its theoretical design threshold of 0.85, with a maximum RFC of 0.08, demonstrating that the proposed development can be suitably accommodated on the highway network.



## 7.0 SUMMARY & CONCLUSIONS

### *Summary*

- 7.1 This Transport Assessment has been prepared by Cannon Consulting Engineers (CCE) on behalf of M Scott Properties Limited in relation to an outlining planning application for up to 95 residential units on Land East of High Road, High Cross, Hertfordshire.
- 7.2 It is proposed to access the development via the consented access proposals, which have been modified to 6m to accommodate residential and farm access. The access proposals have been subject to a Stage 1 Road Safety Audit.
- 7.3 Pedestrian and cycle connectivity has been discussed, including the repurposes of the farm access track which will also serve as an emergency vehicle access.
- 7.4 The existing transport conditions have been considered, demonstrating that the site is located within a walkable neighbourhood, with access by sustainable modes to a range of everyday facilities. These include all transport modes from non-motorised users (pedestrian and cyclists) to public transport and the road network. It is considered that the site is well located in relation to the existing transport network. The bus routes provide services to key local destinations, and access to rail facilities in Ware.
- 7.5 The proposals are supported by a Travel Plan, which will include incentives for residents which will help to promote and encourage the uptake of sustainable modes of travel from the development.
- 7.6 Traffic surveys were commissioned in October 2023 and November 2023 this information has been used to inform junction visibility splays and a junction capacity assessment of the proposed site access arrangements. The suitability of the ATC traffic data has also been discussed. TEMPro NTM has been used to calculate growth factors for the application year (2023) and future year (2028) assessments.
- 7.7 The trips associated with the development have been calculated using trip rates derived from TRICs and distributed on the highway network using a 2011 National Census journey to work data. This information was used to consider the increase in trips on the wider highway network, concluding modest increases will occur which are below the 30-two-way threshold used for consideration of need for further assessment. The level of generated traffic is low enough not to warrant further analysis of the highway network.
- 7.8 The proposed site access junction has been shown to operate well within capacity for the proposed development in both base and future years.
- 7.9 A review of parking and servicing has been undertaken and is policy and design compliant. A review of national, regional and local policy has been undertaken and it has been demonstrated that the development proposals are policy compliant.

***Conclusion***

7.10 The Transport Assessment demonstrates that:

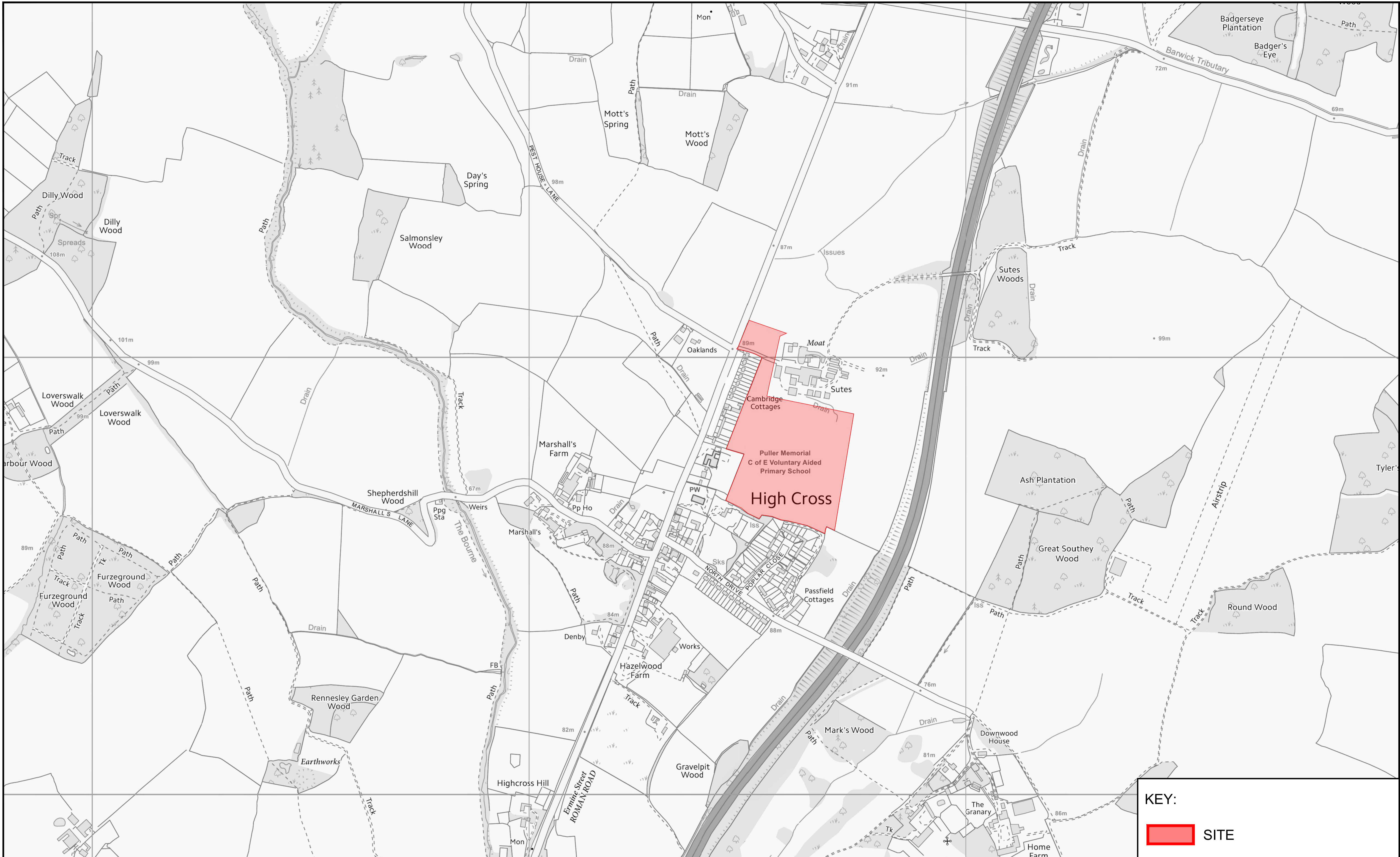
- The site is well located to promote sustainable modes, including walking, cycling and public transport;
- Safe and sustainable access to the site can be achieved;
- The residual transport impacts of the development are not considered to be 'severe' as prescribed in NPPF.

7.11 CCE consider that this TA demonstrates that the proposals are acceptable in terms of highways and transportation issues.

## **FIGURES**

**Figure 1**      Site Location Plan  
**Figure 2**      Accessibility Plan





KEY:  
 SITE

DATE  
29.11.2023

DRAWN BY  
JTH

SCALE @ A4 SIZE  
D.N.S.

PROJECT TITLE  
LAND EAST OF HIGH ROAD, HIGH CROSS, HERTFORDSHIRE

FIGURE TITLE  
SITE LOCATION PLAN

FIGURE NUMBER  
1

PROJECTNO.  
U321





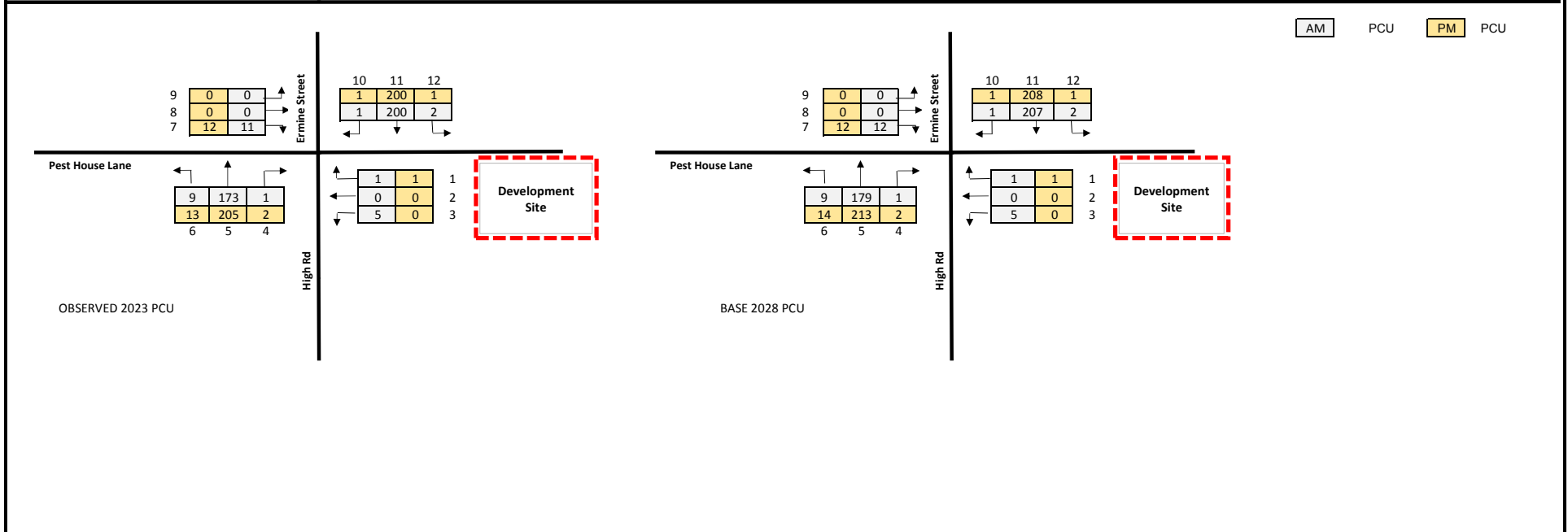
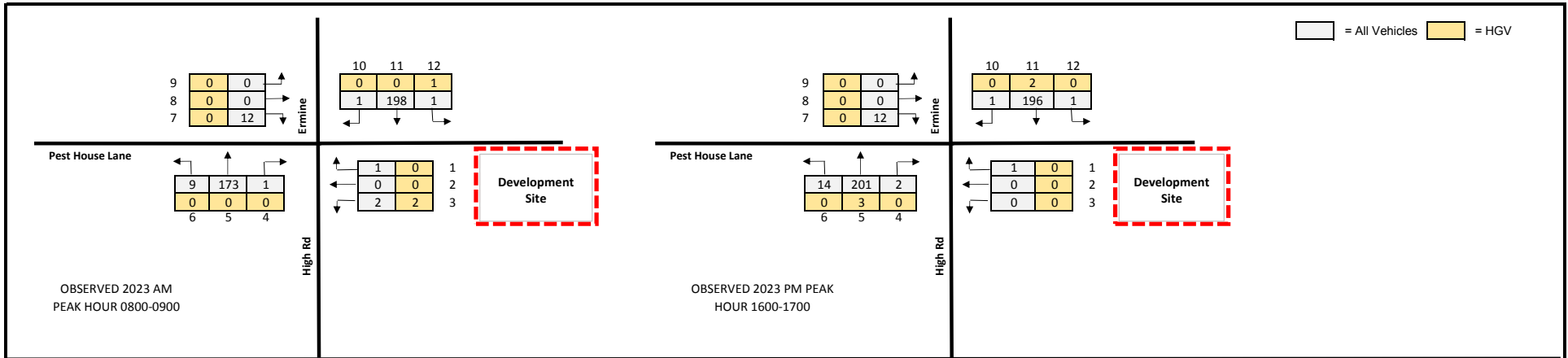




