



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

3

**Appendix 13-E: Access Appraisal
Report**

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Prepared for:

Fosse Green Energy Limited

Prepared by:

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1. Introduction

1.1 Overview

- 1.1.1 This document has been prepared by AECOM on behalf of Fosse Green Energy Limited (the 'Applicant') and provides a technical review and assessment of the Construction, Operation and Emergency access locations for Fosse Green Energy (the 'Proposed Development'), both for the Principal Site and the Cable Corridor which together comprise the Proposed Development.
- 1.1.2 The Proposed Development will comprise the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating facility, with on-site Battery Energy Storage System (BESS) and other associated infrastructure, with a total capacity exceeding 50 megawatts (MW), along with an import and export connection to the national transmission network at the proposed Navenby substation.
- 1.1.3 As the Proposed Development would allow for the generation, storage and export of over 50MW, it is defined as a Nationally Significant Infrastructure Project (NSIP) under Sections 14(1)(a) and 15(2) of the Planning Act 2008, and therefore requires a Development Consent Order (DCO) for its construction, operation, and decommissioning.
- 1.1.4 The Site which the Proposed Development will be delivered is denoted by the solid red line on the drawing included in **Annex A**.

1.2 The Site

- 1.2.1 The Site is located approximately 9 kilometres (km) south and south-west of Lincoln City Centre. For the purposes of this report the Site has been split into three principal areas:
 - a. The land located north of the A46; hereafter referred to as the 'Northern Site'.
 - b. The land south of the A46 and west of the River Witham, hereafter referred to as the 'Western Site'; and
 - c. The land east of the River Witham containing the BESS, hereafter referred to as the 'Cable Corridor.'
- 1.2.2 The Proposed Development lies within the administrative area of North Kesteven, within Lincolnshire County Council, who are also the Local Highway Authority (LHA).

1.3 Purpose and Structure of this Report

- 1.3.1 The purpose of this report is to present the proposed access locations to the Principal Site and the associated the Cable Corridor. These junctions are a

mix of construction, operation or emergency access which would subsequently be progressed for preliminary design and consultation with the Local Highways Authority (LHA).

- 1.3.2 This report presents the outcome of a detailed optioneering process, through which a range of potential access locations have been appraised on matters such as operational safety, environmental impact and interaction with local road users or members of the public.
- 1.3.3 Each junction contained in this report includes a justification for its selection, a screenshot, breakdown of any associated constraints, why other locations were discounted, bell mouth construction impacts, associated visibility impacts, and Swept Path Analysis (SPA) provided for certain access locations where necessary to validate.

2. Access Parameters

2.1 Design Principles

- 2.1.1 The proposed solar sites, the BESS Compound and the Onsite Substation located within the Principal Site have been configured such that each parcel of land would require both a construction access and an operational access. The construction accesses have been designed to accommodate a maximum legal articulated vehicle. The operational and emergency only accesses have been designed to accommodate a DB32 Fire Engine, which is the largest predicted vehicle required during the operation of the Proposed Development in the event of emergency access being required.
- 2.1.2 The bell-mouth designs have been developed utilising the principles contained in the Design Manual for Roads and Bridges (DMRB) Design Standard CD 123 Geometric design of at-grade priority and signal-controlled junctions. This includes for: 6m lane width after the bell-mouth, 15m radii for the entry and exit curves and entry and exit tapers where necessary. Minor variances in these standards are required where SPA is needed to increase the access footprint in order to ensure safe access and egress for construction vehicles.
- 2.1.3 There are two forms of construction access: one for roads with high traffic volumes and one for low traffic volumes. The high traffic design (Type 2) includes both merge and diverge lanes, 2.5 metre (m) wide tapers at 1:10. The low traffic volume junction (Type 1) only has provision for the diverge lane to facilitate safe egress movements where the main carriageway width is reduced. These details can be seen in **Figure 1**.
- 2.1.4 **Figure 1** also provides details of the access footprint that will be utilised for operation and emergency access locations. These are a considerably smaller footprint than the construction access in order to cater for the smaller vehicle sized that are anticipated during operation. These footprints are sized to ensure that emergency vehicles can safely access and egress the site.

- 2.1.5 For the Principal Site, some construction access locations may also function as an operational access point in order to allow for multiple points of entry.
- 2.1.6 In addition to the construction accesses on the Principal Site, there are Cable Corridor junctions. The Cable Corridor extends beyond the principal site and includes the area where cabling will be installed to reach the connection point to the electricity grid. The primary function of Cable Corridor junctions is to provide access for construction vehicles to install the underground cable connectivity to the national electricity transmission system. These junctions have been designed as a Type 1 or 2 junction depending on the traffic volumes (see **Figure 1**). It is anticipated that the construction accesses for the Cable Corridor would be temporary.

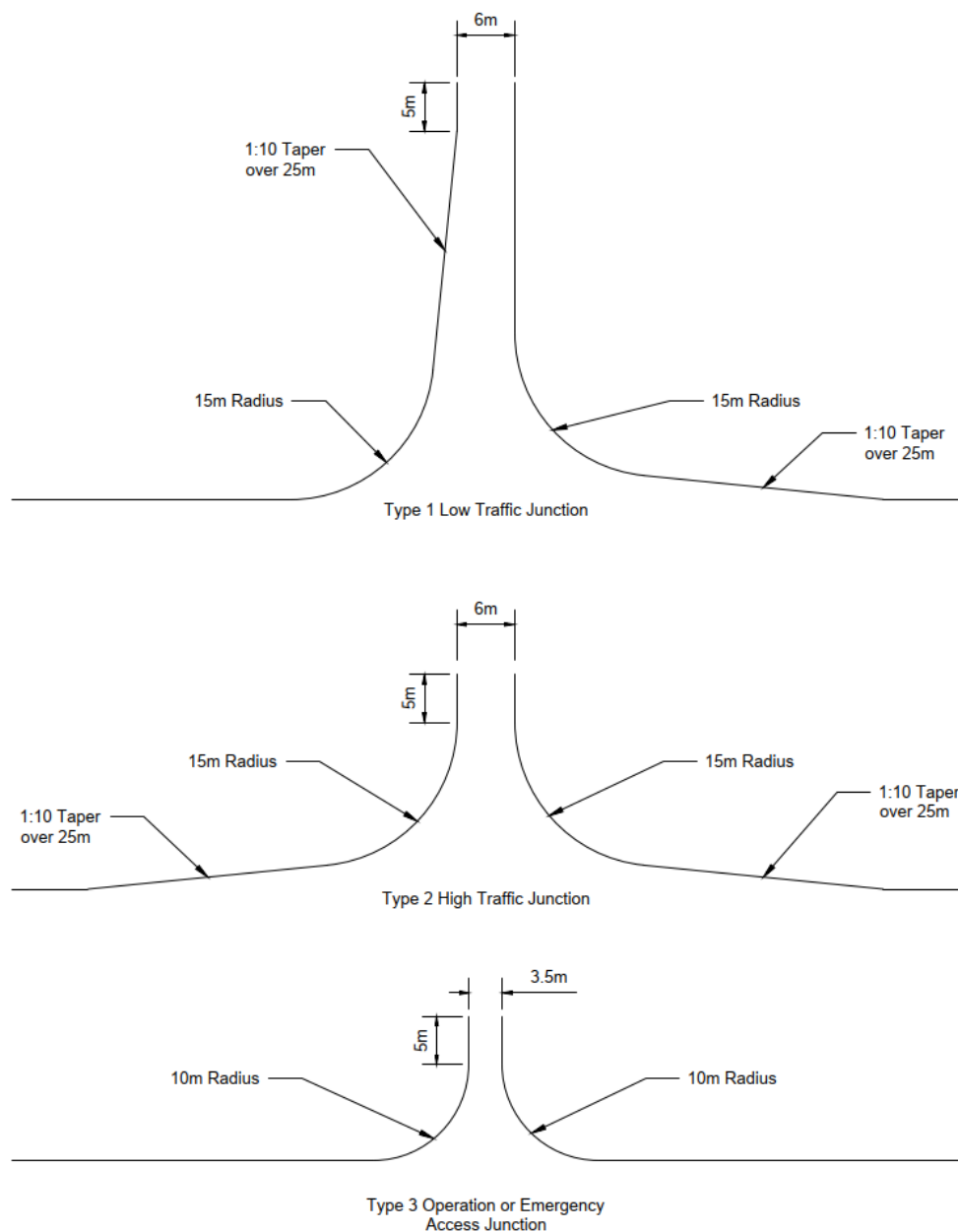


Figure 1: Junction Types

- 2.1.7 DMRB standards, applicable to the strategic or trunk road network have been adopted for the local road network to ensure that each access location has a conservative footprint for the purpose of preliminary design to allow any environmental impacts to be assessed on a proportionate basis.
- 2.1.8 The DMRB standard used to analyse visibility impacts from chosen access locations are in accordance with DMRB CD 109 Table 2.10, for the visibility parameter associated with the existing design speed of the road, and DMRB CD 123 section 3.4, which outlines where this visibility parameter is measured from in relation to the access. The visibility assessment at this stage is primarily based upon horizontal geometry, any vertical alignment constraints which may introduce obstructions to visibility have been noted.
- 2.1.9 Due to a number of the streets in the study area exhibiting a national speed limit traffic regulation order, applying visibility parameters in accordance with DMRB CD 109 could give rise to disproportionate environmental impact. The Applicant has sought to utilise 85th percentile speed survey information to derive Stopping Sight Distances (SSDs) in accordance with The Manual for Streets 2 Section 10.1.6. The Applicant would seek to agree any speed survey derived SSDs with the LHA.
- 2.1.10 In operational phase of the Proposed Development there would be lower traffic numbers and therefore a potential for the size of the access designs to be downgraded, post construction, to discourage misuse and fly-tipping, any provision to downgrade the construction access to suit operational requirements would be subject to agreement with the LHA.
- 2.1.11 SPA would be conducted for all accesses prior to the DCO application submission. At this stage only a select few accesses that required SPA to ensure the feasibility of the access location have been undertaken. For these access locations, the vehicle used would be clearly highlighted and a justification for that vehicle choice noted. The profile of the vehicles assessed in this report can be seen on **Figure 2** and **Figure 3** below.

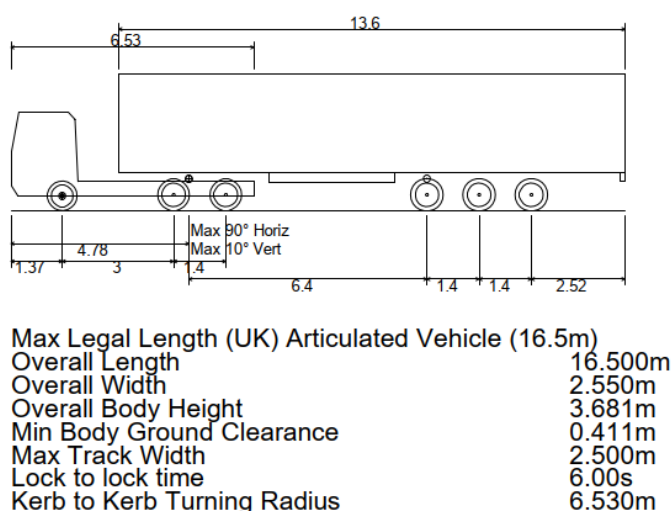
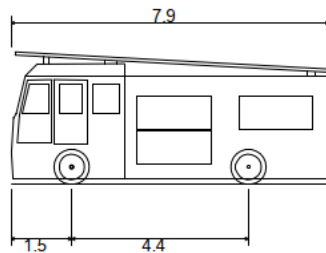


Figure 2: HGV Profile



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

Figure 3: DB32 Fire Engine

2.1.12 The access locations assessed as part of this report are depicted in the drawing in Annex A.

2.2 Public Rights of Way

2.2.1 In order to ensure any impact with Local Public Rights of Ways (PRoW) have been considered, this assessment considers the data contained in the definitive map on the Lincolnshire County Council website. These include Public Footpaths, Public Bridleways, Restricted Byways, and Byways Open to All Traffic (BOAT). This information is presented as part of the **Preliminary Environmental Information (PEI) Report, Volume 2 Figure 2-2: Public Rights of Way** Access Appraisal of Northern Sites

2.3 C-002 Fosse Lane (South)

2.3.1 This construction access has been proposed on Fosse Lane north of the junction with the A46 (Haddington Lane) and would act as one of the principal access locations to the construction works of the Northern Site. To facilitate access for construction, this access location would utilise an existing field access, which would be upgraded to cater for construction traffic. Access across the Northern Site would then be provided via internal connection roads. The indicative junction design can be seen in **Figure 4** below.

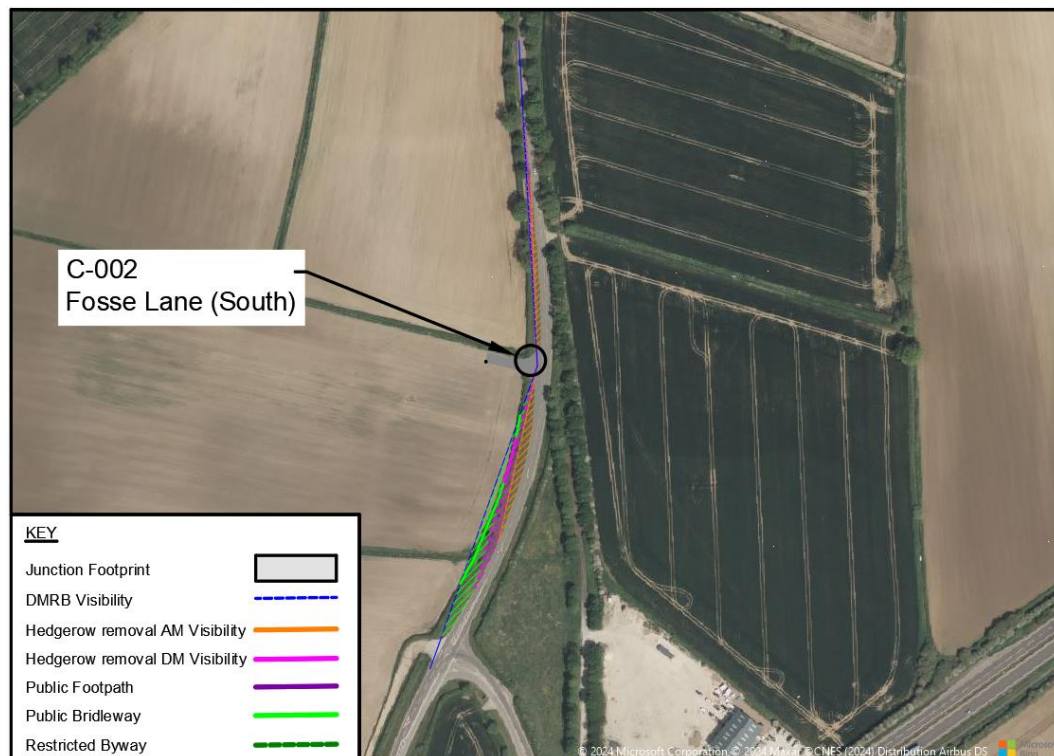


Figure 4: C-002 Fosse Lane (South) Access Location

- 2.3.2 There is an established hedgerow on both sides of existing field access.
- 2.3.3 The speed limit on Fosse Lane is subject to national speed limit and a design speed of 100kph would be adopted. Table 2.10 of CD109 defines a desirable minimum stopping sight distance of 215 metres for a 100kph design speed.
- 2.3.4 A 215 metre visibility splay would result in significant removal of existing vegetation. There are two Category B trees and a Category C tree to the south impacted by both splays.
- 2.3.5 In order to minimise the environmental impact, speed survey information has been obtained at a location approximately 35 metres from the existing access. The 85th percentile speed was recorded at 52.2mph (84kph) northbound and 52.7mph (85kph) southbound. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 161 metres for desirable minimum and 123 metres for absolute minimum.
- 2.3.6 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 133 metres to 31 metres and 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. Environmental assessments are ongoing, and the access locations will be

refined in the event that this additional survey information introduces any additional constraint.

