Annex G – 46.63m AIL Report

SUNNICA ENERGY FARM

Abnormal Indivisible Loads required for Sunnica Energy Farm

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

Version number: 00

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Sunnica Energy Farm

Abnormal Indivisible Loads required for Sunnica Energy Farm

Version	Date	Status of Version
Rev 00	25/07/2022	For Issue

1 Introduction

1.1.1 To facilitate the grid connection at Burwell National Grid Substation, the Scheme needs to provide a substation or transformer capable of upgrading the voltage of the electricity generated by the Scheme to 400 kilovolts (kV). Within the application submitted in November 2021, the Scheme included two options for extending the Burwell National Grid Substation to do this. Within the application, these are called Option 1 and Option 2.

1.1.2 Through the relevant representations process, the Applicant was made aware of the representation made by National Grid Electricity Transmission (NGET). This representation stated that one of the two grid connection options, Option 1, is considered 'not technically feasible' by NGET. Option 1 has therefore proposed to be removed from the Application.

1.1.3 Following NGET's representation, the Applicant has revisited the technical solutions available to connect the Scheme into the NGET infrastructure at Burwell to seek to minimise compulsory acquisition requirements and environmental effects.

1.1.4 This design work has resulted in the identification of an additional option for the grid connection, referred to as 'Option 3'. Option 3 involves transforming the 33 kV received from the solar stations within the PV Sites directly to 400 kV within the onsite substation at Sunnica West Site A, Sunnica East Site A and Sunnica East Site B for export to the Burwell National Grid Substation.

1.1.5 Option 2 has not been discounted at this stage and is retained in the application whilst discussions continue with NGET about Option 3. Once NGET have confirmed that they are content with Option 3, the Applicant would seek to remove Option 2 from the application.

1.1.6 As a result of the above, the Applicant has undertaken additional swept path analysis (vehicle tracking) to ensure that the electrical infrastructure required under Option 3 i.e. a 400kV transformer can be safely transported to Sunnica West Site A, Sunnica East Site A and Sunnica East Site B. To ensure a robust assessment, the tracking has also been redone for Burwell National Grid Substation Extension Option 2 using a worst case vehicle that has been utilised for the Option 3 solution.

2 Swept Path Analysis

2.1.1 Based on the information provided by an experienced contractor, a 16-Axle Girder Trailer (46.63m long) would be required to transport the 400kV transformer to site. Refer to Plate 1 below for visual representations.

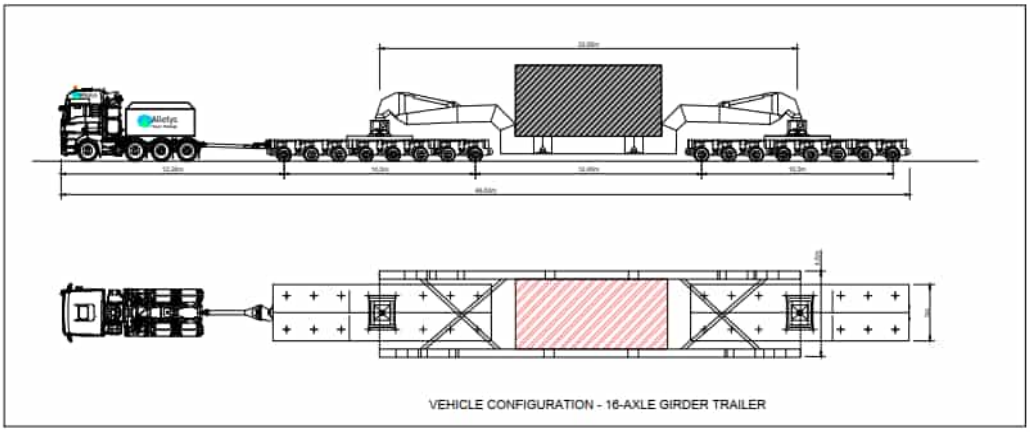


Plate 1: 16-Axle Girder Trailer

2.1.2 The swept path analysis has been undertaken based on the preferred routes identified within section 5.5 to 5.8 of the Framework Construction Traffic Management Plan and Travel Plan **[APP-118]**. This technical note provides a summary of the identified 'pinch points' along the identified routes where the AIL will over sail the existing road only and not a full route review. The note does not include junctions or manoeuvres where the AIL movement is within the bounds of the existing road; hence not all junctions are described in this technical note. The pinch points are shown in Figure 1. The 'pinch points' along the routes form the basis of the targeted consultation.