## **DIAGRAMS**

**Diagram TFD1** 2023 Observed & 2028 AM and PM Peak Hour

**Diagram TFD2** 2023 & 2028 + Proposed AM and PM Peak Hour



Project Title:  
LAND EAST OF HIGH ROAD, HIGH CROSS, HERTS

Client:  
M SCOTT PROPERTIES

Title:  
THURSDAY 16TH NOVEMBER 2023 (OBSERVED) AND 2028 BASE

Date:  
01/11/2023

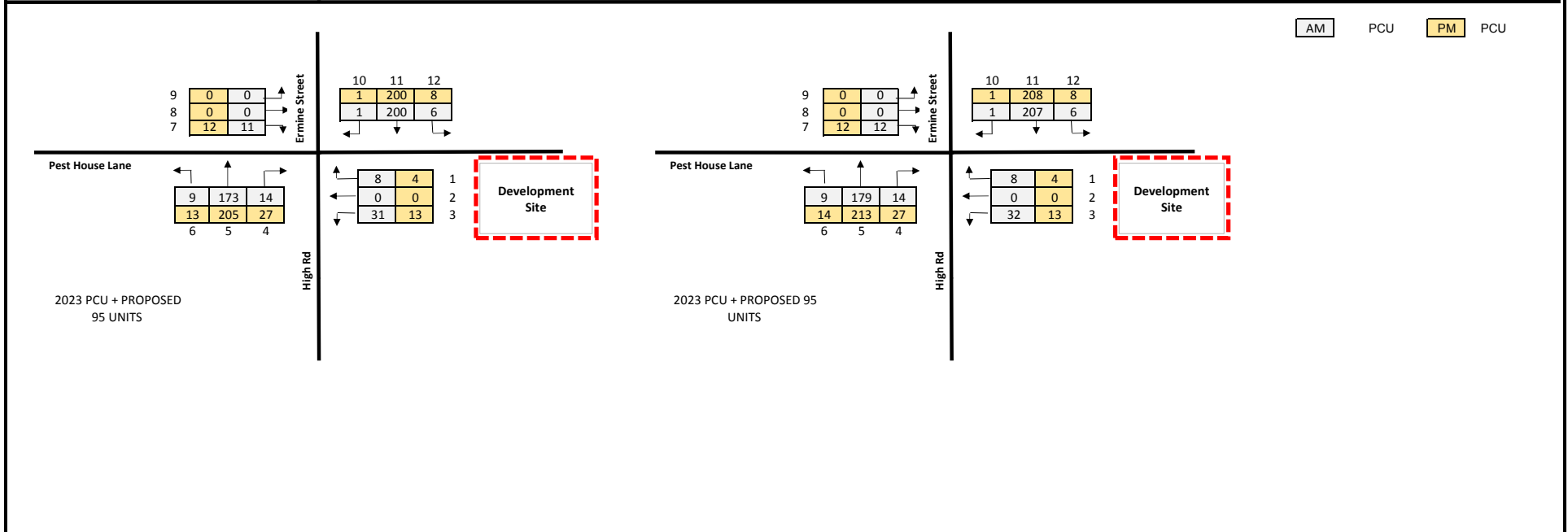
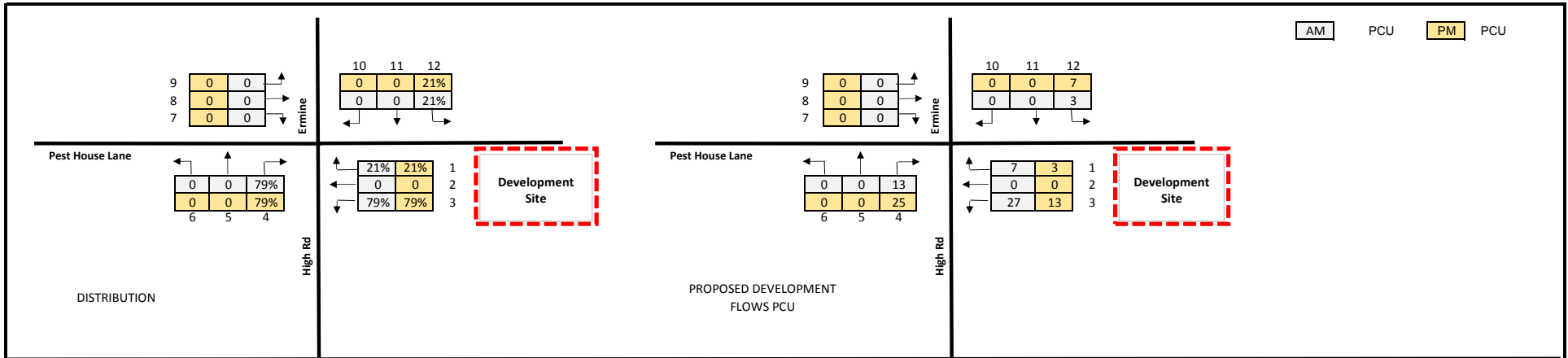
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EM



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Project No:  
U321

Figure No:  
TFD 1



Project Title:  
LAND EAST OF HIGH ROAD, HIGH CROSS, HERTS

Client:  
M SCOTT PROPERTIES

Title:  
PROPOSED DISTRIBUTION, PROPOSED DEVELOPMENT & 2028 + PROPOSED

Date:  
01/11/2023

Drawn By:  
EM



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Project No:  
U321

Figure No:  
TFD 2

## **DRAWINGS**

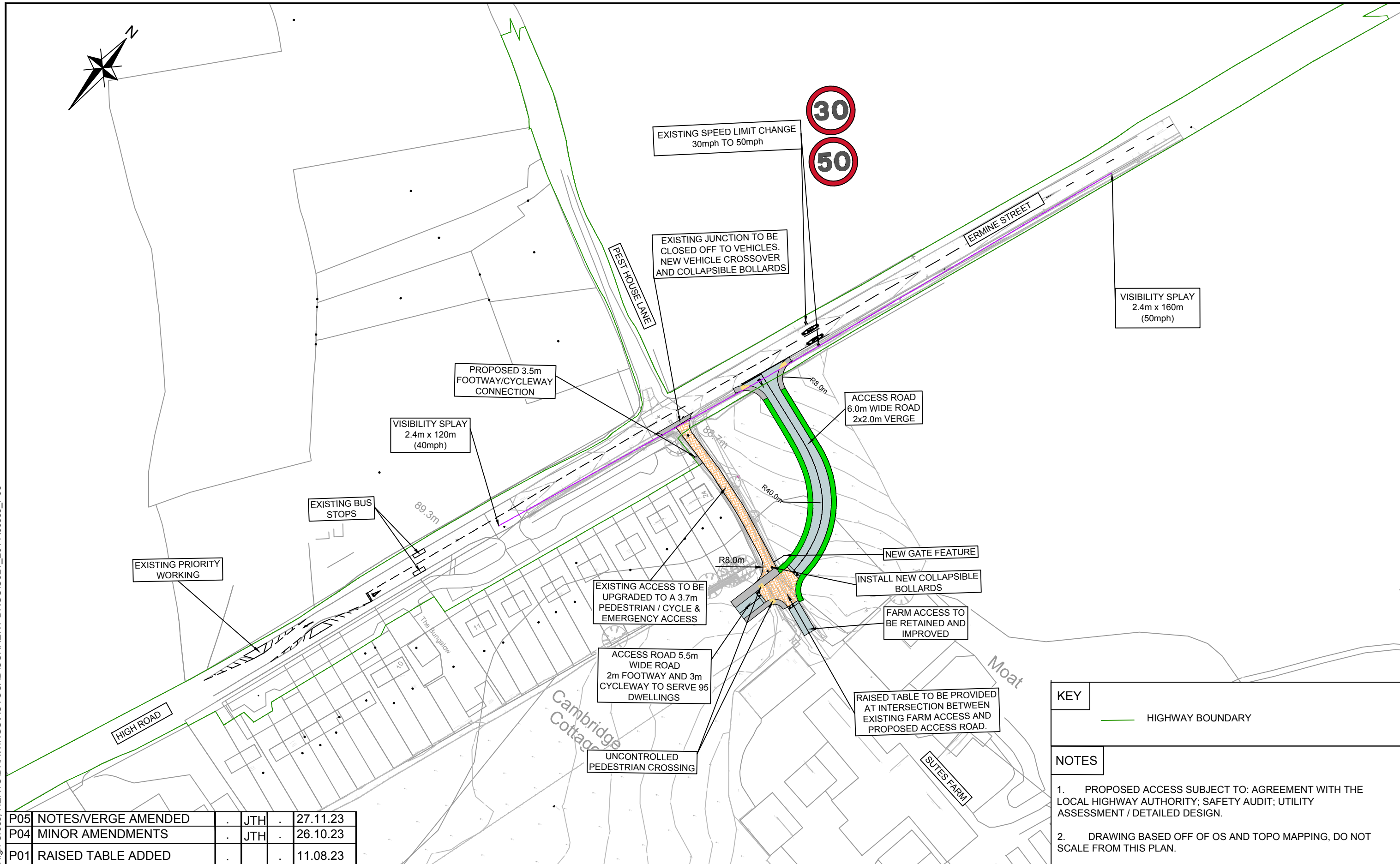
**Drawing CCE U321-201-P05** – Proposed Site Access Layout