- 2.3.7 The existing field access can be seen in via following url link: [Image of C-002 Access Location](#), which depicts the hedgerow and ditch visible behind the grass verge.
- 2.3.8 It is noted that this section of carriageway is subject to a 7.5 tonne weight restriction (except for access). It is understood that this weight restriction is in effect to limit heavy goods vehicle movements through the village of Thorpe on the Hill. The Applicant would liaise with the Local Highways Authority (LHA) to determine whether any temporary suspension is required in order to facilitate access to Site C-002. It is proposed that access to this site for construction traffic would be restricted to ensure that no construction vehicle traffic passes through the village of Thorpe on the Hill to minimise disturbance of local residents.
- 2.3.9 The access has been designed as a Type 2 high traffic junction in order to cater for the number of construction vehicles that would be required to access and egress this location. The access footprint has been designed to accommodate a Maximum Legal Articulated Vehicle, with SPA showing no issues with turning movements.
- 2.3.10 There are no PRow within the vicinity of this access.
- 2.3.11 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 2.3.12 Access location C-002 has been selected in preference to access O-002 (discussed in further detail in this report) for construction due to access O-002 being situated directly across from the junction of Fosse Lane and Haddington Lane. With the anticipated number of construction vehicles needing to access and egress, it was judged that the utilisation of O-002 as a construction access point could give rise to an increased risk of side swipe or shunt style collisions with other road users navigating the junction. Access C-002 being situated to the east of this junction would minimise the risk of these interactions with the construction access under traffic management control measures.

2.4 C-001 Fosse Lane (North)

- 2.4.1 To facilitate access to a discrete section of the Principal Site, a construction and operation access location has been identified on Fosse Lane, north of the A46 and south of the village of Thorpe on the Hill. This location can be seen in **Figure 5**.

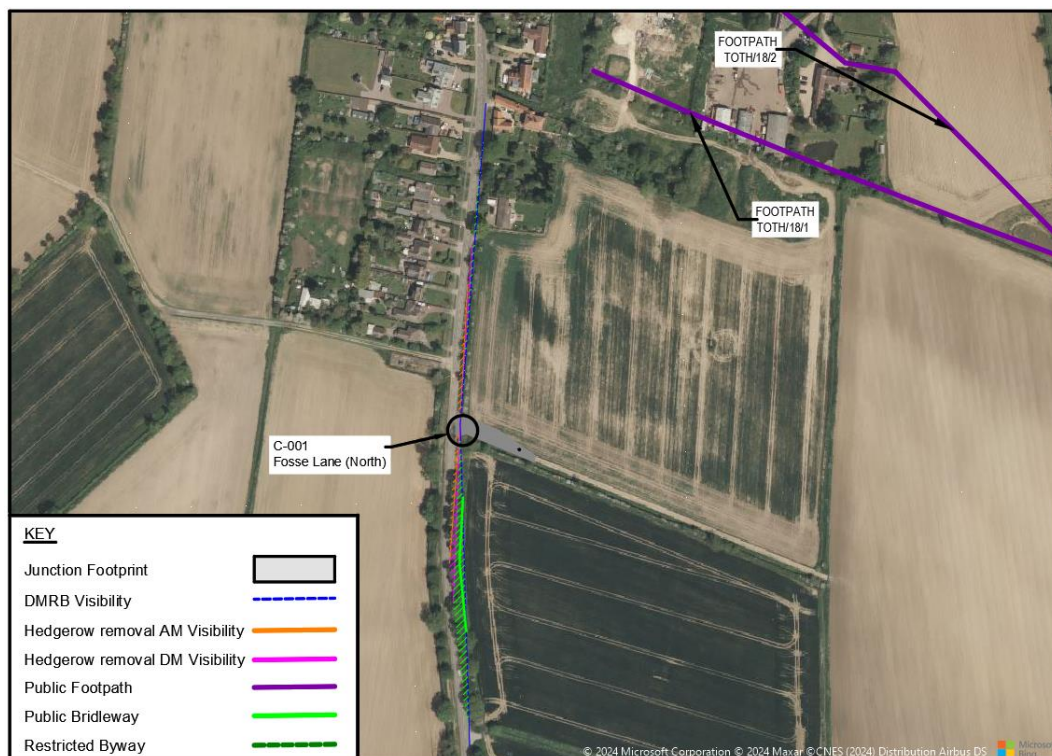


Figure 5: C-001 Fosse Lane (North) Access Location

- 2.4.2 This junction is being proposed to provide access to solar panels being installed to the east of Fosse Lane. These solar panels are remote from the rest of the Northern Site and access C-001 would function as both the construction and operational access. In order to ensure that this access location does not impact existing vegetation to the south and limits encroachment towards the outskirts of Thorpe on the Hill, the access design has introduced limited improvements to an existing established paved access on the basis that this access location would experience far less construction vehicle activity in comparison to other construction access locations.
- 2.4.3 The access proposal presented in **Figure 5** utilises an existing footprint, but is proposed to be widened to the north in order to cater for construction vehicles access and avoid encroachment into root protection areas to the south of the access. This access proposal has been widened to facilitate two construction vehicles being able to safely pass to minimise disruption to the local road network.
- 2.4.4 The speed limit on Fosse Lane is subject to national speed limit and a design speed of 100kph would be adopted. Table 2.10 of CD109 defines a desirable minimum stopping sight distance of 215 metres for a 100kph design speed.
- 2.4.5 However, C-001 is located approximately 50 metres south of the 30mph speed restriction for the village of Thorpe on the Hill. With the introduction of construction vehicles in the vicinity of Thrope on the Hill, the Applicant

proposes to liaise with the LHA to investigate the applicability of a temporary speed limit to extend the 30mph speed limit south of the access proposal in order to minimise the risk of construction vehicle access and egress interacting with high-speed traffic.

- 2.4.6 With C-001 being located close to the transition point between 30mph and national speed limit restrictions, a speed survey was commissioned. From these results, the 85th percentile vehicle speeds were recorded as 40.7mph (66kph) for northbound traffic and 44.1mph (71kph) for southbound traffic. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 119 metres for desirable minimum and 93 metres for absolute minimum.
- 2.4.7 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 90 metres to 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 2.4.8 There are no PRoW within the vicinity of this access location.
- 2.4.9 Constraints for this access include back of verge hedgerow and the presence of established trees on the field edge boundary. However, by applying the 85th speed survey visibility splays, the Applicant would seek to minimise the extent of hedgerow removal required subject to approval from the LHA. Due to the limited access improvements in this location, it is recommended that any egress movements are undertaken under traffic management control measures.
- 2.4.10 It is noted that this section of carriageway is subject to a 7.5 tonne weight restriction (except for access). It is understood that this weight restriction is in effect to limit heavy goods vehicle movements through the village of Thorpe on the Hill. The Applicant would liaise with the LHA to determine whether any temporary suspension is required in order to facilitate access to access C-001. It is proposed that access to this site for construction traffic would be restricted to ensure that no construction vehicle traffic passes through the village of Thorpe on the Hill to minimise disturbance of local residents.
- 2.4.11 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access, including assessment of vertical clearances.
- 2.4.12 Access C-001 has been selected as the preferred location for construction and operational access to the land east of Fosse Lane. Another field access was assessed to the south of access C-001, however this access was

discounted on the basis that access C-001 can utilise an existing surfaced track to access the land required.

2.5 C-004 The Avenue

- 2.5.1 This junction is located on the Avenue and is proposed to provide access to the western side of the Northern Site from Halfway House Roundabout. The Applicant would develop the design of the access during preliminary design in order to allow construction traffic associated with the construction of the Principal Site. This location can be seen in **Figure 6**.
- 2.5.2 The Avenue provides the only means of access to several properties situated to the north, as well as several field accesses, some of which are part of the Proposed Development and some which would reside outside the Site Boundary.
- 2.5.3 Due to the Avenue being the sole access point for residents and the carriageway being single track in nature, the Applicant has sought to review the access strategy and implement an access location which minimises the extents over which construction vehicles would need to interact with other users. Access C-004 has been selected to minimise the risk of construction vehicle interaction with other road users and minimise the need to implement an extensive passing place strategy which would introduce further disruption and works to the area.

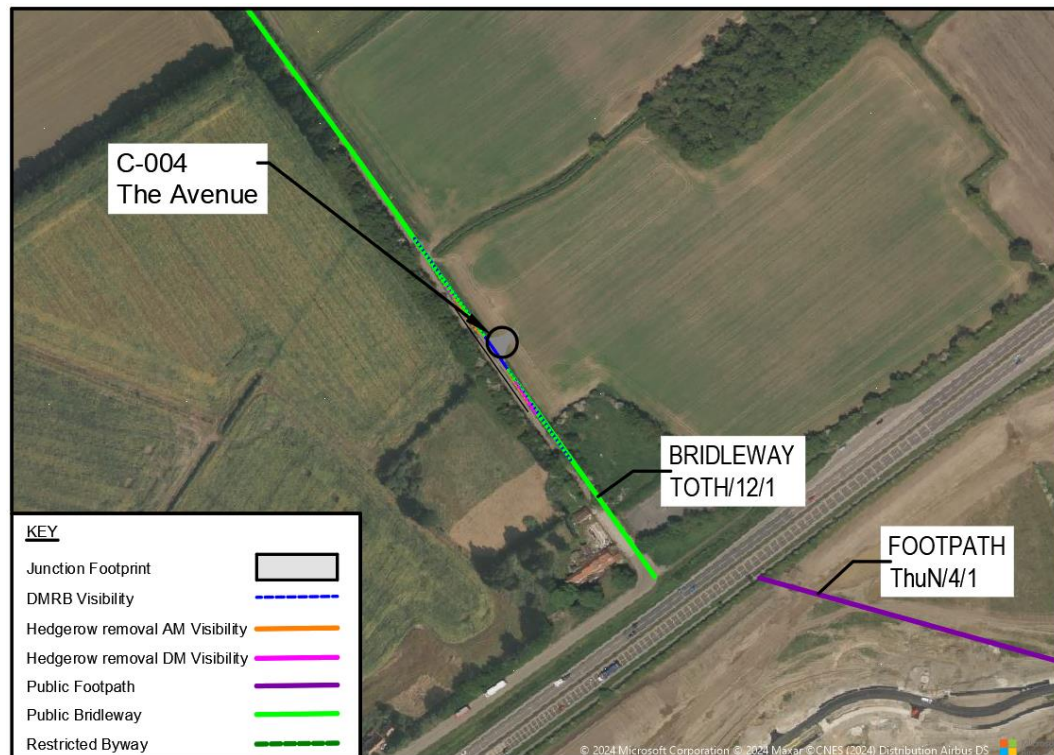


Figure 6: C-004 The Avenue Access Location

- 2.5.4 From observations of the Streetview imagery in the desktop study there is no evidence, in the form of signage or street lighting, that a speed restriction is in force along the Avenue. Therefore, it must be assumed that The Avenue is subject to national speed limit. Due to the rural and narrow characteristics of the Avenue, the speed that roads users navigate this road are considerably less. Speed data recorded on the publicly accessible section of The Avenue that runs alongside the A46 supports this assumption.
- 2.5.5 From these results, the 85th percentile vehicle speeds were recorded as 24.9mph (40kph) for northbound traffic and 26.2mph (42kph) for southbound traffic. Utilising the southbound as the worst case recorded average speed, this would equate to SSD visibility splays of 52 metres for desirable minimum and 43 metres for absolute minimum.
- 2.5.6 These reduced SSDs based on road users actual speed for this section of road show the potential for reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 75 metres to 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 2.5.7 The access bell-mouth has been designed to accommodate a Maximum Legal Articulated Vehicle, with SPA showing no issues with turning movements, as a Type 2 high traffic junction in order to cater for the number of construction vehicles that would be required to access and egress this location.
- 2.5.8 The access proposal presented, exceeds the footprint of the existing access so there would be a small amount of hedgerow clearance to facilitate the access proposal's footprint.
- 2.5.9 These reduced SSDs based on road users actual speed show the potential for reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 75 metres through the application of the DMRB SSDs to 0 metres through the application of desirable minimum and absolute minimum SSDs. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 2.5.10 One of the principal constraints that has been identified is that the entire length of The Avenue and Morton Lane is designated on **PEI Report Volume 2 Figure 2-2** as a bridleway (TOTH/12/1). Access C-004 will therefore minimise the overall distance where construction vehicles would interact with PRow users.

- 2.5.11 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 2.5.12 Due to the carriageway width and the presence of Bridleway TOTH/12/1, the Applicant has selected access C-004 over other locations on the Avenue in order to minimise the journey distance and time over which construction vehicles may interact with road users. All other access locations appraised would increase the magnitude of this interaction, likely require the implementation of passing places and these options were discounted for construction use.

2.6 E-001 Morton Lane

- 2.6.1 Access E-001 was originally proposed to function as an operational access to the Principal Site. However, due to the constraints outlined for access C-004, this option has not been taken forwards. It would still be necessary to ensure that emergency vehicles have a number of readily accessible locations to access the Principal Site in the event of an emergency. It is proposed that this location is retained as an emergency vehicle only access point. This access would not be utilised for other operational requirements, with operational access points provided elsewhere and outlined in Annex A.
- 2.6.2 The location of access E-001 is shown below in **Figure 7** below.

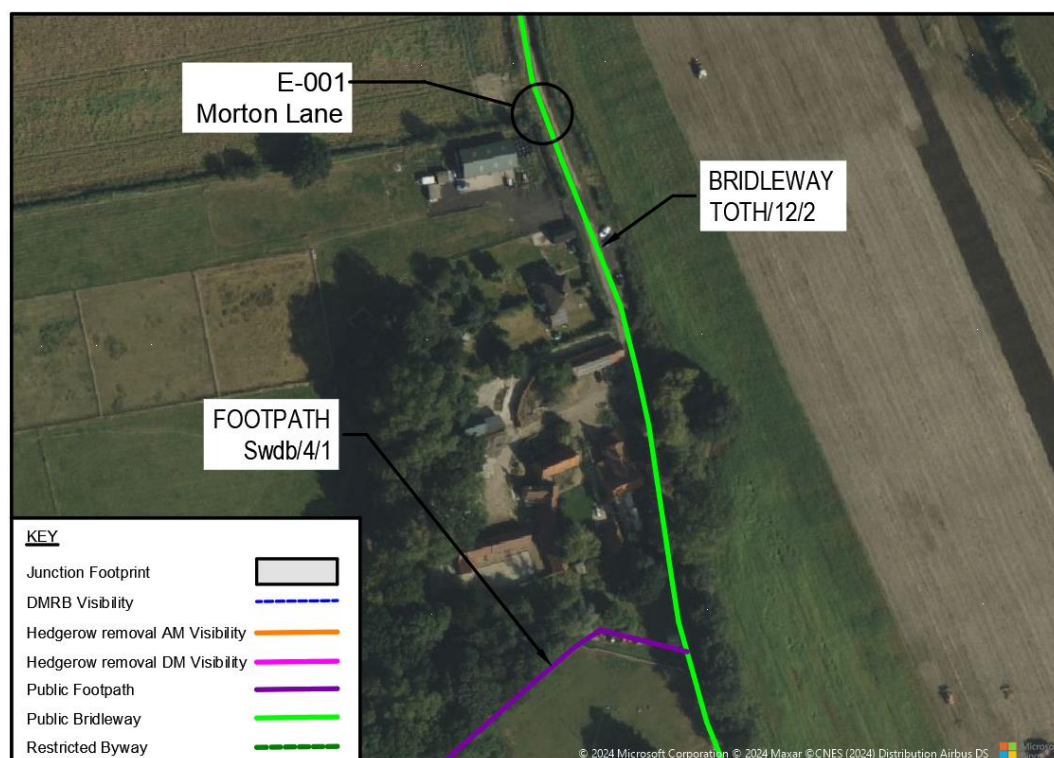


Figure 7: E-001 Morton Lane Access Location

- 2.6.3 Due to the access location functioning as the terminus point of Morton Lane, no junction improvements would be required.