2.1.3 The swept path analysis for the routes has been undertaken for the entry routes only at this stage, as the AIL will be disassembled and transported off-site following delivery of the 400kV transformer.

2.1.4 The swept path analysis has been based on OS mapping which is considered sufficient for this stage of the planning process. Detailed topographical surveys will be undertaken of the routes post consent and a further review of the route will be carried out by an experienced haulage contractor prior to the AILs requirement on-site. The requirements for the AILs along the routes and consents required will be discussed with the relevant local highway authorities, National Highways and Police at that stage.

2.1.5 The swept path analysis included below shows the wheel lines (in blue) and the over sail of the vehicle's body (in orange). Where relevant the junctions and AIL manoeuvres have been cross referenced with Revision 1 of the Access and Rights of Way (ARoW) Plans **[AS-005]** submitted in response to the Section 51 letter.

3 Sunnica West Site A

3.1.1 The swept path analysis has shown that the AIL can safely manoeuvre the A11 / La Hogue Road junction; however, the trailer will over sail the inside grass verge of the junction by approximately 3.2m but will remain within the bounds of the highway and require a street sign to be temporarily removed or relocated, as illustrated in Plate 2 below.

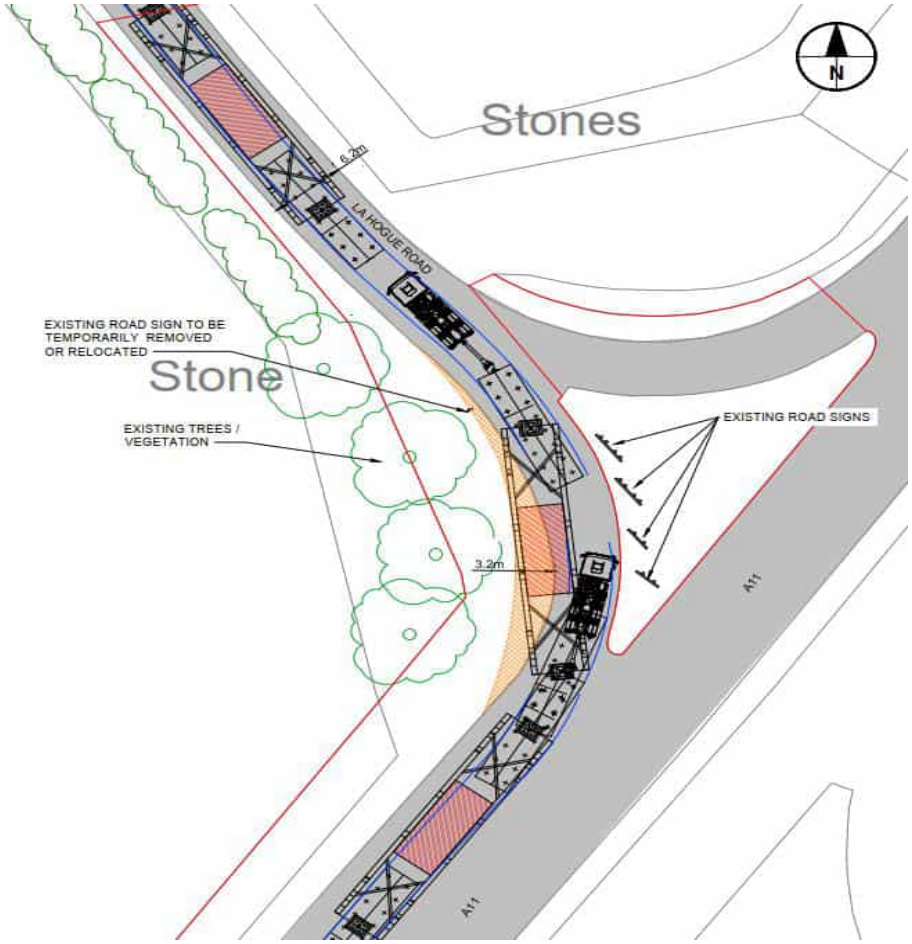


Plate 2: A11 / La Hogue Road Junction

4 Sunnica East Site A

4.1.1 The AIL can safely access Sunnica East Site A via the B1085 (High Street) through Chippenham B1104 and B1102 Fordham Road through Freckenham to Beck Road as outlined in Section 5.6 of the Construction Traffic Management Plan and Travel Plan **[APP-118]**. However as shown in Plates 3 to 8, the trailer will over sail the road in the following locations:

- A11 off-slip / B1085 Junction (Plate 3) the trailer will over sail the inside grass verge by approximately 2.5m but will remain within the bounds of the highway and no temporary alterations to streets are considered necessary to facilitate this manoeuvre.
- 'S'-Bend on B1085 (Plate 4): the trailer will over sail the inside grass verge by approximately 2.1m at Low Park Corner but will remain within the bounds of the highway and no temporary alterations to streets are considered necessary to facilitate this manoeuvre.