**Drawing CCE U321-203** – Articulated Vehicle (Swept Path)

**Drawing CCE U321-204** – Articulated Vehicle - Sutes Farm (Swept Path)

**Drawing CCE U321-205** – Fire Tender (Swept Path)

M:\U321 Sutes Farm High Cross. HERTSDRAWINGS\AUTOCAD\CURRENT DRGS\U321\_201 Access\_P05



P05	NOTES/VERGE AMENDED	.	JTH	.	27.11.23
P04	MINOR AMENDMENTS	.	JTH	.	26.10.23
P01	RAISED TABLE ADDED	.		.	11.08.23

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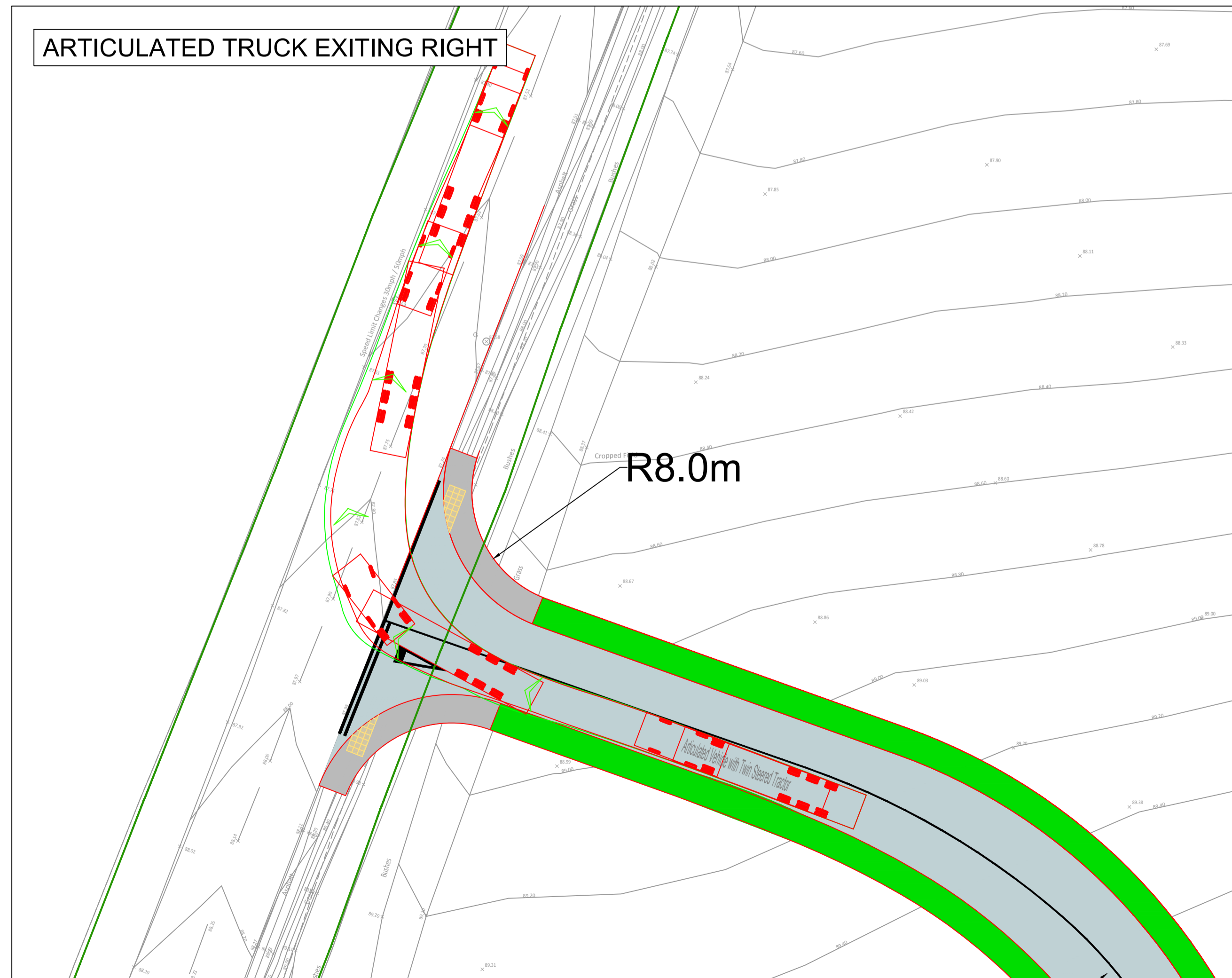
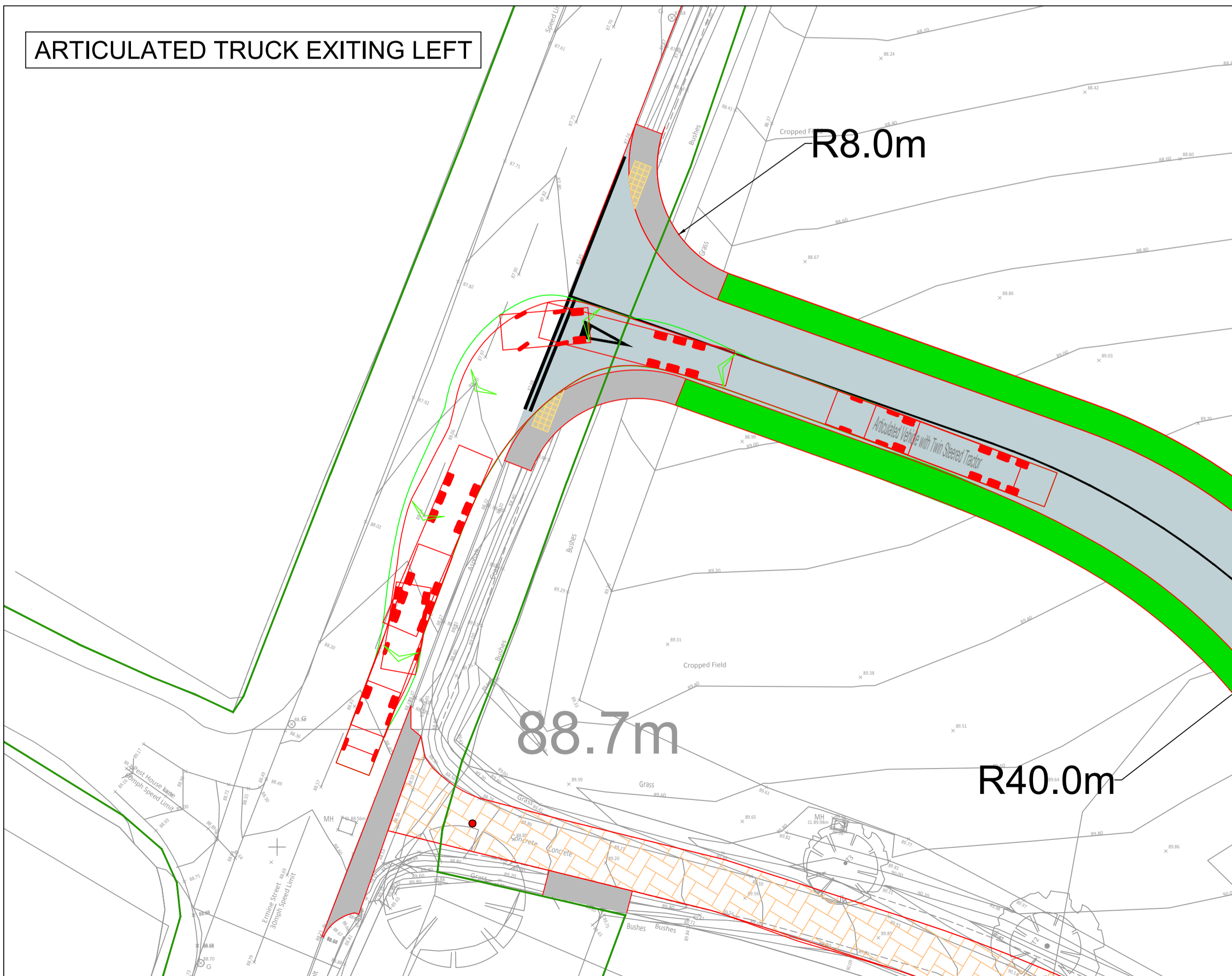
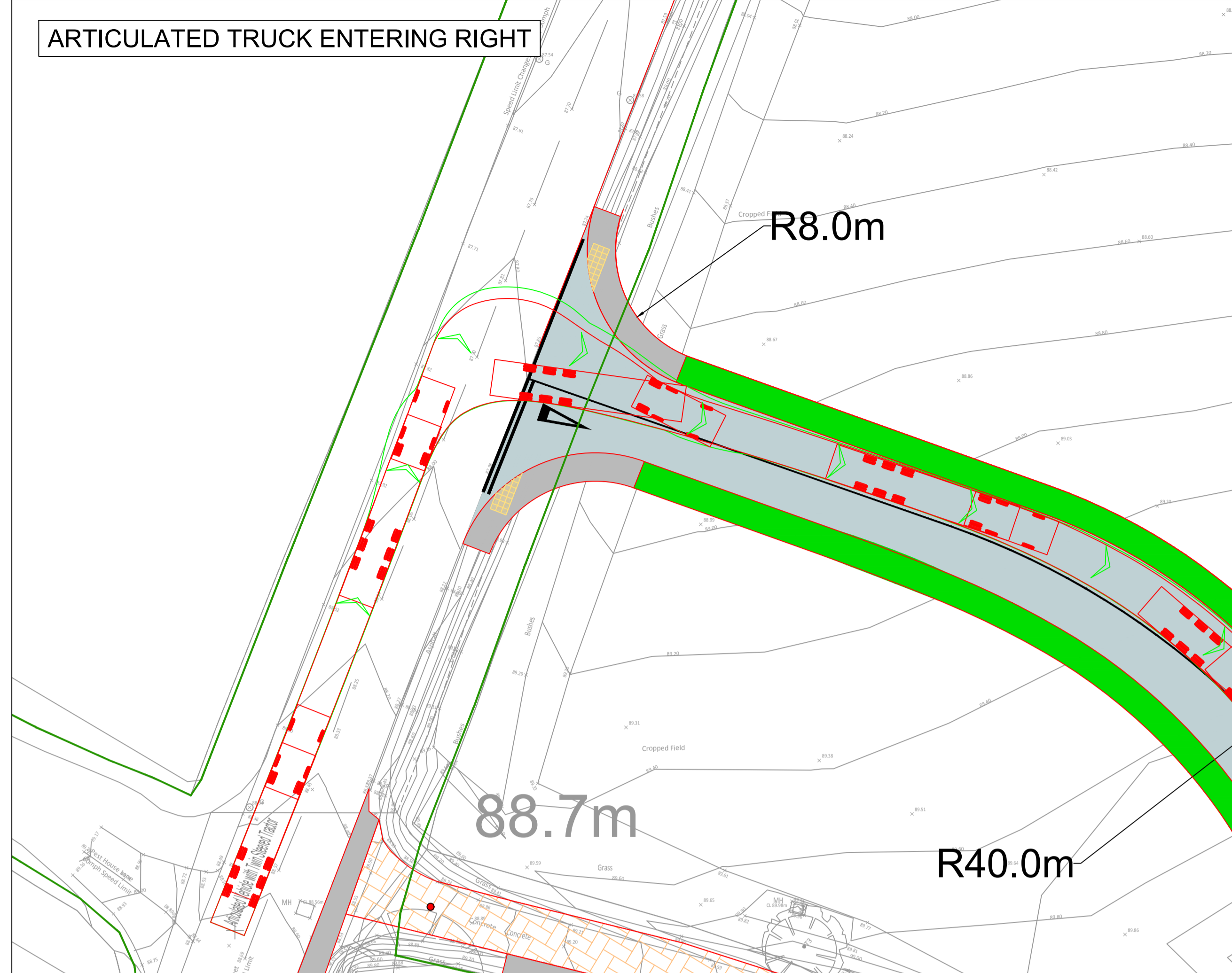
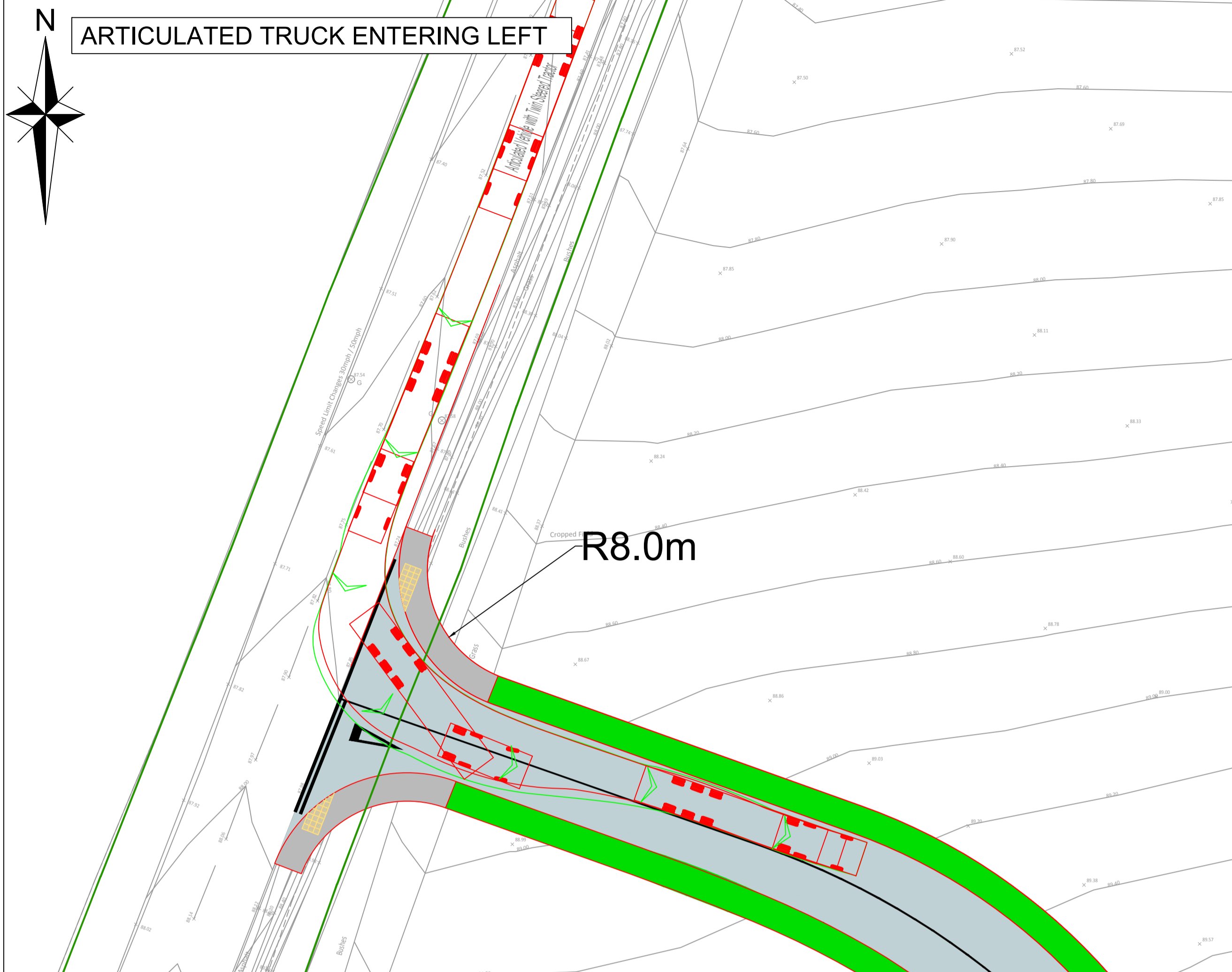
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DRAWING TITLE	PROPOSED ACCESS PLAN