2.7 O-001 Clay Lane (Track)

- 2.7.1 Located on a track off Lincoln Lane in Thorpe on the Hill, this junction has been designed as a Type 3 operational access only and would not be utilised during construction. With operational access typically requiring either a car or van sized vehicle, the access has been sized on the basis of a DB32 Fire Engine in order to cater for any emergency access required. The layout of the junction can be seen in **Figure 8** below.

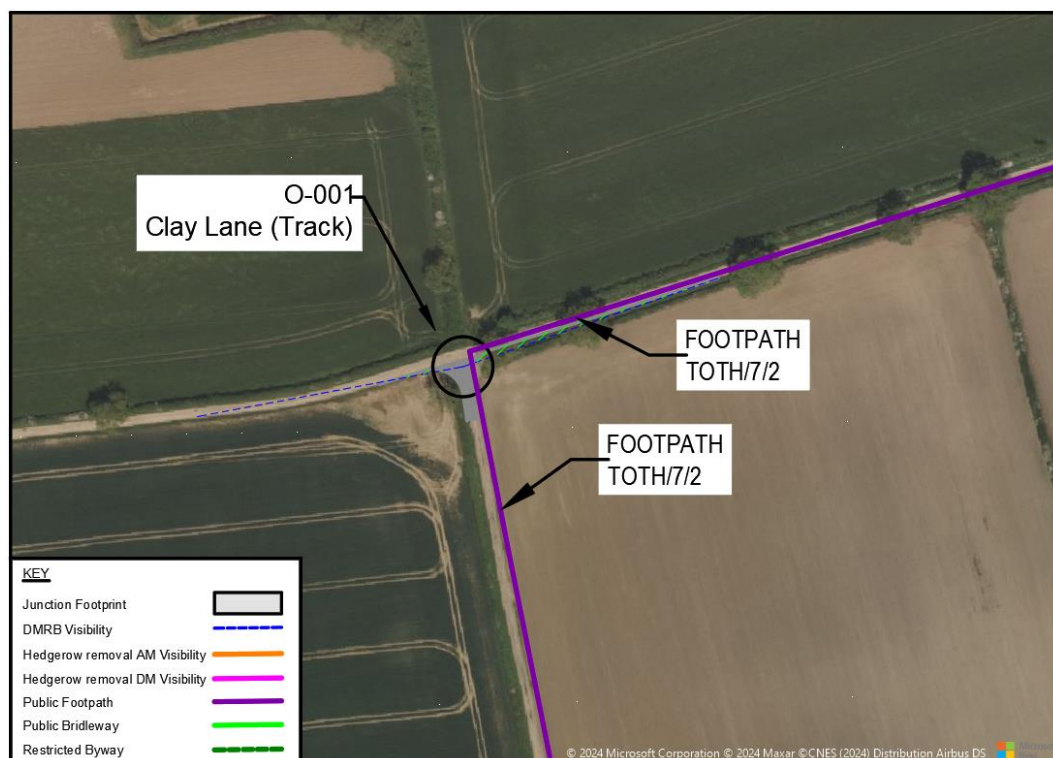


Figure 8: O-001 Clay Lane (Track) Access Location

- 2.7.2 This track provides access to Scotland Farm and is a private road passing through Home Farm from its junction with Station Road in Thorpe on the Hill. This route is shown on the Ordnance Survey and **PEI Report Volume 2 Figure 2-2** as footpath (TOTH/7/2) as shown in **Figure 9** below. With any operational vehicles having to interact with public right of way and agricultural vehicles, it is recommended that the majority of operational vehicles utilise operational access O-002 to limit any interaction and vehicles give way to pedestrians.



Figure 9: O-001 Clay Lane PRoW

- 2.7.3 From Access O-001, footpath TOTH/7/2 continues south along this track and any operational vehicles would need to give way to PRoW users.
- 2.7.4 In the vicinity of the access location, there is a gap in the hedgerow for the existing field access. In order to cater for the junction improvements to accommodate the vehicle movements noted above, two Category B trees would be directly impacted. It is estimated that 5 metres of hedgerow would require removal to construct the bell-mouth.
- 2.7.5 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 2.7.6 Access O-001 was selected in preference to other existing field access points to northern boundary of the site due to the location being able to utilise the existing track that follows the alignment of footpath TOTH/7/2, which would minimise the subsequent environmental impact of introducing additional internal carriageways to access the Principal Site.

2.8 O-002 Fosse Lane

- 2.8.1 This operational access is located on Fosse Lane and is situated at an existing surfaced field access with give way markings as can be seen in **Figure 10** below.

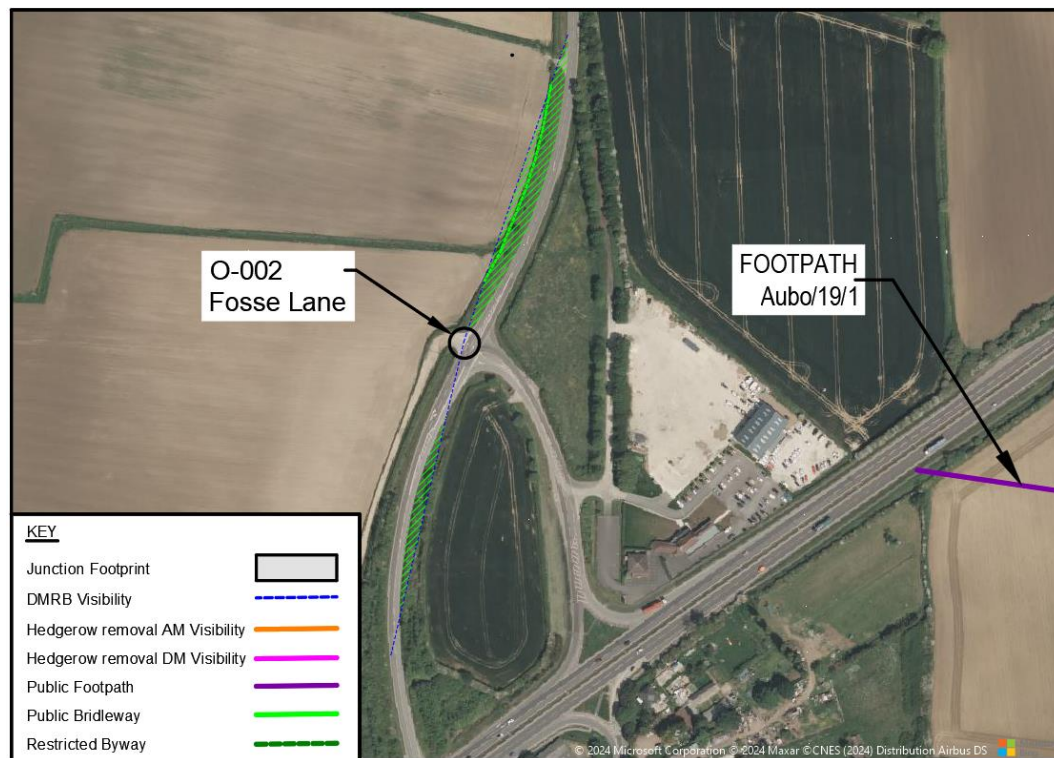


Figure 10: O-002 Fosse Lane Access Location

- 2.8.2 This existing access is considered sufficient for use by the DB32 Fire Engine design vehicle. No further works are required and due to this being a formalised access off the local road network, it is recommended that this is the primary operational access to the north site post construction.
- 2.8.3 As reported in the narrative of Section 3.1 for access C-002, this access was appraised as a construction access for the Principal Site. Due to being positioned immediately adjacent to the junction of Fosse Lane and Haddington Lane off the A46, it was not considered appropriate for the number of construction and heavy goods vehicles that would be required during the construction phase. The Applicant believes that this access location would be appropriate for the purposes of operating the Principal Site due to the lower frequency of access required.
- 2.8.4 There are no PRow within the vicinity of this access.
- 2.8.5 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.

3. Access Appraisal of Western Sites

3.1 C-003 Haddington Lane (North)

- 3.1.1 This junction on Haddington Lane is situated 160 metres south of the junction with Sky Lane and can be seen in **Figure 11** below.

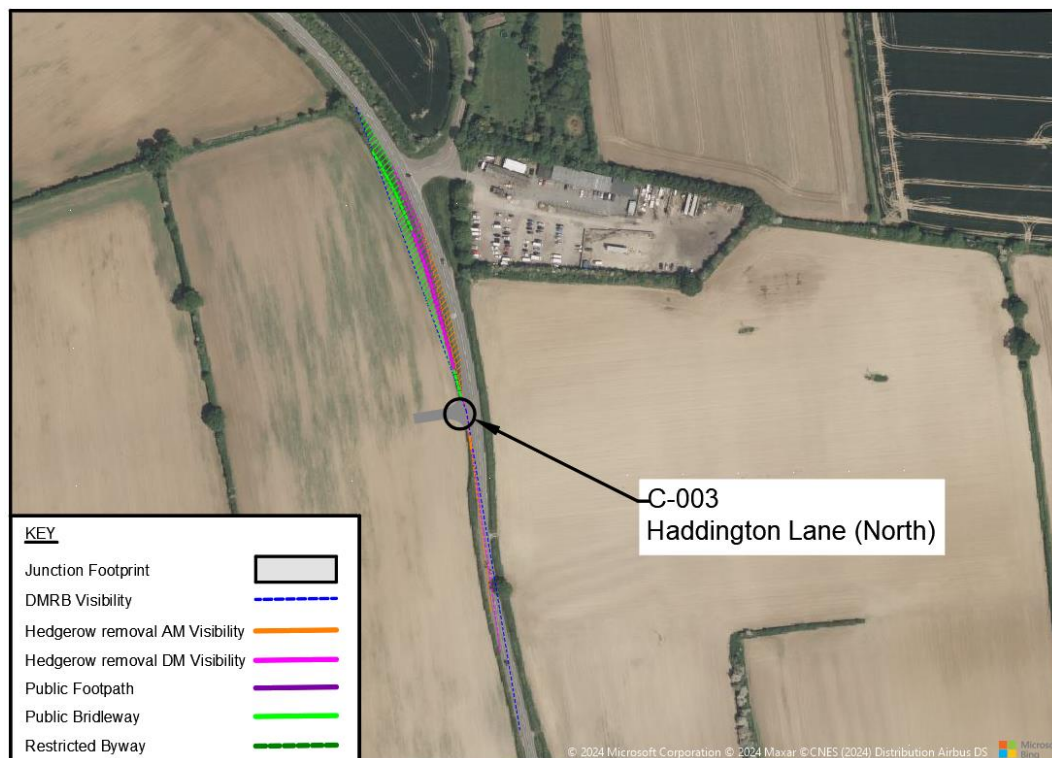


Figure 11: C-003 Haddington Lane (North) Access Location

- 3.1.2 The existing Haddington Lane is approximately 6.5 metres wide with centre line markings and is appropriate to accommodate construction vehicle traffic.
- 3.1.3 The access has been designed as a Type 2 high traffic junction in order to cater for the number of construction vehicles that would be required to access and egress this location. The access footprint has been designed to accommodate a Maximum Legal Articulated Vehicle, with SPA showing no issues with turning movements.
- 3.1.4 The national speed limit applies to this section of Haddington Lane. A vehicle speed survey was conducted approximately 50 metres to the south of this location.
- 3.1.5 From these results, the 85th percentile vehicle speeds were recorded as 53mph (85kph) for northbound traffic and 57.6mph (93kph) for southbound traffic. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 187 metres for desirable minimum and 142 metres for absolute minimum.

- 3.1.6 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 266 metres to 90 metres and 20 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.1.7 Haddington Lane in the immediate vicinity of this area is subject to a number of horizontal curves and changes to elevation, therefore this access location has also been selected in order to ensure that restrictions to visibility through the horizontal and vertical alignment are minimised. This would ensure that access and egress movements can be completed safely.
- 3.1.8 There are no PRoW within the vicinity of this access.
- 3.1.9 No other statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access, including assessment of vertical clearances.
- 3.1.10 Access C-003 was selected off Haddington Lane over other locations appraised due to the horizontal and vertical alignment of the carriageway and the presence of an existing overhead power cable crossing Haddington Lane approximately 200 metres south of this access C-003. Access C-003 has been selected in preference of other existing field access locations in order to minimise the number of construction vehicle movements having to navigate underneath this asset, other locations resulting in greater adverse environmental effects associated with the horizontal alignment or adverse visibility associated with the vertical alignment of the carriageway.

3.2 C-005 Stone Lane

- 3.2.1 This pair of junction locations situated on Stone Lane was identified by the Applicant to link separate parcels of the Western Site which are segregated by Stone Lane. The location can be seen in **Figure 12**.

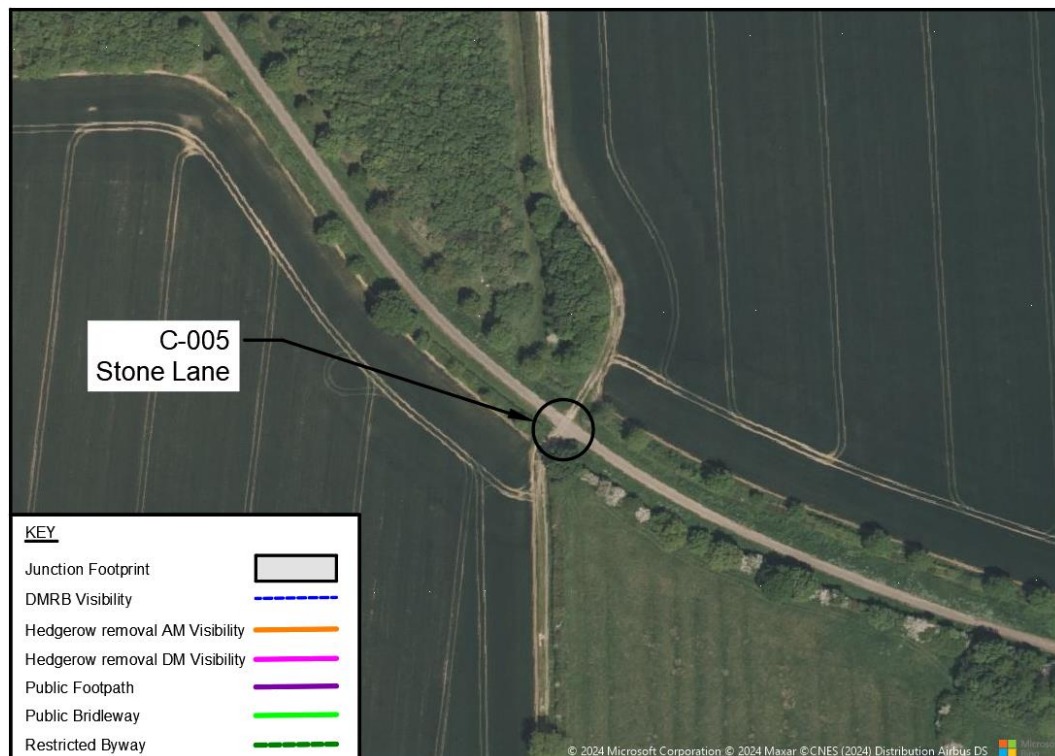


Figure 12: C-005 Stone Lane Access Location

- 3.2.2 These two junctions would form a crossroads with the existing Stone Lane for construction vehicles to cross. Stone Lane is a cycle track at this location and is not visible from Street View. The start of the cycle track, just east of High Walks Farm, can be seen in Street View using the following url link: [View of Stone Road where road closure in force](#), which joins a cycle facility that runs parallel to the A46 to the north.
- 3.2.3 With construction vehicle movements being limited to crossing Stone Lane at the location of access C-005, it is not proposed that any junction upgrades are required. To ensure the safe interaction of construction traffic and users of Stone Lane, it is recommended that this location is operated under traffic management control measures.
- 3.2.4 Traffic signage would be needed on the cycle lane approaches to the crossing warning of construction traffic crossing ahead and to wait for the green light/go board. Consideration was given to automated control, but it was considered that a manually operated crossing would be the safest option rather than taking a risk that cyclists would not ignore any automated control measures. To minimise disturbance to local road users of the cycle track, it is proposed that construction vehicles would give way to users of Stone Lane.
- 3.2.5 No statutory undertaker assets have been identified at this stage. With no improvement works being required at this location, it is anticipated any interaction with buried services would be limited to protection measures.