- Bend on B1085 / Parkside Road (Plate 5): the trailer will over sail the inside grass verge by approximately 1.2m but will remain within the bounds of the highway and no temporary alterations to streets are considered necessary to facilitate this manoeuvre.
- Bend on B1102 The Street / Mildenhall Road (Plate 6) which is identified on sheet 21 of the ARoW Plans as AS-36: vegetation clearance (branch

trimming) of the tree located within the centre of the junction may be required to allow AIL to navigate the junction but the vehicle will remain within the bounds of the highway. The branch trimming was identified within the Construction Traffic Management Plan and Travel Plan **[APP-118]** and there is no requirement to amend the extent of AS-36 as a result of the updated tracking. With the implementation of mitigation outlined within the Framework Construction Environmental Management Plan **[App-123]** there are no new or different significant ecological effects associated with the branch trimming.

- 1102 Mildenhall Road / Unnamed Road Junction (Plate 7) and the junction in question is identified on sheet 21 of the ARoW Plans as AS-37: the trailer will over sail the inside verge by approximately 4.3m and over-sail private land. This will require the existing private fence/gate to be removed or relocated as well as some minor vegetation clearance to facilitate the manoeuvre. With the implementation of mitigation outlined within the Framework Construction Environmental Management Plan **[App-123]** there are no new or different significant ecological effects associated with the vegetation clearance.
- Unnamed Road / Beck Road Junction (Plate 8) and the junction in question is identified on sheet 4 of the ARoW Plans as AS-5: the trailer will over sail the inside verge by approximately 2m. This will require the temporary removal or relocation of two existing road signs. There may also be a requirement to clear vegetation (branch trimming) to facilitate access but the vehicle will remain within the bounds of the highway. With the implementation of mitigation outlined within the Framework Construction Environmental Management Plan **[App-123]** there are no new or different significant ecological effects associated with the branch trimming.