CLIENT	M SCOTT PROPERTIES LTD
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**CANNON**  
 CONSULTING ENGINEERS  
 Highways, Transport & Infrastructure Planning

KEY	— HIGHWAY BOUNDARY
NOTES	1. PROPOSED ACCESS SUBJECT TO: AGREEMENT WITH THE LOCAL HIGHWAY AUTHORITY; SAFETY AUDIT; UTILITY ASSESSMENT / DETAILED DESIGN. 2. DRAWING BASED OFF OF OS AND TOPO MAPPING, DO NOT SCALE FROM THIS PLAN.
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DRAWING NUMBER	U321 - PL - SK - 201
REV.	P05





**KEY**

Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.650m  
 Overall Body Height 3.691m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

**NOTES**

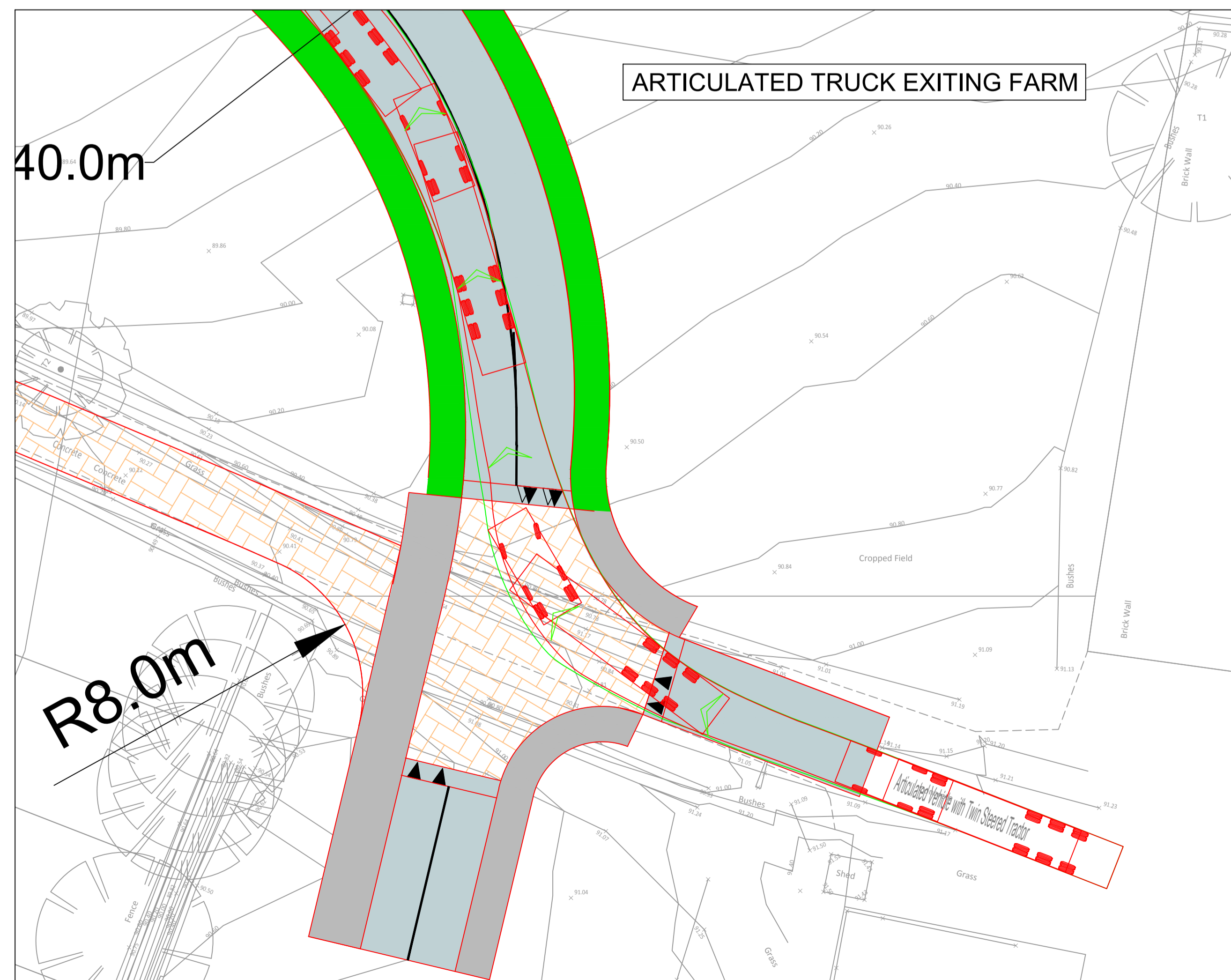
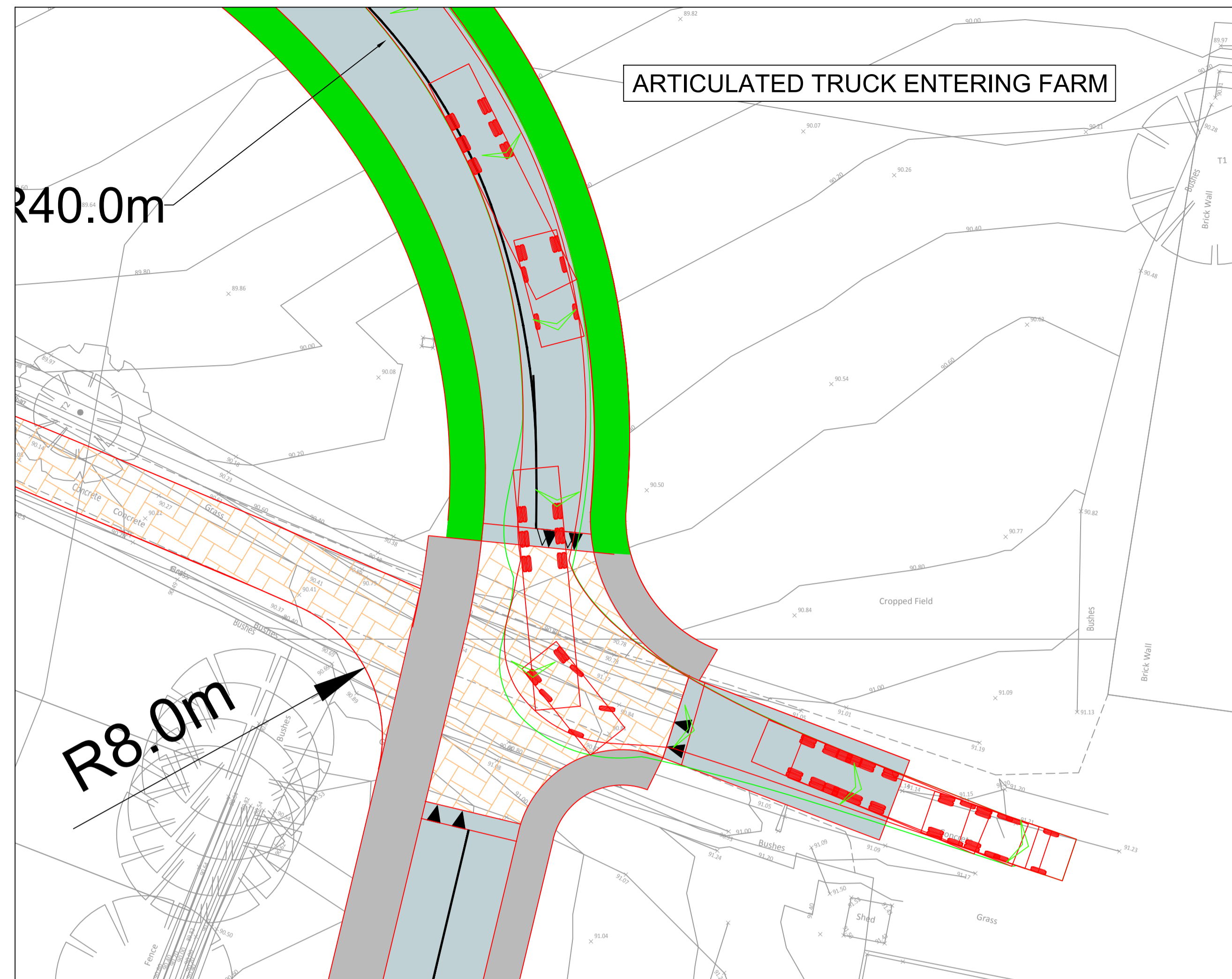
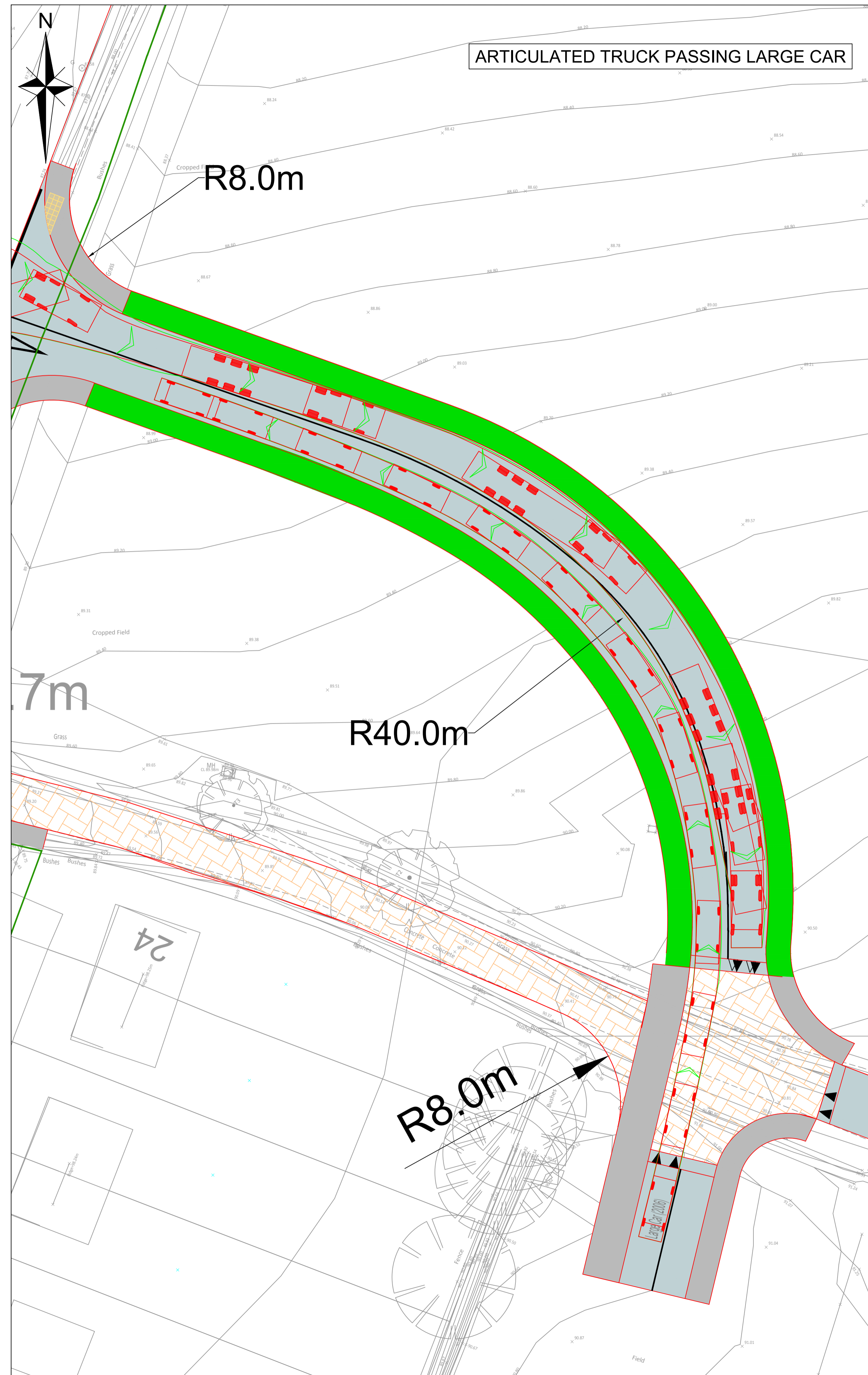
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Land East of High Road, High Cross, Hertfordshire					
DRAWING TITLE					
ARTICULATED TRUCK TRACKING					
CLIENT					
M SCOTT PROPERTIES					

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U321 - PL - SK - 203	-

M:\U321 Sales Firm High Cross HERTSDRAWINGS\AUTOCAD\CURRENT DRGS\U321 - PL - SK - 203 - ARTICULATED TRUCK TRACKING





**KEY**

Articulated Vehicle with Twin Steered Tractor  
 Overall Length 16.500m  
 Overall Width 2.550m  
 Overall Body Height 3.691m  
 Min Body Ground Clearance 0.426m  
 Max Track Width 2.500m  
 Lock to lock time 6.00s  
 Kerb to Kerb Turning Radius 6.987m

**NOTES**

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Land East of High Road, High Cross, Hertfordshire					
DRAWING TITLE					
ARTICULATED TRUCK FARM ACCESS					
CLIENT					
M SCOTT PROPERTIES					