3.3 C-006 Haddington Lane (East)

- 3.3.1 The location for the proposed construction access east off Haddington Lane has been identified on a relatively straight section of road, to the north of the village of Thurlby and can be seen in **Figure 13** below. This construction access is the only access to land to the east of Haddington Lane at this location, which would also border the corridor where cables would connect the various solar sites to the Battery Energy Infrastructure sited off Bassingham Road.

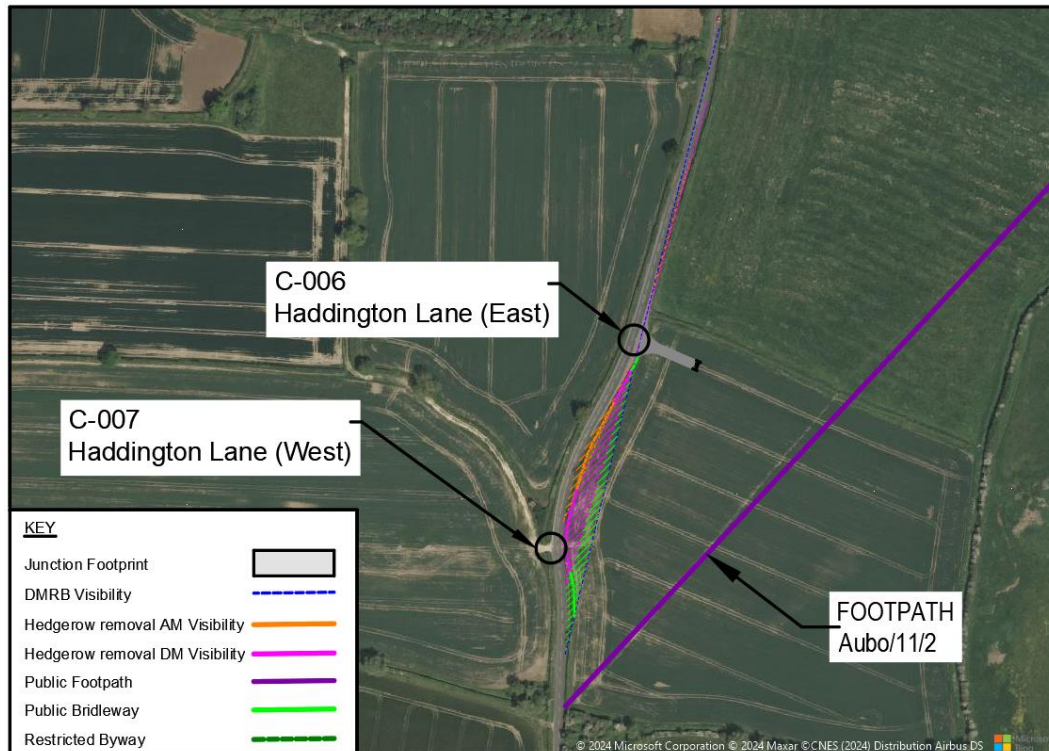


Figure 13: C-006 Haddington Lane (East) Access Location

- 3.3.2 This access location is identified as being the most optimal due the alignment of the carriageway limiting any impact on existing vegetation bordering the access.
- 3.3.3 The access has been designed as a Type 2 high traffic junction. The proposal presented in **Figure 13** utilises an existing footprint, but the bell mouth proposal, designed in accordance with CD123, exceeds the footprint of the existing access so there would be a small amount of hedgerow clearance to facilitate the access proposal's footprint.
- 3.3.4 The design vehicle for access C-006 is a maximum legal articulated vehicle. Due to the limited access improvements in this location, it is recommended that any egress movements are undertaken under traffic management control measures.

- 3.3.5 The national speed limit applies on this section of Haddington Lane, therefore to ensure that visibility splay parameters were proportionate and not designed to introduce significant adverse environmental effects, speed survey data was commissioned. Northbound traffic was recorded at 54.8mph (88kph) and southbound traffic at 53.4mph (86kph).
- 3.3.6 From these results, the 85th percentile vehicle speeds were recorded as 54.8mph (88kph) for northbound traffic and 53.4mph (86kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 172 metres for desirable minimum and 131 metres for absolute minimum.
- 3.3.7 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 184 metres to 143 metres and 63 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.3.8 There is a PRow footpath Aubo/11/2 that passes through the south-eastern section of the site approximately 160 metres south of this junction location, it is not anticipated that the construction of this access would impact the use of this PRow. Footpath Aubo/11/2 is shown as the purple line shown in **Figure 13** running diagonally south-west to north-east.
- 3.3.9 Overhead cables cross Haddington Lane to the north of the junction with a wooden pole located in an adjacent field to the north. Construction works would need to consider protection measures in order to reduce the risk of interaction with the overhead infrastructure. No other statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.3.10 Due to the limited options for access off Haddington Lane in this location, no other access locations were considered.

3.4 C-007 Haddington Lane (West)

- 3.4.1 The location for the access west off Haddington Lane has been identified on the outside of a bend, utilising an existing field access, to the north of the village of Thurlby. This location can be seen in **Figure 14**.

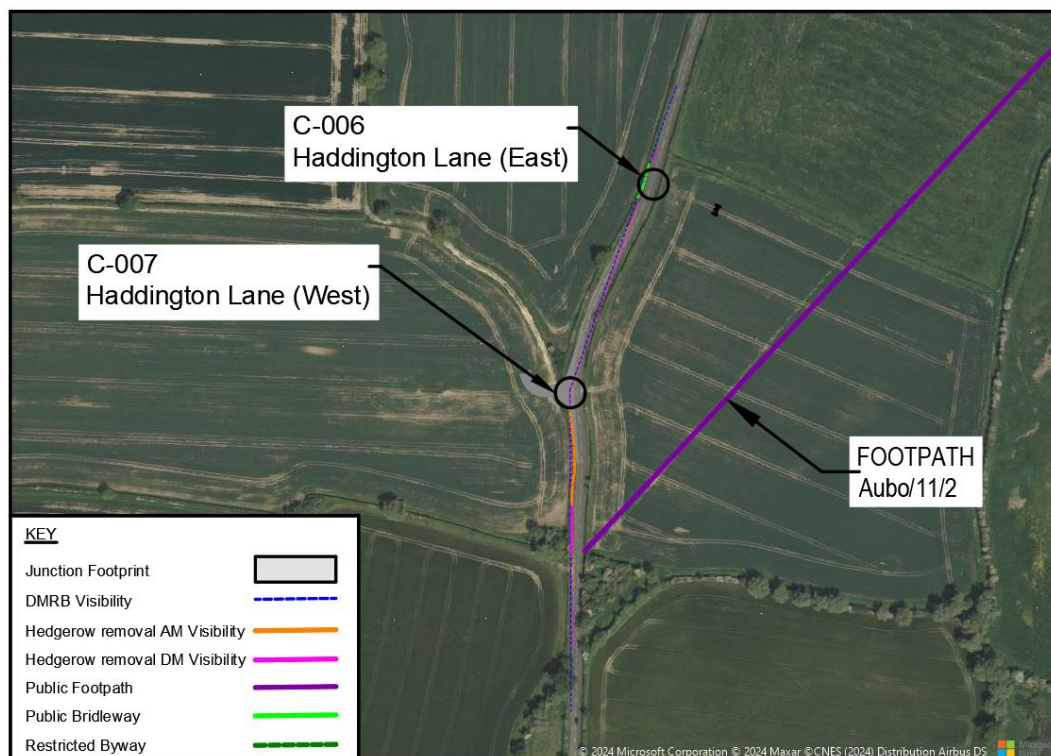


Figure 14: C-007 Haddington Lane (West) Access Location

- 3.4.2 This access location is identified as being the most optimal due to combined effects of the horizontal alignment providing favourable visibility and the presence of an existing field minimising the overall impact on existing vegetation.
- 3.4.3 National speed limit applies on this section of Haddington Lane and therefore, to ensure that visibility splay parameters were proportionate and not designed to introduce significant adverse environmental effects, speed survey data was commissioned. Northbound traffic was recorded at 54.8mph (88kph) and southbound traffic at 53.4mph (86kph).
- 3.4.4 From these results, the 85th percentile vehicle speeds were recorded as 54.8mph (88kph) for northbound traffic and 53.4mph (86kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 172 metres for desirable minimum and 131 metres for absolute minimum.
- 3.4.5 These reduced SSDs based on road users actual speed for this section of road show the potential for reduced levels of vegetation clearance for the access location, subject to further refinement of the preliminary design and approval by the LHA.
- 3.4.6 This reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be

reduced from 95 metres to 63 metres through the application of absolute minimum SSDs. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.

- 3.4.7 Due to its location this access has been designed as a Type 2 high traffic junction. The design vehicle is a maximum legal articulated vehicle. The SPA indicates that a tight turn is required inside the site, using full width of carriageway. Internal passing places may be required to control access and egress manoeuvres within access C-006.
- 3.4.8 There are no PRow within the vicinity of this access location.
- 3.4.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.4.10 Due to the limited options for access off Haddington Lane in this location, no other access locations were considered.

3.5 C-008 Moor Lane (South)

- 3.5.1 This construction access is located at an existing field access with extensive infrastructure already in place. The track and access are constructed of concrete which bridges a culvert for field drainage. The location of the access can be seen in **Figure 15** below.

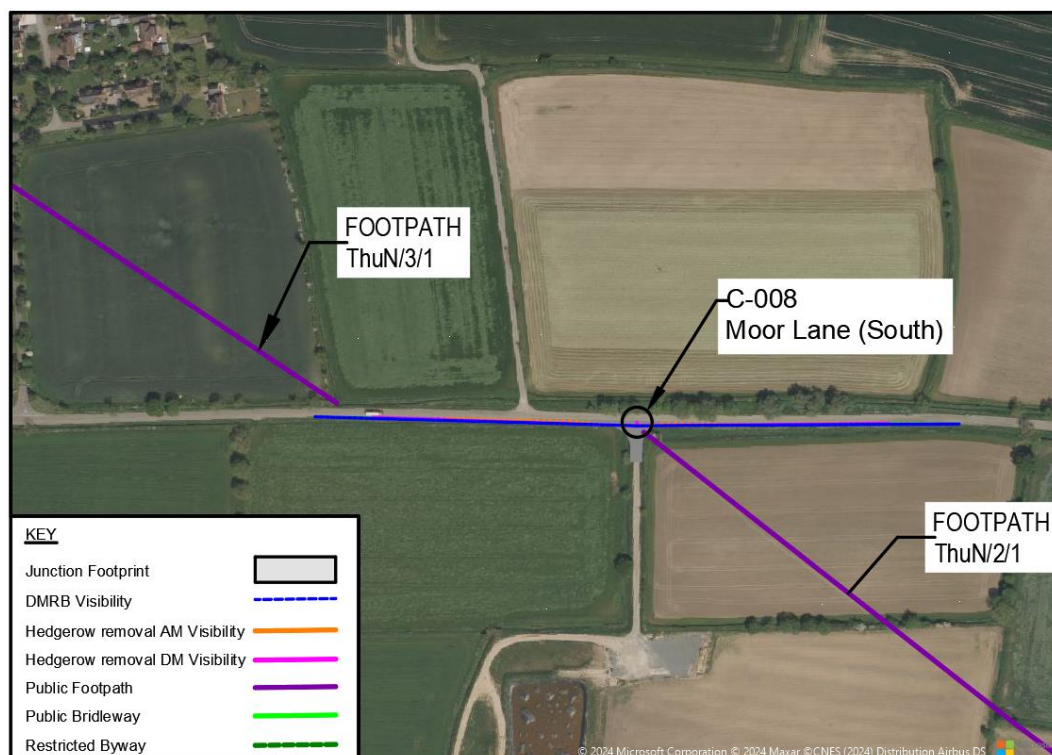


Figure 15: C-008 Moor Lane (South) Access Location

- 3.5.2 Moor Lane in this location provides a local link between the villages of Thurlby and Witham St Hughs. An existing PRow (ThuN/2/1) runs from the north-western corner of the field diagonally to the south-east, shown as a purple line in **Figure 15**. A review of StreetView data suggests this PRow enters the carriageway of Moor Lane just east of the private means of access via a separate crossing of the ditch.
- 3.5.3 Further west along Moor Lane a second PRow (ThuN/3/1) is located, which when viewed in context with ThuN/2/1, provides a non-motorised route between Witham St Hughs (RAF Swinderby) and Thurlby with a short (225 metres) section of on-carriageway travel. It is therefore anticipated that pedestrian activity is present along this section of Moor Lane. It would be essential that traffic management control measures are in place for this access location in order to ensure construction vehicle movements are managed to minimise any construction vehicle and pedestrian interaction.
- 3.5.4 For the design of the access, the design vehicle assessed is a maximum legal articulated vehicle. Access C-008 already features an existing concrete apron crossing the watercourse, which from SPA would not be wide enough to accommodate access and egress movements without utilising the full width of Moor Lane to facilitate turning movements.
- 3.5.5 Undertaking improvements to facilitate greater accessibility would require the widening of the existing surfaced access and the extension of an existing culvert structure, which would introduce additional environmental effects and disturbance to local road users. It is recommended that this junction is retained in its existing arrangement, with banksman control being required to ensure access and egress is suitably controlled to minimise disturbance to local road users.
- 3.5.6 This section of Moor Lane is just over 5 metres in width and national speed limit applies, subsequently a speed survey was commissioned.
- 3.5.7 From these results, the 85th percentile vehicle speeds were recorded as 54.1mph (87kph) for eastbound traffic and 55.6mph (89kph) for westbound traffic. Utilising the westbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 176 metres for desirable minimum and 134 metres for absolute minimum.
- 3.5.8 These visibility requirements can be met with no additional vegetation impact if the existing access footprint were retained and visibility splays in accordance with the 85th percentile speed surveys were applied.
- 3.5.9 It is recommended that an assessment of the existing culvert structure is completed to ensure that the structure has the capacity to carry the weight of any proposed construction vehicles.
- 3.5.10 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.

- 3.5.11 Due to the presence of an already well-established access south off Moor Lane, no additional access locations were considered with the exception of appraising a fully upgraded access to location C-008.

3.6 C-011 Clay Lane North (West)

- 3.6.1 The construction access C-011 is located off of Clay Lane providing access to the area to the west of Clay Lane as shown in **Figure 16**.