Plate 3: A11 off-slip / B1085 Junction

Plate 4: 'S' Bends on B1085

Plate 5: Bend on B1085 / Parkside Road

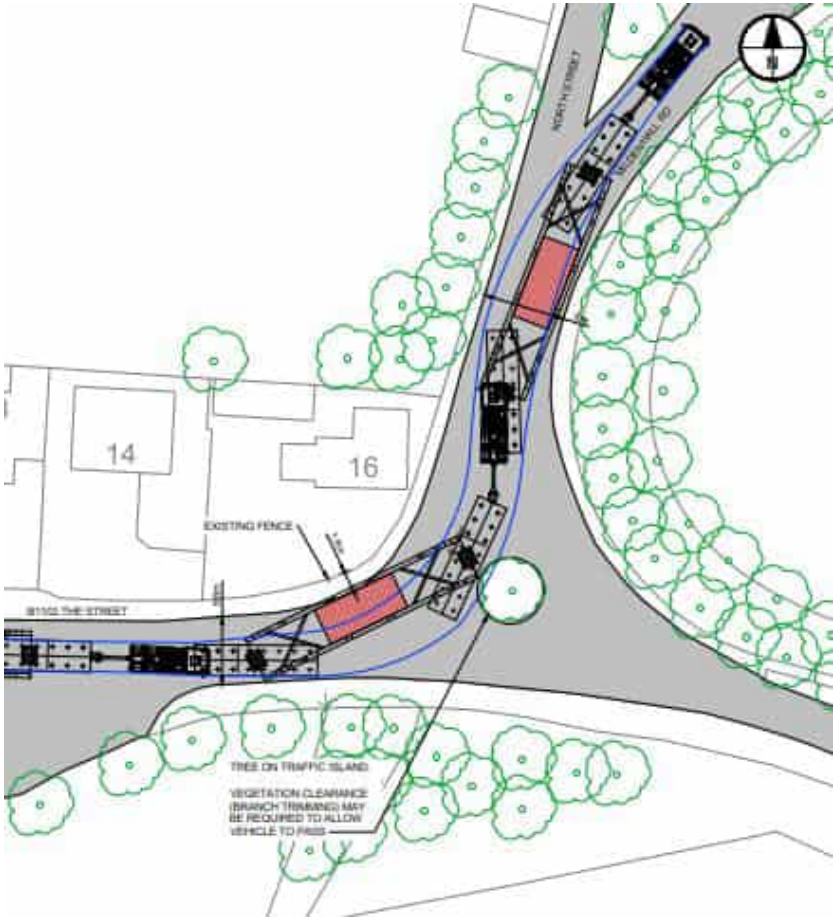


Plate 6: Bend on B1102 The Street / Mildenhall Road

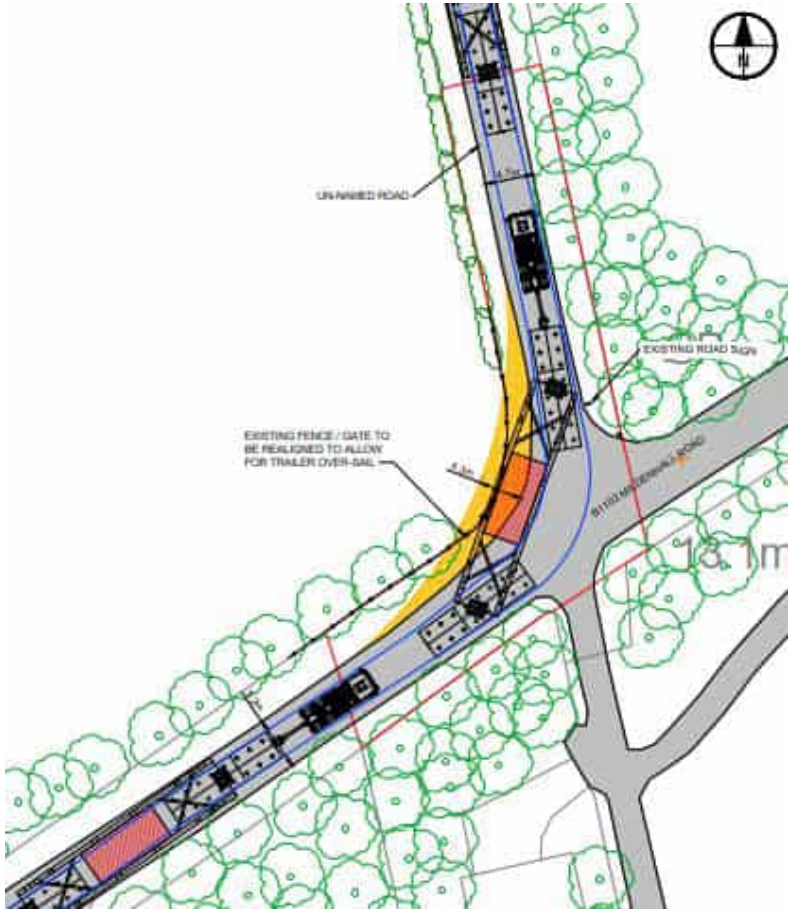


Plate 7: 1102 Mildenhall Road / Unnamed Road Junction

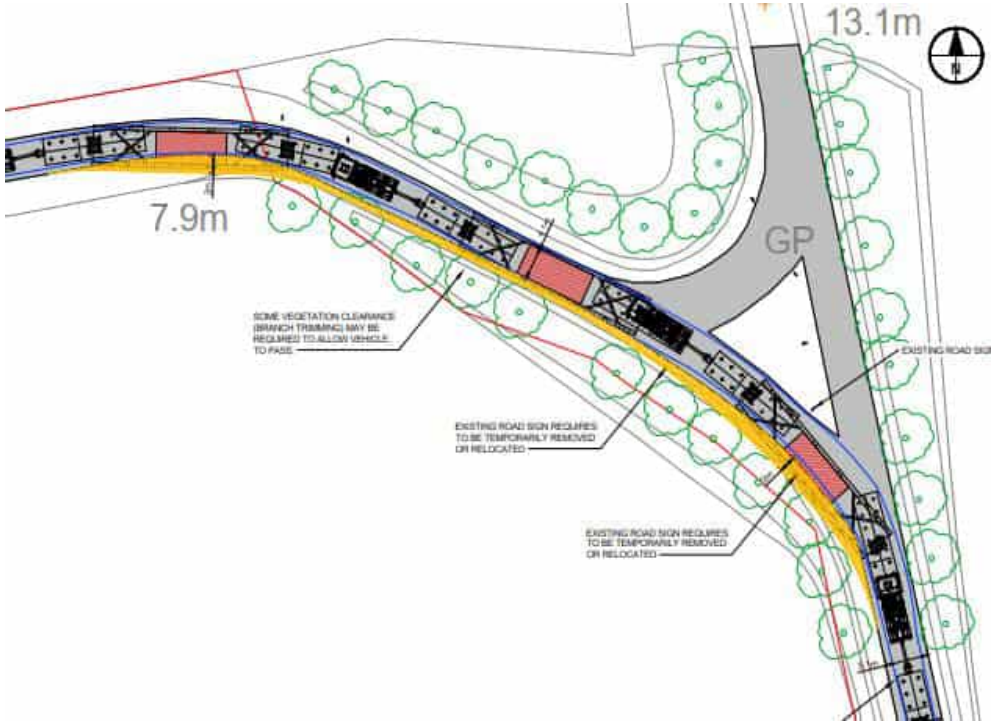


Plate 8: Unnamed Road / Beck Road Junction

5 Sunnica East Site B

5.1.1 The swept path analysis has shown that the AIL can safely manoeuvre the A11 / Elms Road junction; however, the trailer will over sail the inside grass verge of the junction by approximately 3.4m and require a street sign to be temporarily removed or relocated but the vehicle will remain within the bounds of the highway, as illustrated in Plate 9 below. The junction is identified on sheet 7 of the ARoW Plans as AS-15.