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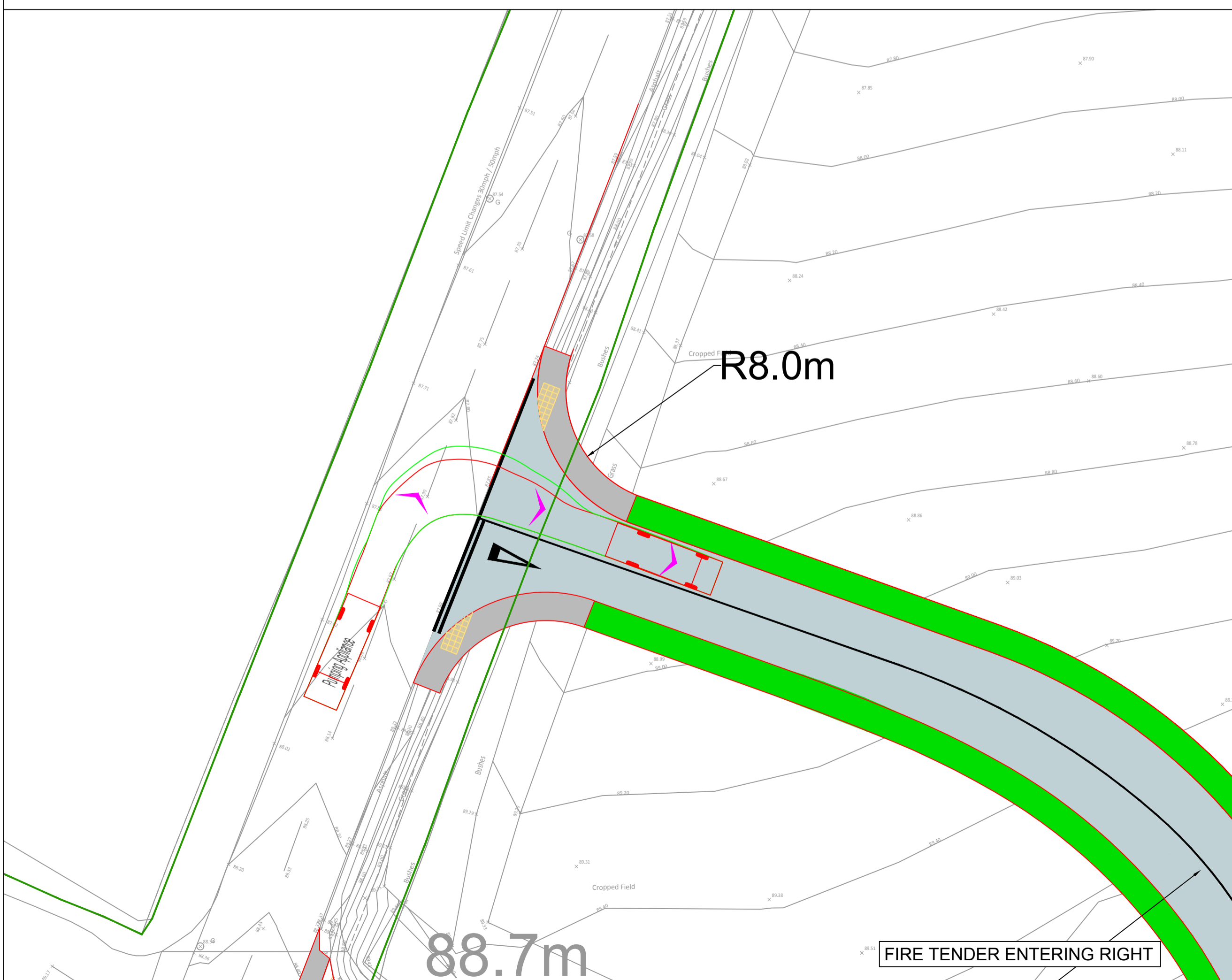
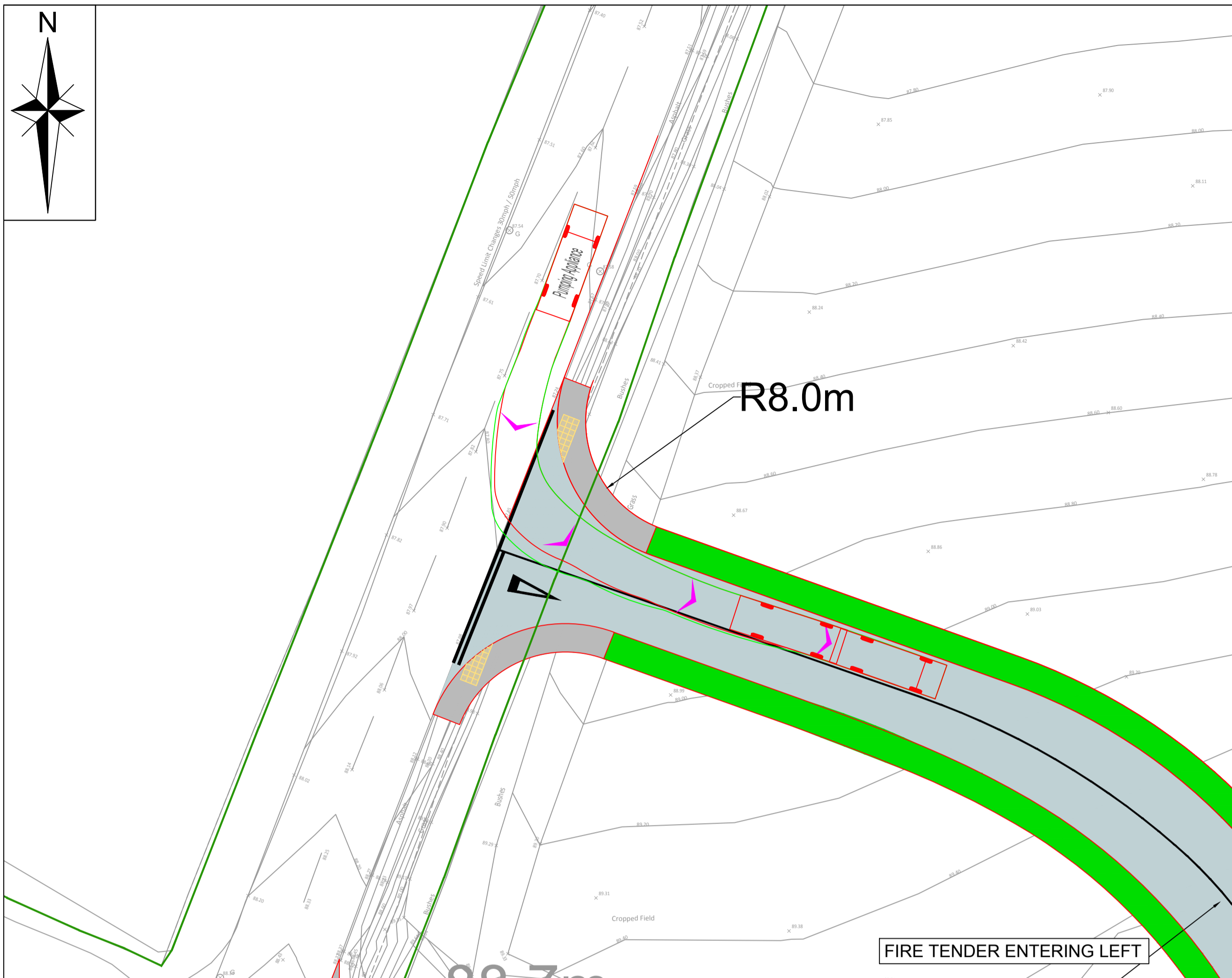
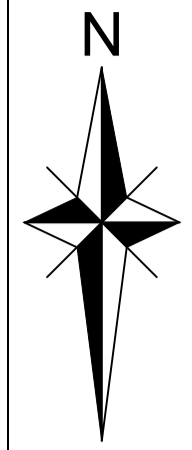
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DRAWING NUMBER  
 U321 - PL - SK - 204

REV.  
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M:\U321 Sales Farm High Cross HERTSDRAWINGS\AUTOCAD\CURRENT DRGS\U321 - PL - SK - 204 - ARTICULATED TRUCK FARM ACCESS TRACKING





KEY	
Pumping Appliance	7.900m
Overall Length	2.500m
Overall Width	3.300m
Min Body Height	0.140m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.750m