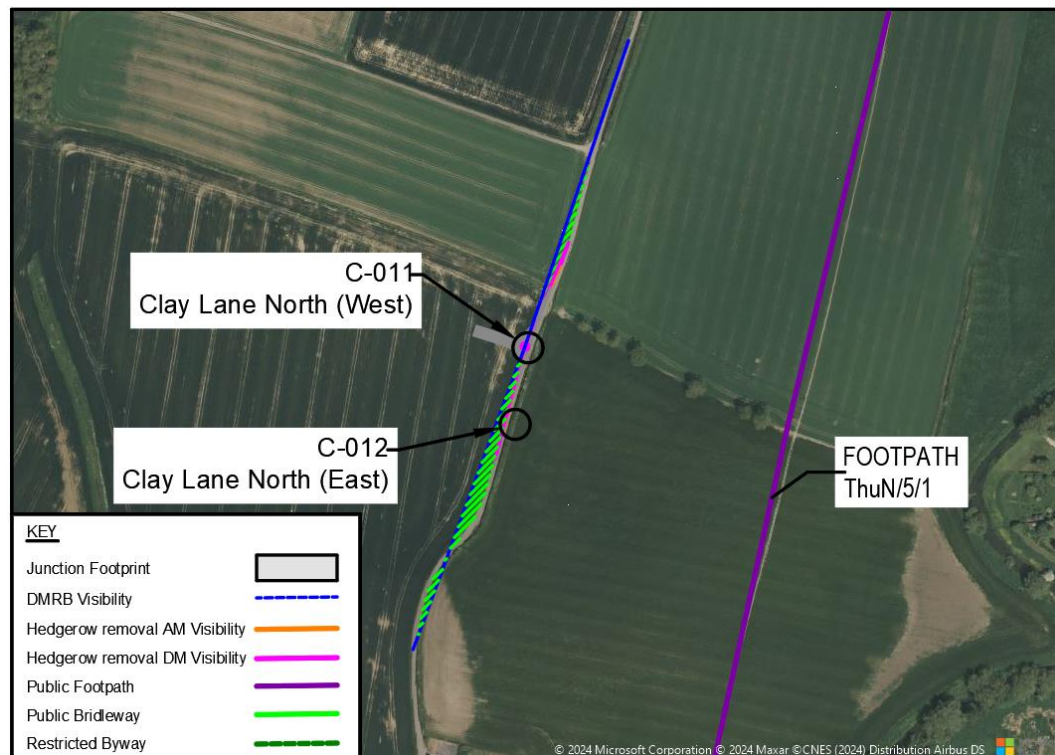


Figure 16: C-011 Clay Lane North (West) Access Location

- 3.6.2 The access has been designed as a Type 1 Low Traffic Junction and is in an area of the Local Road Network where the carriageway width of Clay Lane has reduced to approximately 3 metres. Access C-011 is sited west off Clay Lane at a location where an existing informal passing place is located on the eastern edge of the carriageway.
- 3.6.3 Clay Lane in this location is subject to National Speed Limit, however due to the rural and narrow nature of the road it was anticipated that speeds would be considerably less and a speed survey was commissioned.
- 3.6.4 From these results, the 85th percentile vehicle speeds were recorded as 33.6mph (54kph) for northbound traffic and 33.2mph (53kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 77 metres for desirable minimum and 61 metres for absolute minimum.
- 3.6.5 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation

clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 30 metres to 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.

- 3.6.6 The design vehicle is a maximum legal articulated vehicle. SPA indicates that the design vehicle cannot turn left without taking the entire carriageway width to undertake the manoeuvre safely. Any egress movements from the access would be under traffic management control measures and, due to the rural nature and good visibility achieved in both directions, this is considered to be appropriate.
- 3.6.7 There are no PRow within the vicinity of the proposed access.
- 3.6.8 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.6.9 As part of the options appraisal study undertaken, the Applicant considered a range of access location to access land to west of Clay Lane. These alternatives were discounted due the proximity to PRow, more adverse impacts on environmental features and minimising the disturbance to local residents.

3.7 C-012 Clay Lane North (East)

- 3.7.1 The location for this construction access east off Clay Lane has been identified on a straight section of road, to the west of the village of Bassingham, this location can be seen in **Figure 17**. Clay Lane in this area is approximately 3 metres wide.
- 3.7.2 The location of this junction has been staggered in order to avoid conflict with the proposed construction junction C-011B immediately to the north and positioned to avoid a line of veteran trees situated along the northern boundary of the field. There are no PRow within the vicinity.

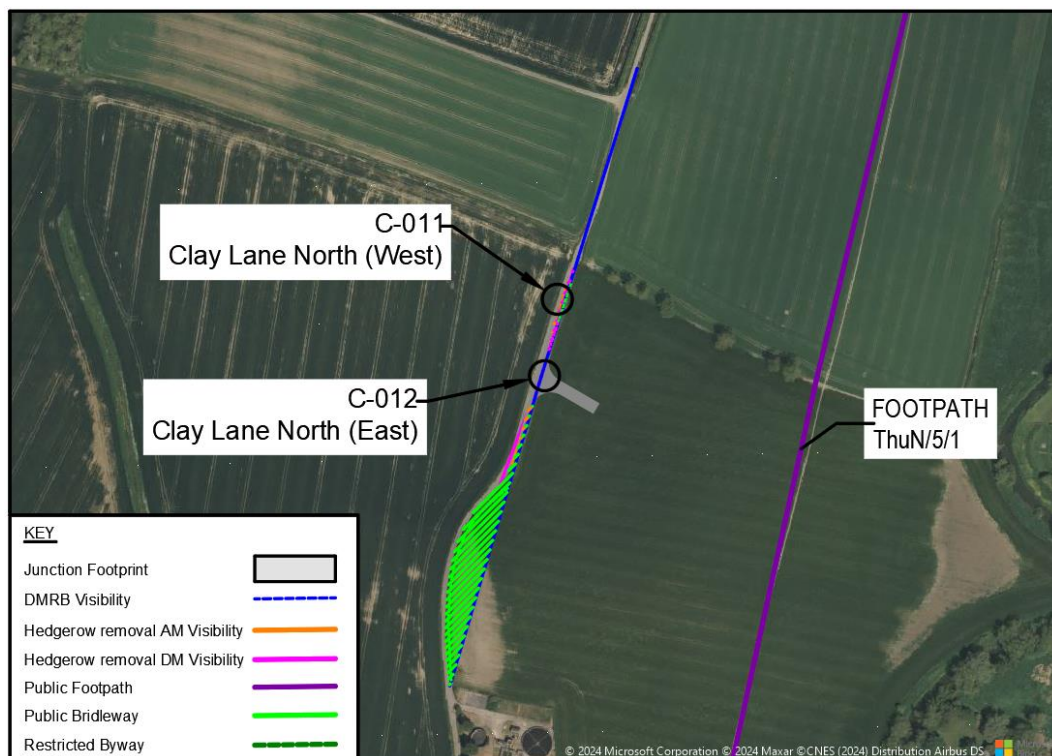


Figure 17: C-012 Clay Lane North (East) Access Location

- 3.7.3 Due to the characteristics of Clay Lane in this area a Type 1 low traffic road junction was chosen as the design solution.
- 3.7.4 Clay Lane in this location is subject to National Speed Limit, however due to the rural and narrow nature of the road it was anticipated that speeds would be considerably less and a speed survey was commissioned.
- 3.7.5 From these results, the 85th percentile vehicle speeds were recorded as 33.6mph (54kph) for northbound traffic and 33.2mph (53kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 77 metres for desirable minimum and 61 metres for absolute minimum.
- 3.7.6 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 186 metres to 16 metres and 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.7.7 The design vehicle is a Maximum legal articulated vehicle. SPA indicates that the design vehicle cannot turn left without taking the entire carriageway width to undertake the manoeuvre safely. Any egress movements from the access

would be under traffic management control measures and, due to the rural nature of the carriageway and good visibility achieved in both directions, this is considered to be appropriate.

- 3.7.8 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.7.9 As part of the options appraisal study undertaken, the Applicant considered an alternative access location to access land to east of Clay Lane to the south of C-012. This alternative was discounted due to more adverse impacts on environmental features.

3.8 C-020 Haddington Lane (North)

- 3.8.1 This junction is located on Haddington Lane to the south of the junctions with Butts Lane and north of the junction with Dovecote Lane. This junction provides access to install cables which would connect the various solar panels on the western side of Haddington Lane, the location of which can be seen in **Figure 18** below.

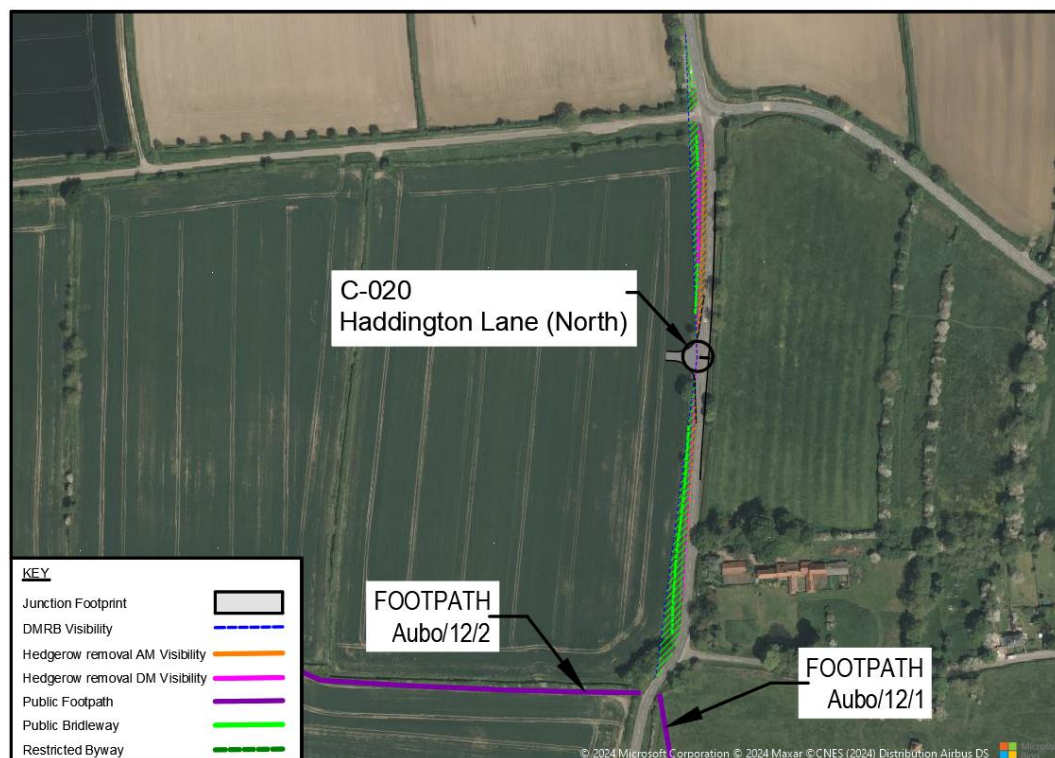


Figure 18: C-020 Haddington Lane (North) Access Location

- 3.8.2 There are no existing accesses on this section of Haddington Lane, and hedgerow removal would be required in order to cater for the access construction as shown in Street View via the following link: [View of Haddington Lane where C-020 will be constructed](#).

- 3.8.3 The junction was designed as a Type 1 low traffic road junction with a maximum legal articulated vehicle as the design vehicle.
- 3.8.4 Haddington Lane is subject to the national speed limit at this location and a speed survey was commissioned to ascertain the 85th percentile speeds on this section of the network.
- 3.8.5 From these results, the 85th percentile vehicle speeds were recorded as 53mph (85kph) for northbound traffic and 57.6mph (93kph) for southbound traffic. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 187 metres for desirable minimum and 142 metres for absolute minimum.
- 3.8.6 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location. This is evidenced by preliminary assessments indicating that the extents of hedgerow removal could be reduced from 266 metres to 61 metres and 0 metres through the application of desirable minimum and absolute minimum SSDs respectively. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.8.7 There are no PRow within the vicinity of this access.
- 3.8.8 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.8.9 This site was chosen over two other sites, one on Stone Lane to the north and the other on Haddington Lane south of the junction with Dovecote Lane. The other two options were ultimately discounted due to the presence of statutory undertaker assets and the horizontal alignment of the carriageway.

3.9 O-003 Haddington Lane

- 3.9.1 This junction proposal is located on Haddington Lane opposite the junction between Haddington Lane and Old Haddington Lane, south of the interchange with the A46. The existing access can be viewed by the following Street View url link: [O-003 Existing Access Arrangement](#).
- 3.9.2 This junction has been designed as a Type 3 operational access only with a DB32 fire engine utilised as the design vehicle. In this location, Haddington Lane is widened to accommodate a right turn lane into Old Haddington Lane. The existing lane width at this point is approximately 3.5 metres wide.
- 3.9.3 The proposed access would use an existing field access to keep the impact on vegetation to a minimum due to the presence of hedgerows on either side of the access as shown on **Figure 19**.

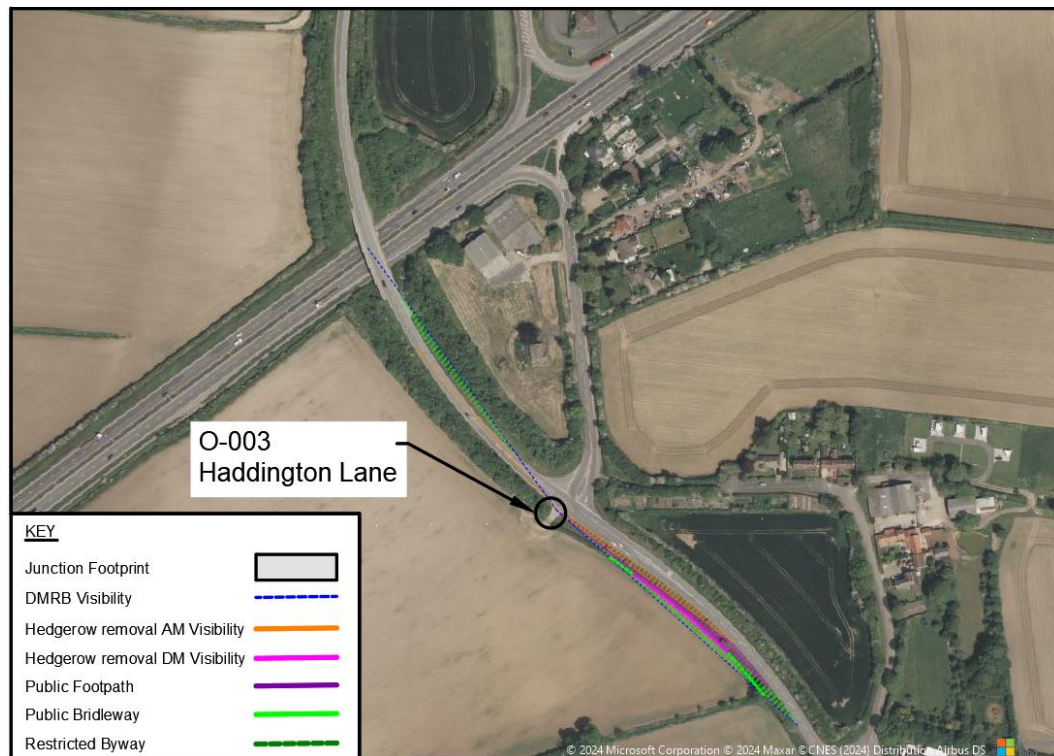


Figure 19: O-003 Haddington Lane Access Location

- 3.9.4 A vehicle speed survey was conducted and from these results, the 85th percentile vehicle speeds were recorded as 53mph (85kph) for northbound traffic and 57.6mph (93kph) for southbound traffic. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 187 metres for desirable minimum and 142 metres for absolute minimum.
- 3.9.5 From this assessment of the SSD visibility splays noted above, two Category C trees would be impacted by the absolute minimum SSD visibility splay, with an additional Category B tree impacted by desirable minimum distance.
- 3.9.6 These reduced SSDs based on road users actual speed for this section of road would reduce the levels of vegetation clearance for the access location, subject to further refinement of the preliminary design and approval by the LHA.
- 3.9.7 There are no PRow within the vicinity of this access.
- 3.9.8 There are no overhead cables in the area. The existing access is located on the high side of the carriageway, so all the drainage gullies are on the opposite side of the road. No other statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.9.9 The Applicant shall liaise with the LHA to determine if any access and egress routing strategy is required during the operation of the site. This is due to

the fact that the access is sited adjacent to the junction of Haddington Lane and Old Haddington Lane which would require operational vehicles to cross multiple lanes for certain manoeuvres. Accident data does not show any reported collisions in the proximity of this junction on Haddington Lane.

- 3.9.10 Access O-003 was not considered as a construction access location due to its proximity to the junction with Old Haddington Lane and reflects a similar outcome to the assessment as access O-002 to the north on Fosse Lane. No other access locations were considered for the operational access point to this parcel of land.

3.10 O-004 Moor Lane (North)

- 3.10.1 The location for the access north off Moor Lane has been identified on a straight section of road, to the west of the village of Thurlby, this location can be seen in **Figure 20**. Moor Lane in this area is approximately 5.0 metres wide. Through the options appraisal process, the Site Boundary has been extended in order to include a short section of the existing private means of access off Moor Lane which can be seen via the following Street View url link: [View of existing private means of access off Moor Lane](#).
- 3.10.2 Through the appraisal of providing an access directly off Moor Lane it was determined that this would give rise to additional environmental impacts through the removal of existing trees and having to culvert a drainage ditch which could otherwise be avoided through utilising the existing access track to access the field from its western perimeter.