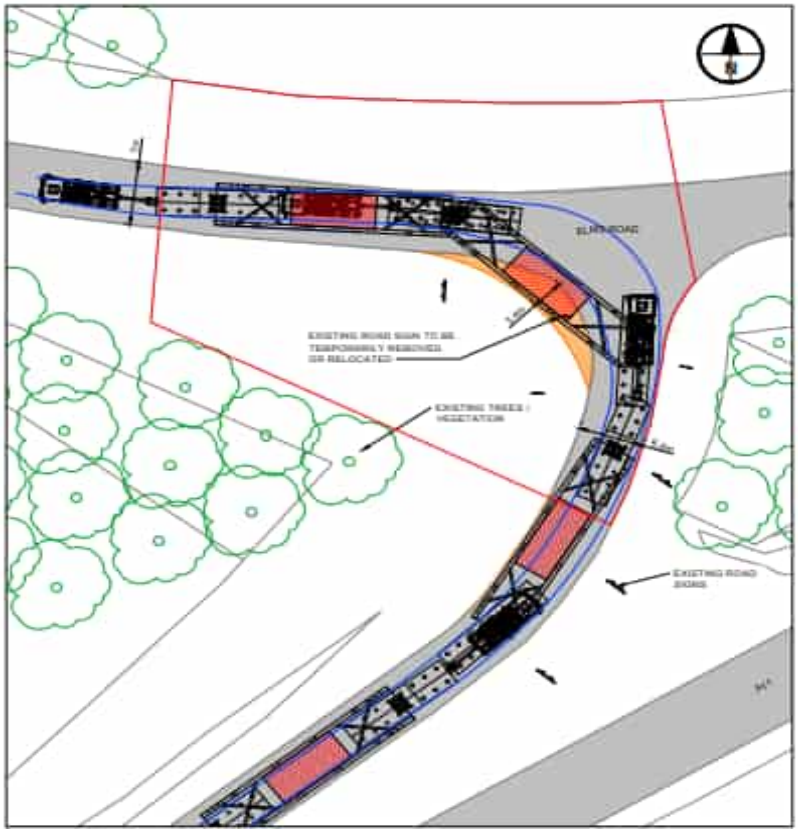


Plate 9: A11 / Elms Road Junction

6 Burwell National Grid Substation Extension Option 2

6.1.1 The AIL can safely access Burwell National Grid Substation Extension Option 2 site area via A14 to Newnham Drove along Windmill Hill Road, Oxford Street, B1103 (Burwell Road/Newmarket Road), B1102 (Isaacson Road), High Street, and Reach Road as outlined in Section 5.8 of the Construction Traffic Management Plan and Travel Plan **[APP-118]**. However as shown in Plates 10 to 14, the trailer will over sail the road in the following locations:

- B1103 Newmarket Road / B1102 Isaacson Road Junction (Plate 10) and the junction in question is identified on sheet 23 of the ARoW Plans as AS-39: the trailer will over sail the inside grass verge by

approximately 2.3m and existing vegetation may need to be cut back to allow for the trailer over sail but the vehicle will remain within the bounds of the highway. With the implementation of mitigation outlined within the Framework Construction Environmental Management Plan **[App-123]** there are no new or different significant ecological effects associated with the vegetation trimming.

- B1103 Swan Lane / Oxford Street Junction (Plate 11) and the junction in question is identified on Sheet 24 of the ARoW Plans as AS-40: the trailer will over sail the inside verge by approximately 2.9m bringing it in close proximity to the Swan Pub, but the vehicle will remain within the bounds of the highway. In addition an existing street sign will need to be temporarily removed or relocated.
- B1103 Reach Road / Weirs Drove Junction (Plate 12): the trailer will over sail the inside grass verge by approximately 2.6m, but the vehicle will remain within the bounds of the highway. An existing street sign will need to be temporarily removed or relocated.
- 'S'-Bend on Weirs Drove (Plate 13) the location of the manoeuvre is identified on Sheet 20 of the ARoW Plans as AS-35 : the trailer will over sail the inside grass verge of the first bend by approximately 3.6m. The trailer will over sail the inside grass verge of the second bend by 3.9m, this will require existing vegetation to be cut back but the vehicle will remain within the bounds of the highway during its transit of both bends. The two trees which may require pruning have low/moderate bat roost potential; however, no bat roosts were identified at the time of the previous survey in 2021. A re-survey for bats will be carried out prior to works being carried out. As required in Table 3-3 Biodiversity of the Framework Construction Environmental Management Plan **[App-123]**, the Contractor will updated species surveys, including bats, great crested newt, breeding birds, otter, water vole and badger, to re-confirm the status of protected species identified, to inform mitigation requirements and support protected species licence applications, if required by Natural England.
- Weirs Drove / Newnham Drove Junction (Plate 14) the location of the manoeuvre is identified on sheet 20 of the ARoW Plans as AS-34 and AS-35: the trailer will over sail the inside grass verge by approximately 8.2m but the vehicle will remain within the bounds of the highway. An existing street sign will need to be temporarily removed or relocated.
- Newham Drove (Plate 14): widening of Newnham Drove will be required to facilitate access to the Burwell National Grid Substation Extension Option 2as identified currently on sheet 20 of the ARoW Plans as AS-34.