NOTES

REV	DESCRIPTION	DE	DR	CH	DATE
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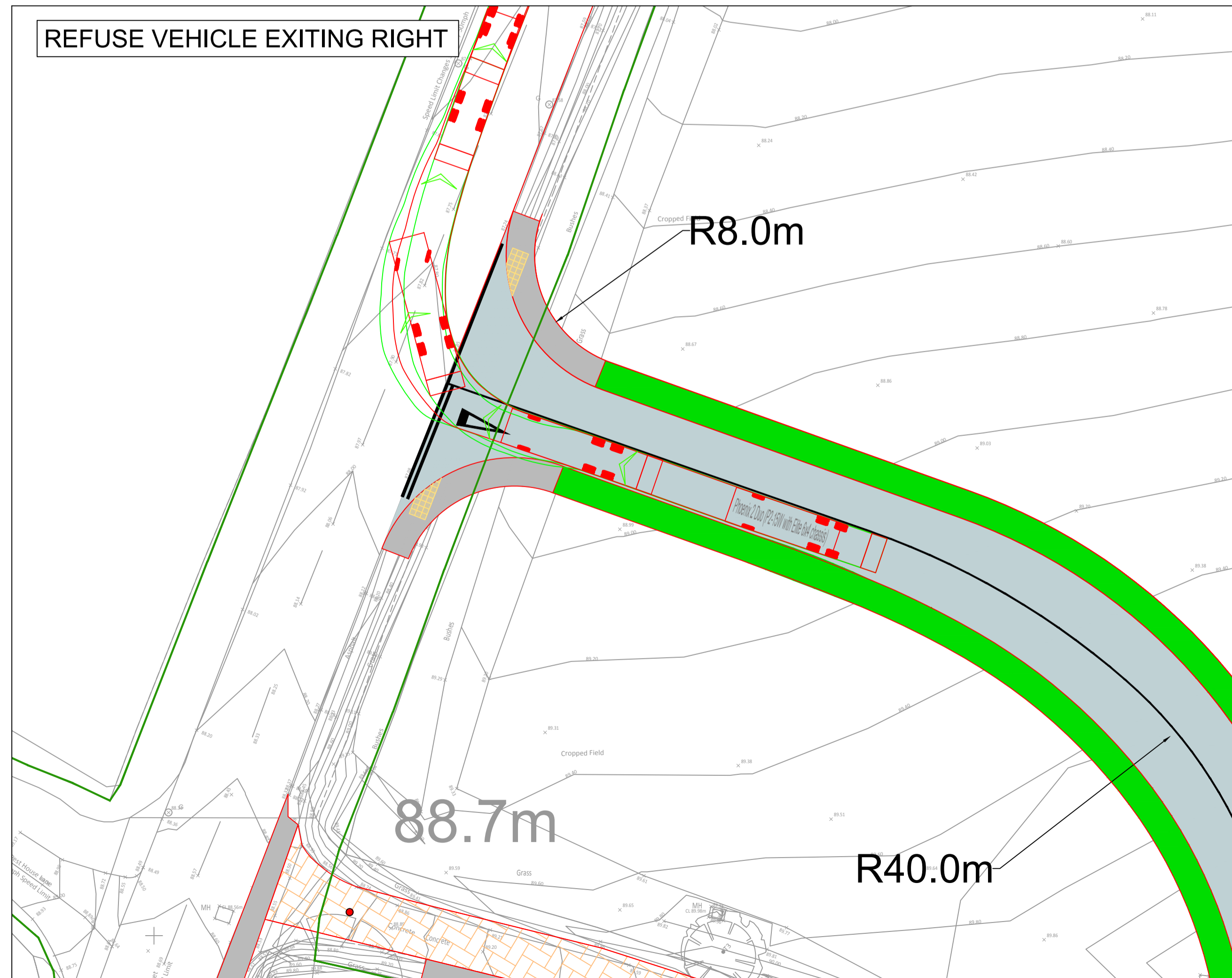
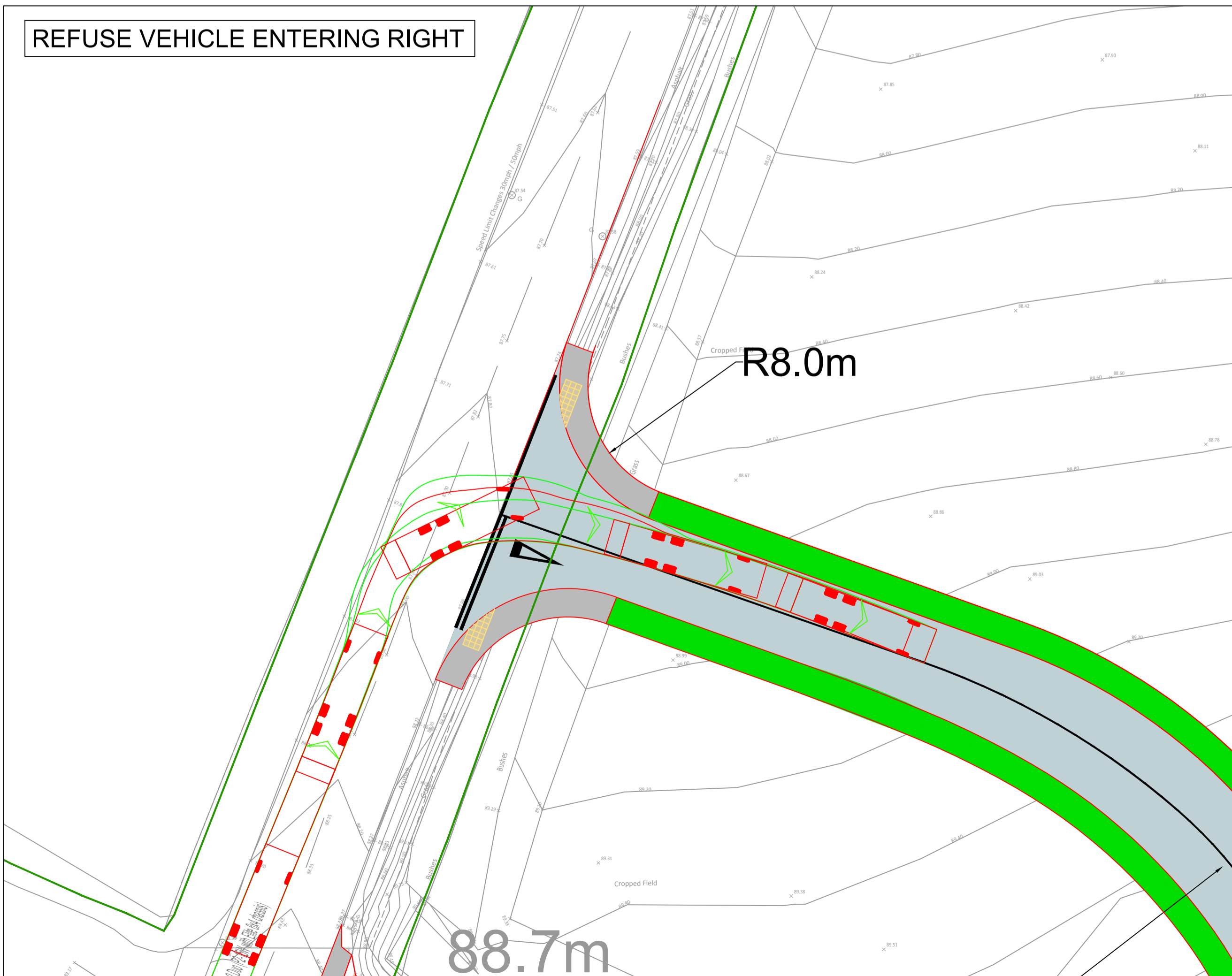
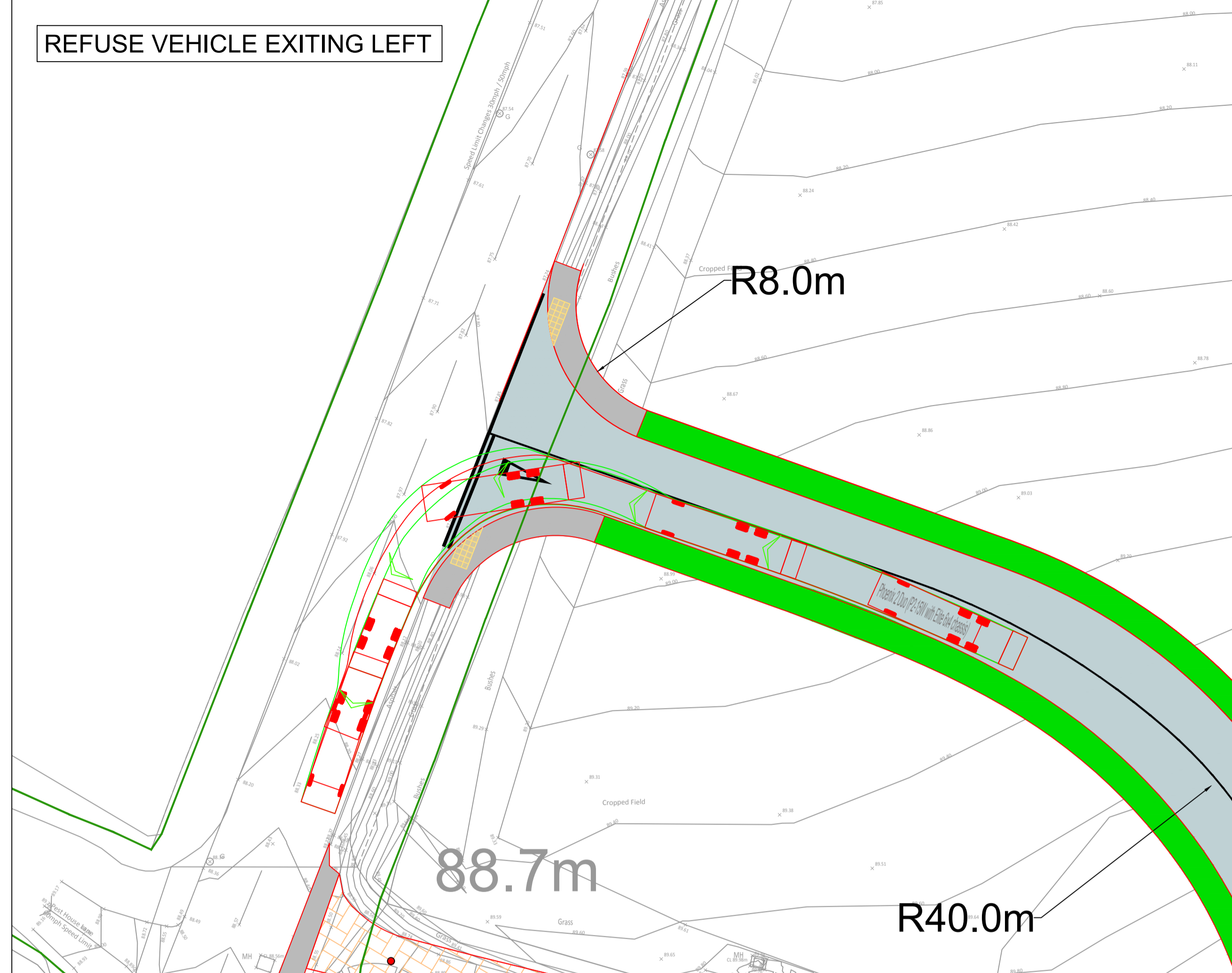
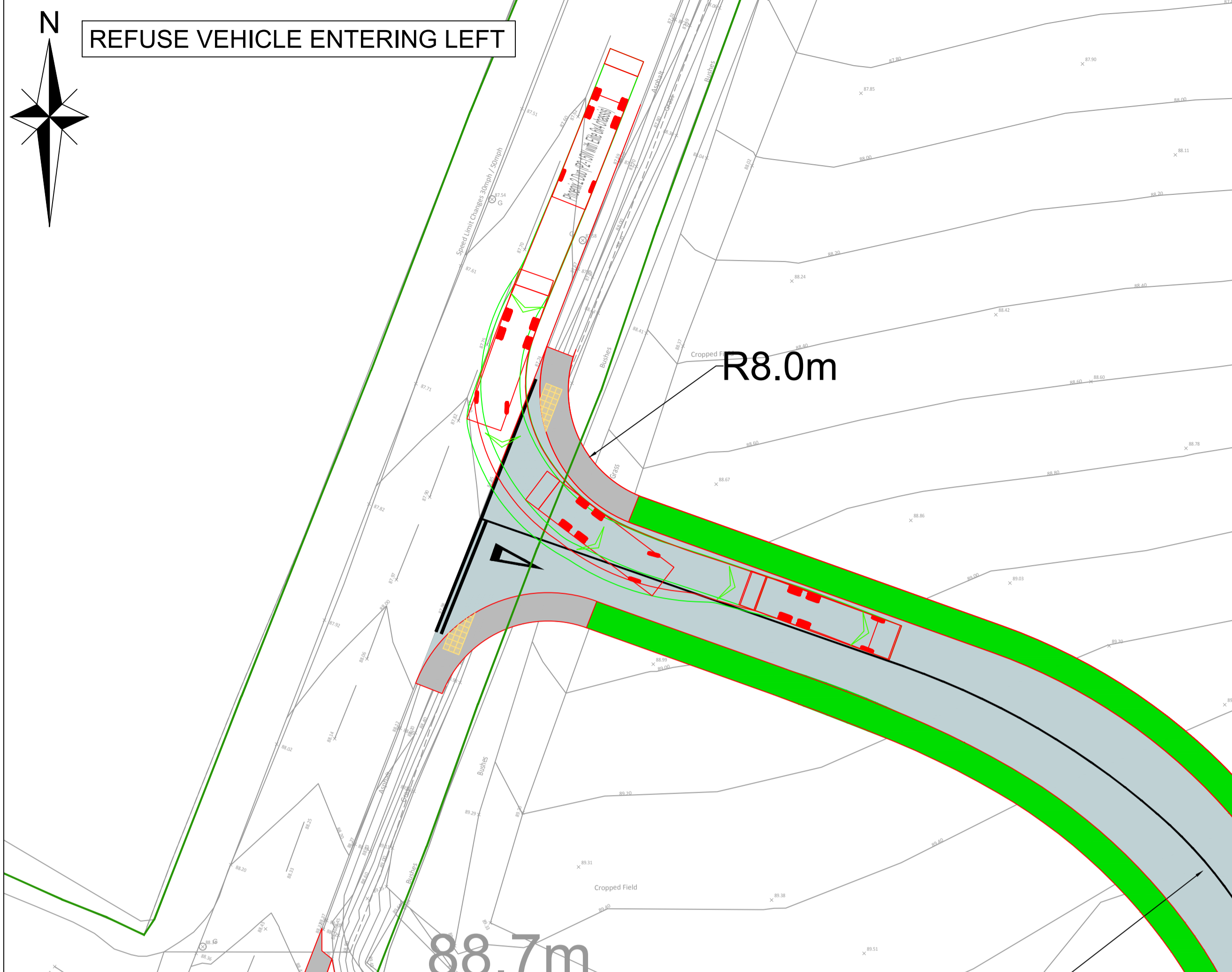
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U321 - PL - SK - 205	-