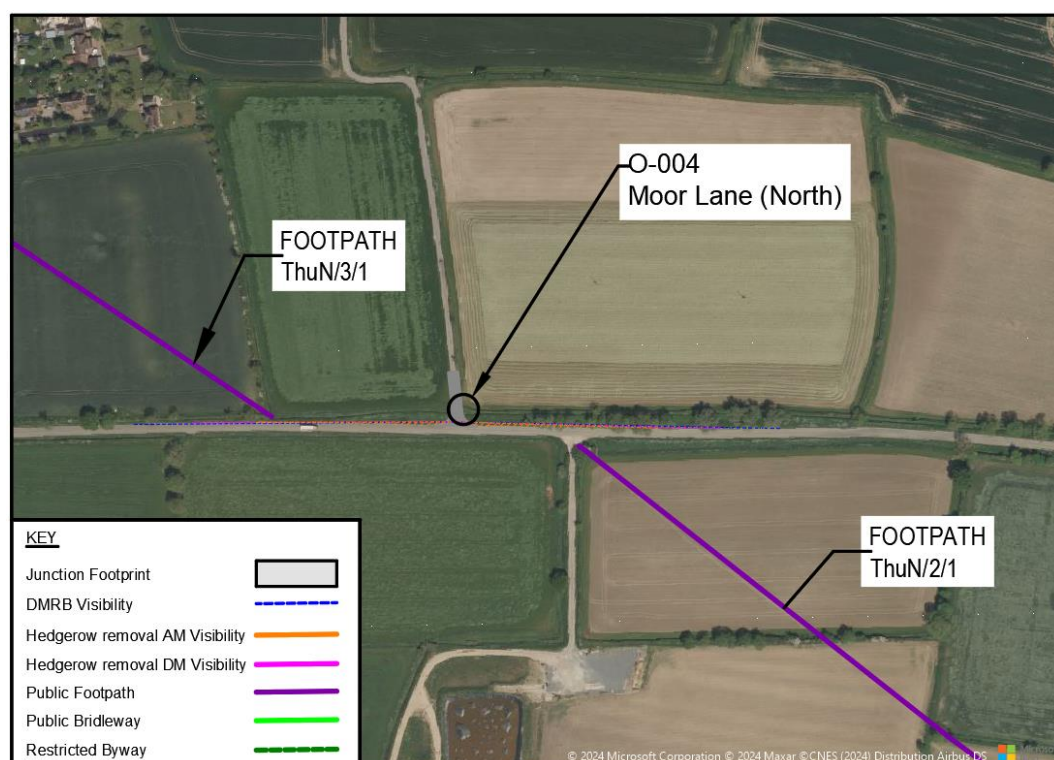


Figure 20: O-004 Moor Lane (North) Access Location

- 3.10.3 The proposed access has been designed as a Type 3 operational access only junction. The design vehicle used is a DB32 Fire Engine which is able to maintain lane discipline whilst turning. This junction footprint is slightly larger than the existing access and would require the culvert to be extended, the existing hedgerow on eastern side of access would not be impacted.
- 3.10.4 From these results, the 85th percentile vehicle speeds were recorded as 54.1mph (87kph) for eastbound traffic and 55.6mph (89kph) for westbound traffic. Utilising the westbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 176 metres for desirable minimum and 134 metres for absolute minimum.
- 3.10.5 These reduced SSDs based on road users actual speed for this section of road show the potential for reduced levels of vegetation clearance for the access location, subject to further refinement of the preliminary design and approval by the LHA.
- 3.10.6 There are no PRoW within the vicinity of this access.
- 3.10.7 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.

3.11 O-007 Clay Lane (Norton Disney)

- 3.11.1 The location for the access north off Clay Lane has been identified on a straight section of road, to the east of the village of Norton Disney, this location can be seen in **Figure 21**. Clay Lane in this area is approximately 3.9 metres wide. An alternative site was assessed located 570 metres to the east.



Figure 21: O-007 Clay Lane (Norton Disney) Access Location

- 3.11.2 This access location is identified as being the most optimal due to the horizontal alignment providing favourable visibility and the subsequent negligible impact on existing vegetation. The verge in this area is devoid of any trees or hedgerow. The field to the north of this access is all part of the Principal Site.
- 3.11.3 The access has been designed as a Type 3 operational access only junction, with a DB32 Fire Engine utilised as the design vehicle. No vehicle speed survey has been conducted on this section of Clay Lane. However, it is a rural narrow carriageway, approximately 3.9 metres wide at the point of the access and, although National Speed Limit applies at this location, it is anticipated that vehicle would be travelling at slower speeds.
- 3.11.4 The DMRB desirable minimum visibility requirements of 215 metres cannot be achieved without impacting well established trees and vegetation on the opposite side of the road (which is outside the Site Boundary). The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.11.5 It is considered reasonable to assume that speeds are similar the northern section of Clay Lane where a speed survey was carried out approximately 2km to the north-east. Vehicle speeds were recorded at 54kph which corresponds to a desirable minimum visibility requirement of 77 metres and an absolute minimum visibility requirement of 61 metres.
- 3.11.6 There are no PRow within the vicinity of the access.

- 3.11.7 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.11.8 As part of the access appraisal, other locations were assessed for access north off Clay Lane, these were ultimately discounted due the locations being sited further to the east on Clay Lane, which would increase the risk of operational vehicles interacting with other road users on this narrow carriageway when originating from Norton Disney.

3.12 C-009 Bassingham Road

- 3.12.1 This junction is located on Bassingham Road and provides the main access to the BESS Compound and onsite substation for the Proposed Development. This location is shown in **Figure 22** below.

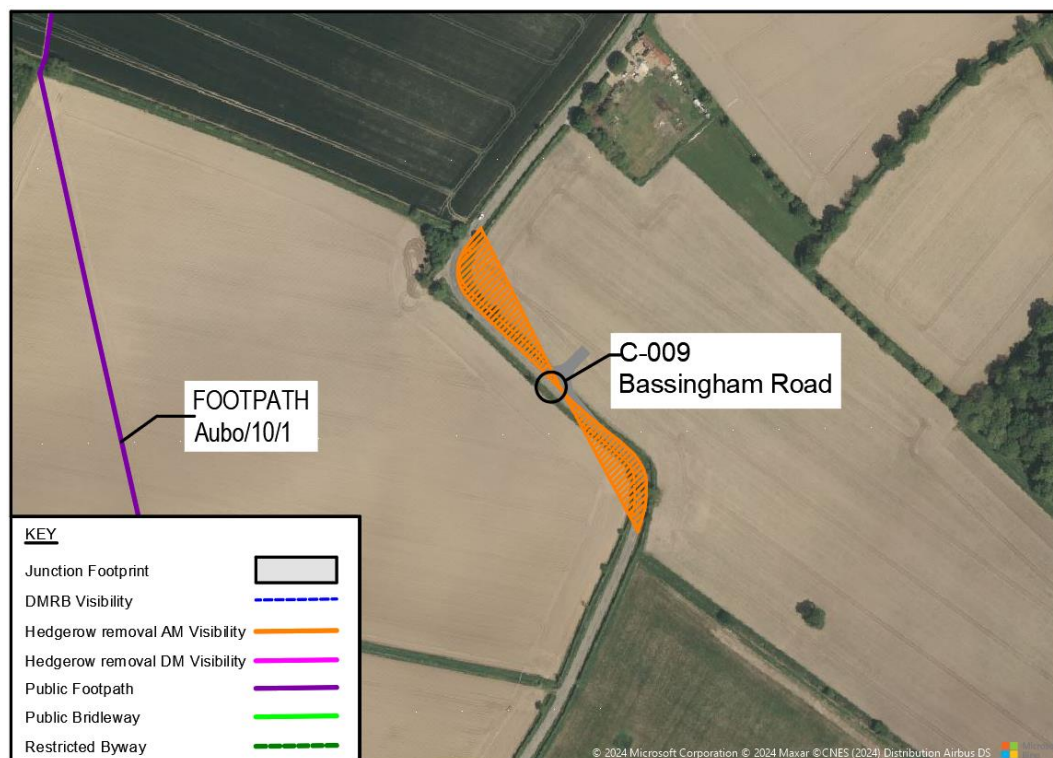


Figure 22: C-009 Bassingham Road Access Location

- 3.12.2 The designed junction is a Type 2 high traffic junction layout. A hedge runs across the access point and hedgerow removal would be required to facilitate the construction of this access. The design vehicle is a maximum legal articulated vehicle. There are no issues with the SPA. This access would also be required to accommodate a limited number of abnormal load vehicle movements. These abnormal load movements would be undertaken under escort and are assumed to be able to use the full carriageway when accessing and egressing the site.

- 3.12.3 This section of Bassingham Road is subject to the national speed limit. However, due to this section of Bassingham Road having a series of 90 degree bends, a speed survey was commissioned.
- 3.12.4 From these results, the 85th percentile vehicle speeds were recorded as 50.3mph (81kph) for northbound traffic and 47.5mph (76kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 149 metres for desirable minimum and 114 metres for absolute minimum.
- 3.12.5 These reduced SSDs would continue to be constrained by the series of 90 degree bends. Therefore, due to the increased number of construction vehicles that would be required, the Applicant would liaise with the LHA to determine any temporary speed limit reduction that may need to be enforced during construction in order to preserve existing hedgerows in this location, save for the 38 metres required to be removed for the access construction.
- 3.12.6 There are no PRow within the vicinity of this access location.
- 3.12.7 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.12.8 This construction access was chosen as the preferred location based upon a review of three options. The other two options were rejected on grounds of impact to either Category A trees, the proximity to a residential property which has a listed heritage status and their locations potentially supporting higher speeds by road users which may result in access and egress movements from the site at greater risk of side swipe or shunt style collisions. By siting the access at the median point between the two 90° bends on Bassingham Road, it is anticipated that road users would be travelling at reduced speeds, reducing the risk of interaction with construction vehicles egressing the proposed access.

3.13 C-010 Lincoln Road

- 3.13.1 The location for the access west off Lincoln Road has been identified on a section of road to the north of the village of Bassingham, this location can be seen in **Figure 23**.

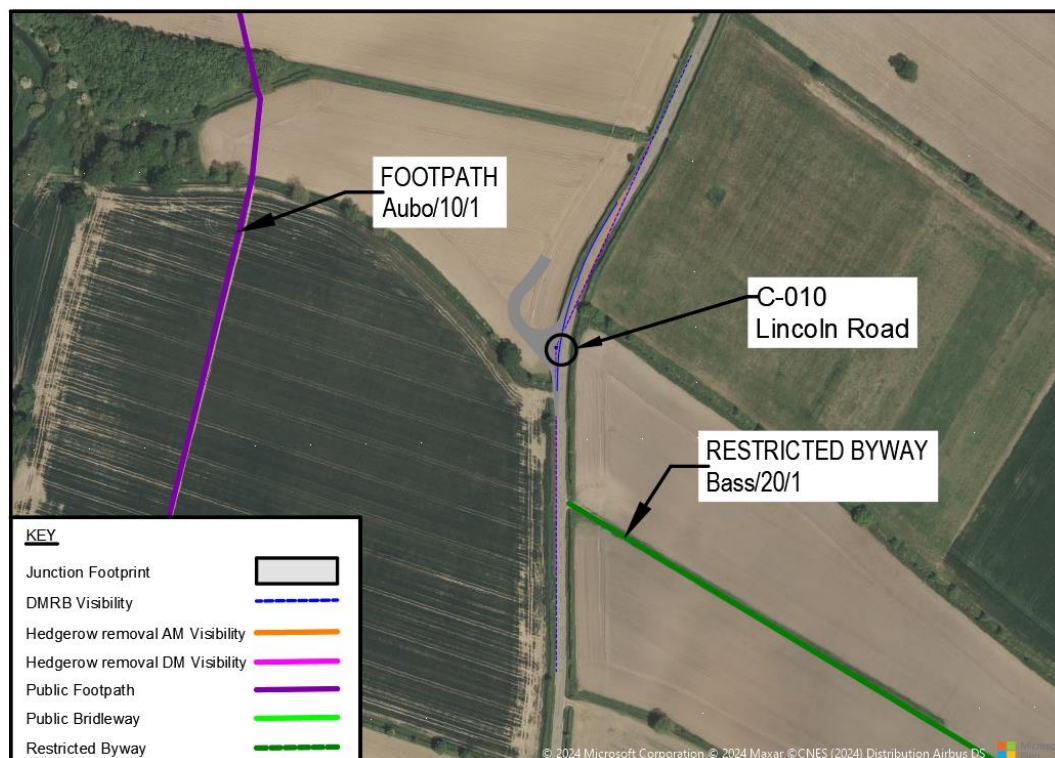


Figure 23: C-010 Lincoln Road Access Location

- 3.13.2 An existing field access is located to the southern side of the drainage ditch. This ditch would need to be crossed parallel to the road to enable access to both solar panel sites to the west of Lincoln Road.
- 3.13.3 The designed junction is a Type 2 high traffic junction layout. The design vehicle used is a maximum legal articulated vehicle. Due to the existing carriageway width, which is less than 6 metres at the point of the access, SPA identifies that existing vehicles would stray onto the opposing side of the carriageway when egressing the site. During preliminary design, the access would be appraised to see if this can be eliminated through a change of the access bell mouth parameters.
- 3.13.4 Lincoln Road is subject to the national speed limit in this area. Vehicle speeds were not recorded on this section on Lincoln Road. However, it is anticipated that speeds would be similar to that reported for access C-009 due to the horizontal bend in the carriageway.
- 3.13.5 From these results, the 85th percentile vehicle speeds were recorded as 50.3mph (81kph) for northbound traffic and 47.5mph (76kph) for southbound traffic. Utilising the northbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 149 metres for desirable minimum and 114 metres for absolute minimum.
- 3.13.6 This access has been located at a position so as to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further

environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.

- 3.13.7 No trees are impacted by this junction design.
- 3.13.8 There are no PRoW within the vicinity of this access proposal.
- 3.13.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.13.10 Due to the presence of an existing access and the favourable nature of the horizontal alignment of the carriageway, access point C-010 was selected as the preferred access location for construction over E-002, which is outlined below.

3.14 E-002 Bassingham Road (West)

- 3.14.1 This access location is situated on Bassingham Road providing access to fields to the west of Bassingham Road as shown on **Figure 24**. This access is located on a 90° bend and was discounted from being utilised as a construction or operational access due to the constraints described below.
- 3.14.2 The junction type required for is a Type 3 operational access only. The footprint of a Type 3 junction would increase the impact on two category B trees either side of the existing track. These impacts would have been more adverse if a Type 2 arrangement were proposed for a construction access.
- 3.14.3 A pair of existing sharp deviation traffic signs (Diagram 515) are located to the south of the existing access, one facing southbound traffic and the other facing northbound traffic. Any junction proposals would require the relocation of these signs which could affect their effectiveness in warning oncoming traffic approaching the bend.
- 3.14.4 This access is retained solely as an access for emergency vehicles only, with no upgrades works proposed in order to retain the current arrangement minimise interaction with local road users.

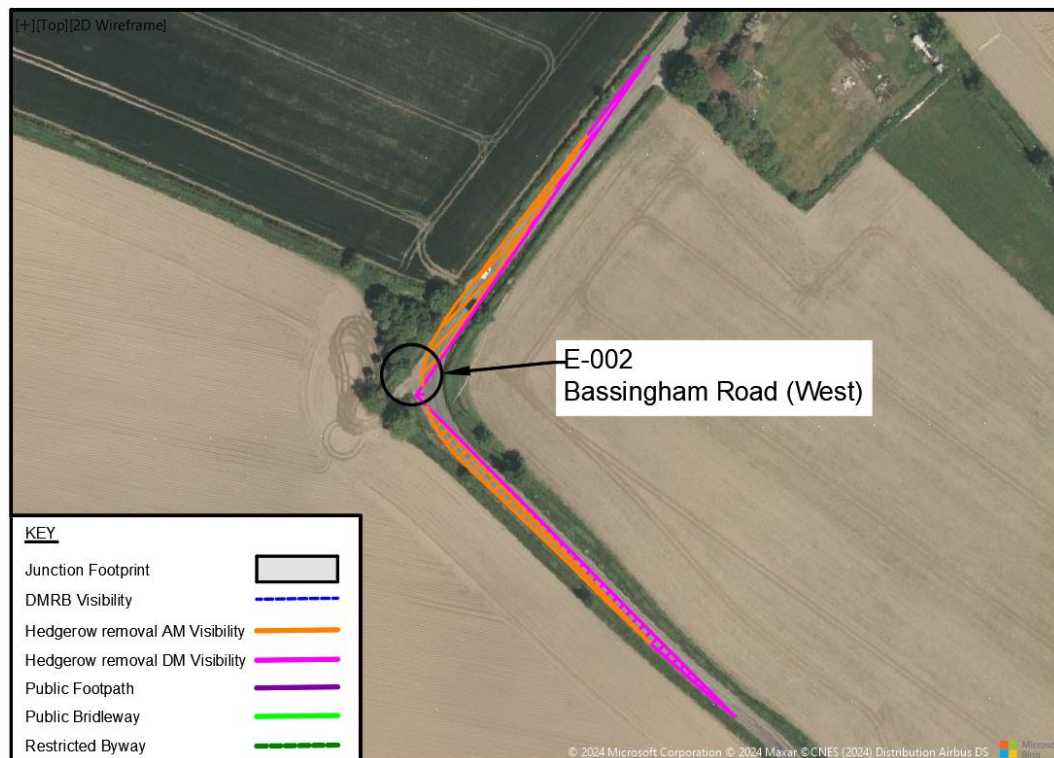


Figure 24: E-002 Bassingham Road (West) Access Location

3.15 E-003 Aubourn Moor

- 3.15.1 Originally proposed as an operational access off Moor Lane in the location depicted in **Figure 25**. Following further appraisal of access locations into the land bordering Aubourn Moor, Bassingham Road and Fen Lane, it was determined that due to the narrow and winding nature of this carriageway, this route would not be suitable for regular operational vehicle use without the implementation of passing places. These interventions would introduce additional environmental effects and disturbance to the Local Road Network.
- 3.15.2 Due to this location offering an alternative access to the site containing the BESS compound and onsite substation infrastructure, it is proposed that this route is maintained solely as an emergency vehicle access route as shown on **Figure 25**.

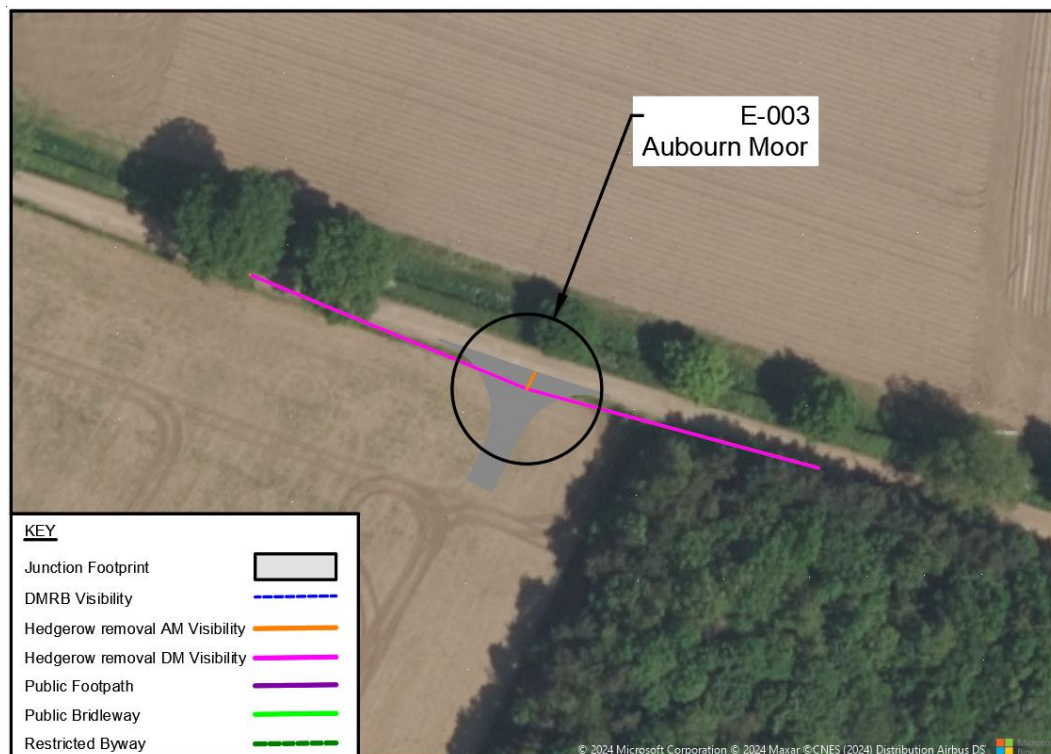


Figure 25: E-003 Aubourn Moor Access Location

- 3.15.3 There are no PRoW within the vicinity. A restricted byway is situated at the western extent of Moor Lane.
- 3.15.4 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction of the access.
- 3.15.5 As part of the options appraisal process, it was determined that an alternate operational access to the land bordered by Bassingham Road, Fen Lane and Aubourn Moor would be provided by access O-005 which is discussed below.

3.16 O-005 Fen Lane (West)

- 3.16.1 The location for the access north off Fen Lane has been identified on a straight section of road, to the east of the village of Bassingham, this location can be seen in **Figure 26**. Fen Lane in this area is approximately 3.0 metres wide.

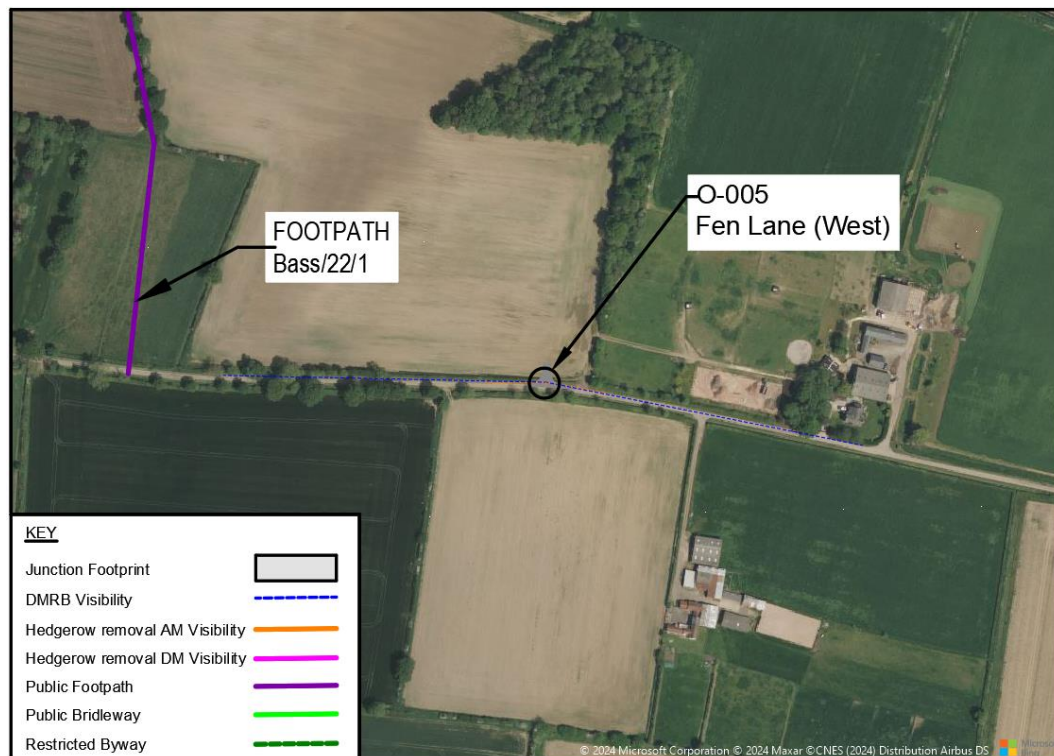


Figure 26: O-005 Fen Lane (West) Access Location

- 3.16.2 This access location is identified as being the most optimal for an additional access during operation to the BESS Compound and onsite substation due to its favourable horizontal alignment resulting in any visibility assessment resulting in a negligible impact on existing vegetation. The verge in this area is devoid of any trees or hedgerow.
- 3.16.3 This access has been designed as a Type 3 operational access only junction and sized using a DB32 Fire Engine as the design vehicle. There was no vehicle speed survey conducted on Fen Lane. It is a very narrow track, approximately 3.0 metres wide at this point. The National Speed Limit applies at this location.
- 3.16.4 The national speed limit is 60mph and a design speed of 100kph can be adopted. Table 2.10 of CD109 defines a desirable minimum stopping sight distance of 215 metres for a 100kph design speed.
- 3.16.5 The footprint of the junction would require the removal of approximately 15 metres of hedgerow. There is a line of post and rail fencing and existing hedgerow to the east, which is not impacted.
- 3.16.6 There are no PRow within the vicinity of this access.
- 3.16.7 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.

- 3.16.8 This access would form part of a series of access locations to the BESS Compound, and onsite substation with construction access provided by C-009 Bassingham Road and emergency vehicle access also being provided by E-003.
- 3.16.9 Due to the carriageway being single track in nature, the extents of Fen Lane have been included in the Site Boundary to enable discussions with the LHA on the requirement for any passing place strategy to be developed.
- 3.16.10 As part of the options appraisal process, an alternative access point was considered for O-005 using the existing field access to the east depicted on **Figure 26**. This option was ultimately rejected due to the proximity to an existing residential access and the impact to a Category B tree that would be realised if this access location was upgraded.

3.17 O-006 Fen Lane (East)

- 3.17.1 The location for the access north off Fen Lane has been identified on a straight section of road, to the east of the village of Bassingham, this location can be seen in **Figure 27**. Fen Lane in this area is approximately 3.0 metres wide.



Figure 27: O-006 Fen Lane (East) Access Location

- 3.17.2 The operational access has been designed to a Type 3 junction arrangement junction and sized using a DB32 Fire Engine as the design vehicle. The proposal uses an existing access to north off Fen Lane. There are

hedgerows and a Category B tree in the vicinity, but these are not affected by the junction footprint. There is no Street View imagery available.

- 3.17.3 The typical characteristics of the carriageway at Fen Lane can be seen via the following Street View url link: [Fen Lane Carriageway](#). This shows the furthest extent of the Street View imagery, just east of Bassingham Low Fields Farm. The ditch on left of the image is the West Brant Syke, which is a major flood relief feature in the area.
- 3.17.4 The existing access crosses the West Brant Syke via a culvert. There was no vehicle speed survey conducted on Fen Lane.
- 3.17.5 The national speed limit is 60mph and a design speed of 100kph can be adopted. Table 2.10 of CD109 defines a desirable minimum stopping sight distance of 215 metres for a 100kph design speed.
- 3.17.6 The proposed junction footprint fits within the available gap in the hedgerow. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 3.17.7 As part of upgrading to cater for the Type 3 operational access, the junction would require localised widening to the existing culvert in order to achieve the required width for the junction bell-mouth.
- 3.17.8 There are no PRow within the vicinity of the access.
- 3.17.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 3.17.10 Due to the carriageway being single track in nature. The extents of Fen Lane have been included in the Site Boundary to enable discussions with the LHA on the requirement for any passing place strategy to be developed.
- 3.17.11 As part of the options appraisal process, no other alternative access was considered for this land parcel.

4. Access Appraisal of the Cable Corridor

4.1 C-013 Fen Lane

- 4.1.1 The purpose of this junction is to provide access to the Cable Corridor. The location for this construction access east off Fen Lane has been identified on a straight section of road, to the east of the village of Bassingham, this location can be seen in **Figure 28**. Fen Lane in this area is approximately 2.5 metres wide.

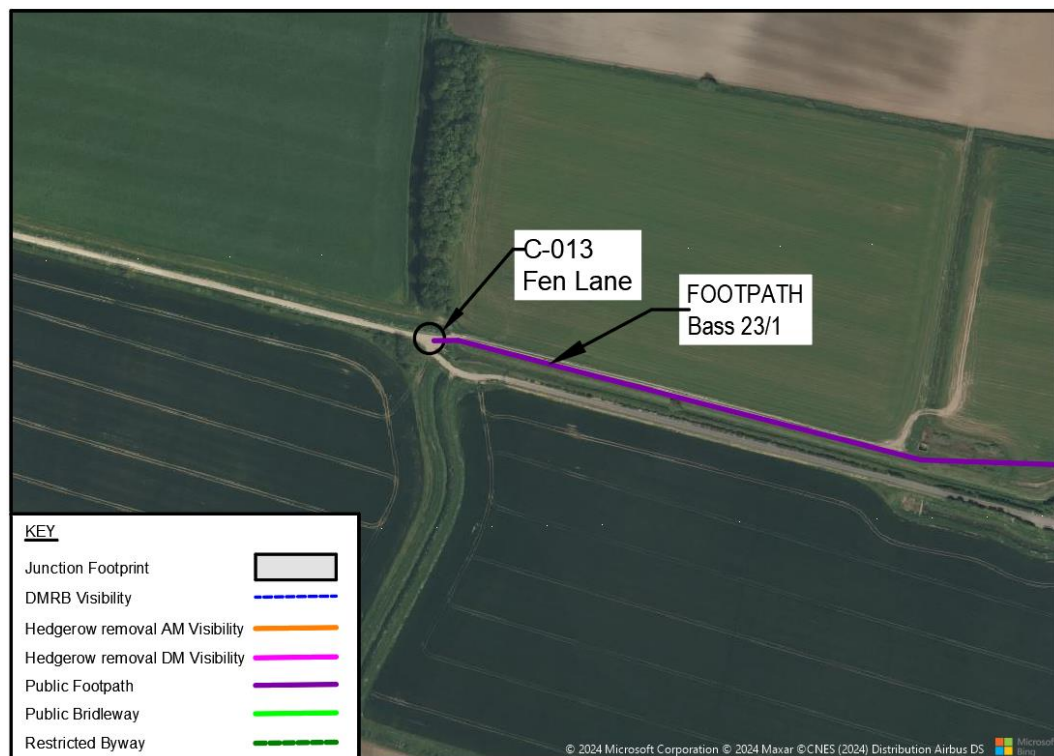


Figure 28: C-013 Fen Lane Access Location

- 4.1.2 Fen Lane is an adopted highway from Bassingham Low Fields Farm eastwards. Fen Lane runs parallel to the south of West Brant Syke and crosses Little Syke, which is the area between the two dark green fields at the shown in **Figure 28** above). A Street View image of Little Syke taken from Linga Lane (to the south of Fen Lane) can be seen in the following url: [View of Little Syke](#).
- 4.1.3 No vehicle speed survey was conducted on Fen Lane. Similar to access O-005 and O-006 it is considered this section of Fen Lane is also subject to National Speed Limit. Fen Lane is very narrow and acts as a no through road in this area, it is anticipated that speeds observed are less than the national speed limit.
- 4.1.4 No Street View is available for Fen Lane in this area. The typical characteristics of the carriageway at Fen Lane can be seen via the following Street View url link: [Fen Lane Carriageway](#).
- 4.1.5 Due to the arrangement of Fen Lane where construction vehicles are proposing to access east to the Cable Corridor, and the likely minimal interaction with other vehicles. It is anticipated that access upgrades would be limited to facilitating the safe access and egress of construction vehicles, with egress under traffic management control measures.
- 4.1.6 There is a PRow which commences at the point where the track diverges either side of the West Brant Syke. This footpath (Bass/23/1) follows the track north of the syke, and it is anticipated that this PRow would need to be managed during the construction of the Cable Corridor. The route of the

footpath can be seen in **Figure 29**. Any construction vehicles would be required to give way to PRow users.



Figure 29: Footpath Bass/23/1 alongside Fen Lane

- 4.1.7 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.1.8 As part of the options appraisal process, no alternative access locations to C-013 were considered.