M:\0321 Sales Firm High Cross HERTSDRAWINGS\AUTOCAD\CURRENT DRGS\U321 - PL - SK - 205 - FIRE TENDER TRACKING





**KEY**

Phoenix 2 Duo (P2-15W with Elite 6x4 chassis) 11.200m  
 Overall Length 2.530m  
 Overall Width 4.815m  
 Overall Body Height 3.751m  
 Min Body Ground Clearance 0.304m  
 Track Width 2.500m  
 Lock to lock time 4.00s  
 Kerb to Kerb Turning Radius 9.500m

**NOTES**

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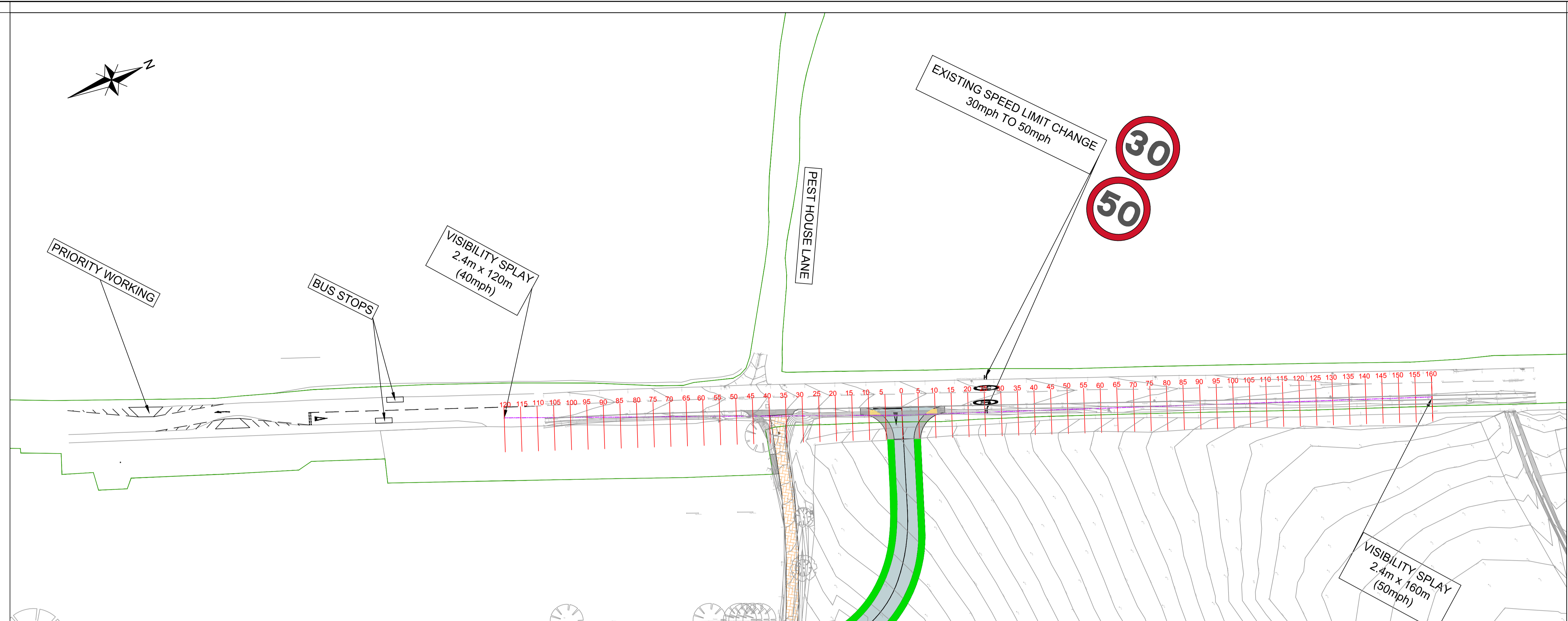
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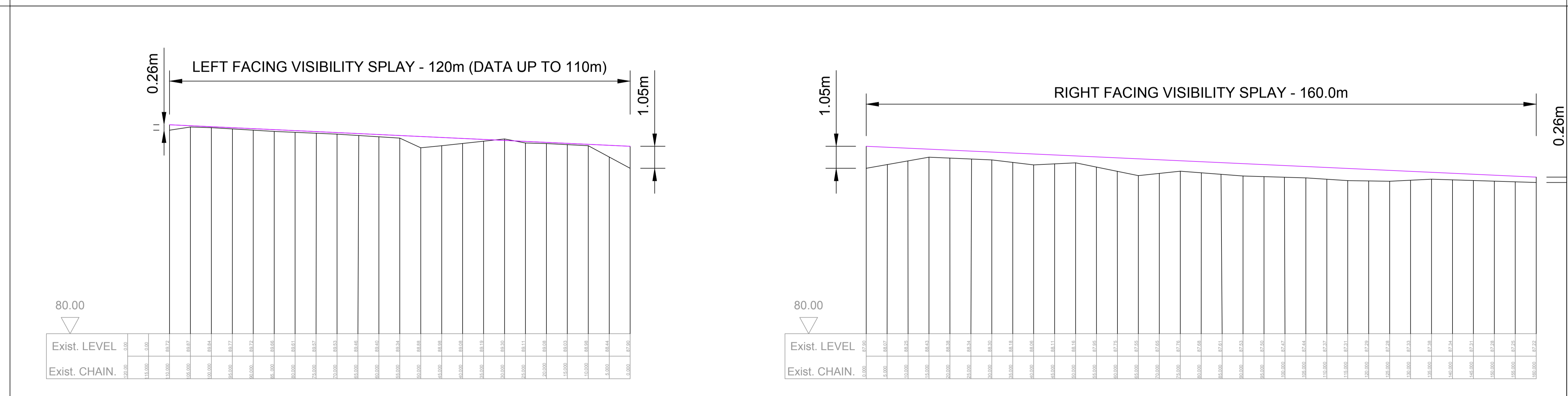




**KEY**

— VISIBILITY SPLAY

**NOTES**



SECTION THROUGH VISIBILITY SPLAYS  
VERTICAL ALIGNMENT SCALED UP BY 5

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Land East of High Road, High Cross, Hertfordshire					

DRAWING TITLE  
SITE ACCESS VISIBILITY SPLAY

CLIENT  
M SCOTT PROPERTIES LTD



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DRAWING NUMBER	REV.
U321 - PL - SK - 208	-

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## **APPENDICES**

<b>Appendix A</b>	Concept Plan
<b>Appendix B</b>	Permitted Sutes Farm Access: Drawing 201307 DWG 006 (Ref 3/16/0246)
<b>Appendix C</b>	PIC Data
<b>Appendix D</b>	Safety Audit / Designers Response
<b>Appendix E</b>	October 2023 Traffic Surveys
<b>Appendix F</b>	November 2023 Traffic Surveys (Resurveyed)
<b>Appendix G</b>	TRICS: Residential Trip Rate
<b>Appendix H</b>	National Census Travel to Work Data
<b>Appendix I</b>	PICADY output files

**Appendix A**    Concept Plan