4.2 C-014 Broughton Lane

- 4.2.1 Moving further east from C-013, the Cable Corridor would pass underneath the River Brant. Access to land between the River Brant and Broughton Lane is required to construct the Cable Corridor and receive the directional drill of the cable. Broughton Lane is a local road, approximately 5.9 metres wide, that runs north to south to the east of River Brant. The junction location can be seen in **Figure 30** below.



Figure 30: C-014 Broughton Lane Access Location

- 4.2.2 The proposed location for access C-014 is 55 metres south of the junction with Hill Rise. Forming a left-right staggered junction along Broughton Lane. This has been designed as a Type 1 low traffic road junction. The design vehicle utilised to size the access is a max legal articulated vehicle.
- 4.2.3 Broughton Lane is subject to national speed limit at this location and a speed survey was commissioned to ascertain the 85th percentile speeds on this section of the network.
- 4.2.4 From these results, the 85th percentile vehicle speeds were recorded as 63.8mph (103kph) for northbound traffic and 64.4mph (104kph) for southbound traffic. Utilising the southbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 227 metres for desirable minimum and 171 metres for absolute minimum.
- 4.2.5 The outcome of the speed survey data demonstrates that road users regularly exceed the posted speed limit. Therefore, any egress movements would be under traffic management control measures to ensure it is safe for construction vehicles to exit. Junction visibility splays in accordance with the DMRB for 60mph of 215 metres would be utilised for the purpose of the assessment.
- 4.2.6 A total of 19 metres of hedgerow would require removal by the junction bell-mouth and a further 167 metres of hedgerow requires removal to achieve the DMRB visibility requirements.
- 4.2.7 There are no PRoW within the vicinity of the access proposal.

- 4.2.8 This access has been located at a position so as to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 4.2.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.2.10 As part of the options appraisal process, no alternative access locations to C-014 were considered due to the presence of established trees further to the south of access C-014.

4.3 C-015 Hill Rise

- 4.3.1 This junction is located on Hill Rise as shown in **Figure 31** below.

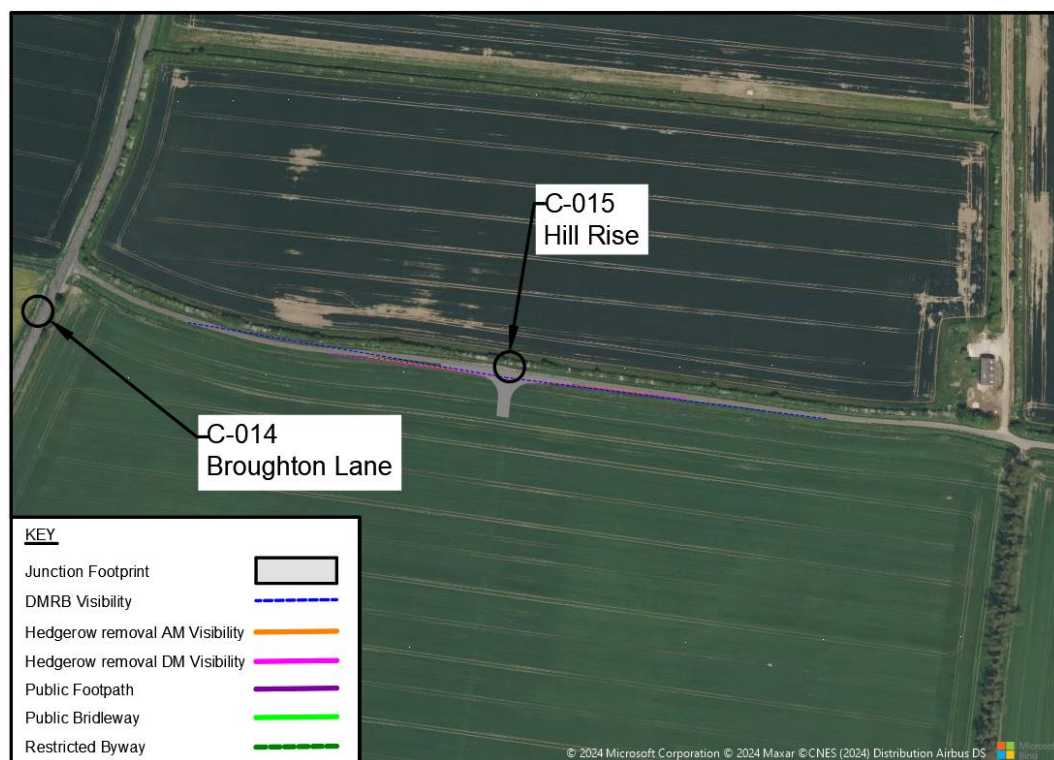


Figure 31: C-015 Hill Rise Access Location

- 4.3.2 In order to access the Cable Corridor to the east of Broughton Lane, an access off Hill Rise is proposed in order to minimise the removal of any hedgerow which would have been required if an access east off Broughton Lane was proposed.
- 4.3.3 The location of access C-015 has been selected in order to make use of an existing field access that has already culverted the field ditch bordering Hill

Rise. Furthermore, this access location minimises the overall extents over which construction vehicles would be utilising Hill Rise to minimise the need for any passing places being required on this section of carriageway. This junction has been designed as a Type 1 low traffic road and the design vehicle is a max legal articulated vehicle.

- 4.3.4 Hill Rise is subject to national speed limit at this location and a speed survey was commissioned to ascertain the 85th percentile speeds on this section of the network.
- 4.3.5 From these results, the 85th percentile vehicle speeds were recorded as 44.3mph (71kph) for eastbound traffic and 42.9mph (69kph) for westbound traffic. Utilising the eastbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 120 metres for desirable minimum and 89 metres for absolute minimum.
- 4.3.6 These reduced SSDs based on road users actual speed for this section of road show the potential for reduced levels of vegetation clearance for the access location, subject to further refinement of the preliminary design and approval by the LHA.
- 4.3.7 There are no PRow within the vicinity of this access.
- 4.3.8 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access, including assessment of vertical clearances.
- 4.3.9 As noted above, access locations east off Broughton Lane were discounted due to the presence of an existing hedgerow which would have generated additional environmental impacts. No other location was considered on Hill Rise due to C-015 utilising an existing field access location and any other accesses further east would have risked passing places being required due to the lengths over which construction traffic would have been required to navigate on Hill Rise.

4.4 C-016 Rose Cottage Lane (West)

- 4.4.1 This junction location is situated on Rose Cottage Lane, north-east of the village of Boothby Graffoe. Rose Cottage Lane is subject to national speed limit at this location and is approximately 3.4 metres wide. The location of the junction can be seen in **Figure 32** below. Rose Cottage Lane is a narrow track and passing places may be required, however the existing verge widths could accommodate a passing place without impacts to existing hedgerows. No speed surveys were conducted on Rose Cottage Lane and therefore visibility splays in accordance with the DMRB of 215m would be considered.
- 4.4.2 The straight alignment along Rose Cottage Lane and the offset of existing hedgerows from the carriageway, due to the wide verges, would result in no

additional environmental impact beyond the 12 metres of hedgerow necessary to construct the Type 1 low traffic road junction.



Figure 32: C-016 and C-017 Rose Cottage Lane (West and East) Access Location

- 4.4.3 The junction has been located on Rose Cottage Lane in favour of a site on the A607. This is to reduce the disruption caused by any access and egress movements on the high volumes of local road users that utilise the A607. The design vehicle is a maximum legal articulated vehicle.
- 4.4.4 There are no PRoW within the vicinity.
- 4.4.5 A high voltage power line crosses east/west over Rose Cottage Lane approximately 90 metres to the south with a pylon located nearby in the field to the east of Rose Cottage Lane. An existing water main crosses the field north to south. No other statutory undertaker assets have been identified at this stage. Any additional buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.4.6 This access has been located at a position so as to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.

4.5 C-017 Rose Cottage Lane (East)

- 4.5.1 This junction location is situated on Rose Cottage Lane, directly opposite access site C-016 and provides access to the Cable Corridor to the east of Rose Cottage Lane. These two junctions would operate as a crossroad junction with Rose Cottage Lane being the major road. Rose Cottage Lane is a narrow track and passing places may be required, however the existing verge widths could accommodate a passing place without impacts to existing hedgerows. No speed surveys were conducted on Rose Cottage Lane and therefore visibility splays in accordance with the DMRB of 215 metres would be considered.
- 4.5.2 The straight alignment along Rose Cottage Lane and the offset of existing hedgerows from the carriageway, due to the wide verges, would result in no additional environmental impact beyond the 10 metres of hedgerow necessary to construct the Type 1 low traffic road junction.
- 4.5.3 A high voltage power line crosses east/west over Rose Cottage Lane approximately 90 metres to the south with a pylon located nearby in the field to the east of Rose Cottage Lane. No other statutory undertaker assets have been identified at this stage. Any additional buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.5.4 There are no PRoW within the vicinity.
- 4.5.5 This access has been located at a position so as to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 4.5.6 Due to this access proposing to work in conjunction with C-016, no alternative access locations were considered as part of this assessment.

4.6 C-018 Green Man Road

- 4.6.1 The location for this construction access north off Green Man Road has been identified on a straight section of road, to the east of the village of Navenby, this location can be seen in **Figure 33**.



Figure 33: C-018 Green Man Road Access Location

- 4.6.2 Green Man Road in this area is approximately 4.8 metres wide. The junction would provide access to the land to the north of Green Man Road. As can be seen from Street View in the following url: [proposed access off Green Man Road](#), there is an existing field access that is wide enough to accommodate the new junction.
- 4.6.3 Green Man Road links the village of Navenby to the west, with the A15 to the east.
- 4.6.4 Green Man Road is subject to the national speed limit at this location and a speed survey was commissioned to ascertain the 85th percentile speed surveys.
- 4.6.5 From these results, the 85th percentile vehicle speeds were recorded as 42.1mph (68kph) for eastbound traffic and 40.3 (65kph) for westbound traffic. Utilising the eastbound lane as the worst case recorded average speed, this would equate to SSD visibility splays of 110 metres for desirable minimum and 86 metres for absolute minimum.
- 4.6.6 These reduced SSDs based on road users actual speed for this section of road show the potential for significantly reduced levels of vegetation clearance for the access location, subject to further refinement of the preliminary design and approval by the LHA.
- 4.6.7 The junction was designed as a Type 1 low traffic road junction. The design vehicle is a max legal articulated vehicle.

- 4.6.8 There are no PRow within the vicinity of this access.
- 4.6.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.6.10 As part of the appraisal, the length of the Green Man Road has been incorporated into the Site Boundary to allow engagement with the LHA to agree any passing places that are deemed necessary.
- 4.6.11 This access has been located at a position to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.
- 4.6.12 As part of the options appraisal process, a number of access locations off the Green Man Trail were considered in order to provide access to the Cable Corridor. Access C-018 was identified as the preferred access location due to the reduction in environmental impact and its offset to the existing overhead pylon situated to the west.

4.7 C-019 Heath Lane (East of Navenby)

- 4.7.1 The location for this construction access is on Heath Lane. The location for this construction access is located on Heath Lane has been identified on a straight section of road, to the east of the village of Navenby, this location can be seen in **Figure 34** below.



Figure 34: C-019 Heath Lane (East of Navenby) Access Location

- 4.7.2 Heath Lane in this area is approximately 4.8 metres wide. The junction would provide access to the land to the north of Heath Lane.
- 4.7.3 Heath Lane links the village of Navenby to the west, with the A15 to the east and is subject to the national speed limit at this location.
- 4.7.4 The junction was designed as a Type 1 low traffic road junction. The design vehicle is a maximum legal articulated vehicle. SPA indicates that the design vehicle would not be able to egress left without occupying the full carriageway to a narrow major road width at the preferred location (4.27 metres). The Applicant would explore the widening of the access or the implementation of traffic management control measures during preliminary design to minimise any impact.
- 4.7.5 No speed surveys were conducted on Heath Lane and visibility splays in accordance with the DMRB of 215 metres would be considered.
- 4.7.6 There are no PRow within the vicinity of this access.
- 4.7.7 A small, 15 metres section of hedgerow would be affected to facilitate the construction of the access.
- 4.7.8 This access has been located at a position so as to minimise the overall environmental impacts based upon a visual assessment of the environmental constraints. The Applicant is currently undertaking further environmental assessments, and the access location will be refined in the event that this additional survey information introduces any additional constraint.

- 4.7.9 No statutory undertaker assets have been identified at this stage. Any buried statutory undertaker assets would need to be assessed for any protection/diversion works that may be required to facilitate construction access.
- 4.7.10 As part of the appraisal, the length of the Heath Lane has been incorporated into the Site Boundary in order to allow engagement with the LHA to agree any passing places that are deemed necessary.
- 4.7.11 As part of the options appraisal process, a number of locations were appraised on Heath Lane to facilitate access to the Cable Corridor. These were discounted due to additional environmental impacts and the presence of existing statutory undertaker overhead assets in proximity to the access locations.

5. Summary

- 5.1.1 This appraisal report has sought to present the outcomes of the highways access appraisal of the Proposed Development. Through an appraisal that has considered a range of environmental, operational safety and localised constraints, the Applicant has sought to develop and refine the access strategy in order to ensure that each access location required for construction, operation or emergency is appropriate.
- 5.1.2 Through collaboration with the LHA, it is anticipated that 85th percentile speed survey would be able to provide access designs that seek to minimise the overall environmental impact of the access strategy for the Proposed Development.
- 5.1.3 As part of this appraisal report, a number of areas have been identified for further liaison with the LHA to understand if passing places would be required during construction. These areas have been included into the Site Boundary in order to ensure that these areas can be appraised for any environmental features which would need to be considered in conjunction with a passing place strategy.
- 5.1.4 Table 1 contains a list of all access locations which are proposed as part of the Proposed Development. The locations of these accesses, and their relevant status as a construction, operation or emergency access can be viewed on the Location Plan in Annex A.
- 5.1.5 The Applicant would continue to refine the proposed access locations and seek to agree the principles of any access location, and any additional mitigation required, for incorporation into the Development Consent Order application submission.

Table 1: Access Locations Summary

Access Proposal
C-001 Fosse Lane (North)
C-002 Fosse Lane (South)
C-003 Haddington Lane (North)
C-004 The Avenue
C-005 Stone Lane
C-006 Haddington Lane (East)
C-007 Haddington Lane (West)
C-008 Moor Lane (South)
C-009 Bassingham Road
C-010 Lincoln Road
C-011 Clay Lane North (West)
C-012 Clay Lane North (East)
C-013 Fen Lane
C-014 Broughton Lane
C-016 Rose Cottage Lane (West)
C-017 Rose Cottage Lane (East)
C-018 Green Man Road
C-020 Haddington Lane (North)
C-015 Hill Rise
C-019 Heath Lane (East of Navenby)
O-001 Clay Lane (Track)
O-002 Fosse Lane
O-003 Haddington Lane
E-001 Morton Lane
E-002 Bassingham Road (West)
E-003 Aubourn Moor
O-004 Moor Lane (North)
O-005 Fen Lane (West)
O-006 Fen Lane (East)
O-007 Clay Lane (Norton Disney)

6. Abbreviations

Byways Open to All Traffic (BOAT)

Design Manual for Roads and Bridges (DMRB)

Local Highways Authority (LHA)

Public Rights of Way (PRoW)

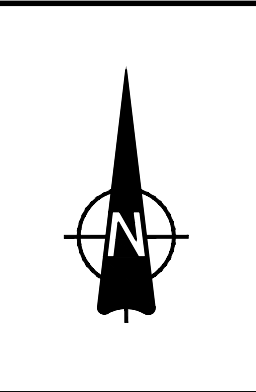
Stopping Sight Distance (SSD)

Swept Path Analysis (SPA)

Annex A – Location Plan



Site Location Plan
Scale - 1:20000



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KEY

- Site Boundary
- Construction Access
- Operational Access
- Emergency Access

ISSUE/REVISION

P01	09/09/2024	FIRST VERSION
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60700987

SHEET TITLE

Site Location Plan

SHEET NUMBER

60700987-ACM-HGN-DR-CH-9999