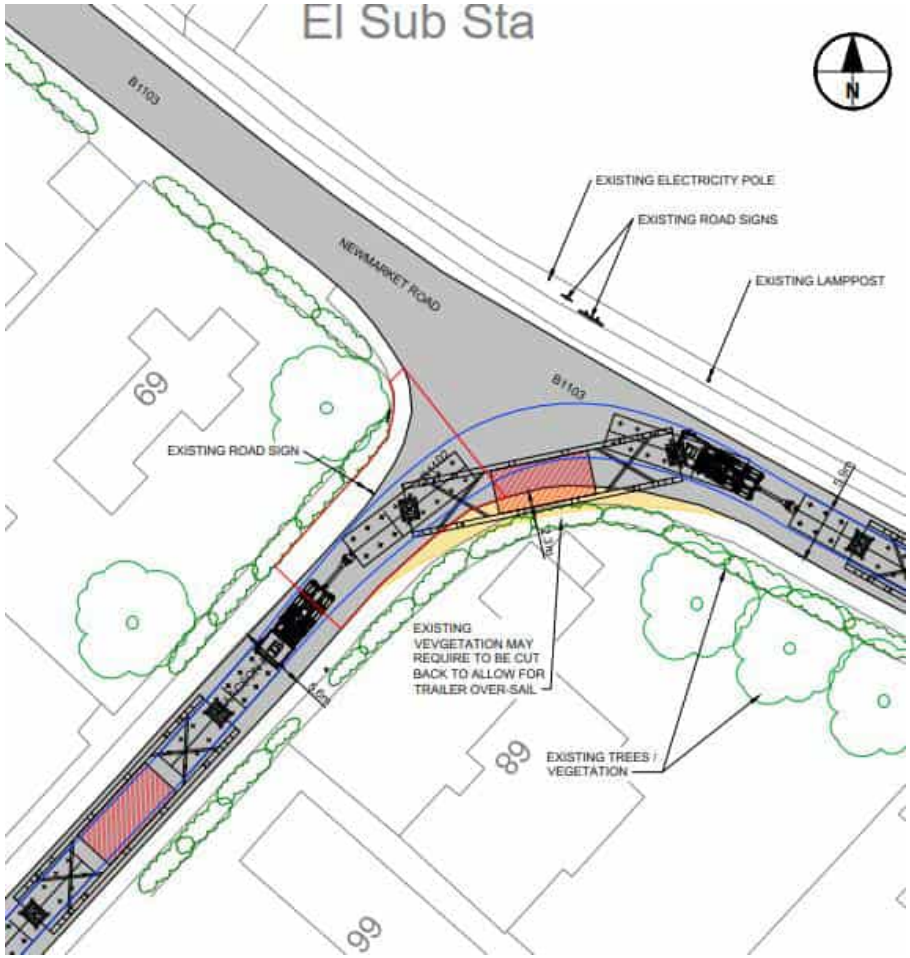


Plate 10: B1103 Newmarket Road / B1102 Isaacson Road Junction

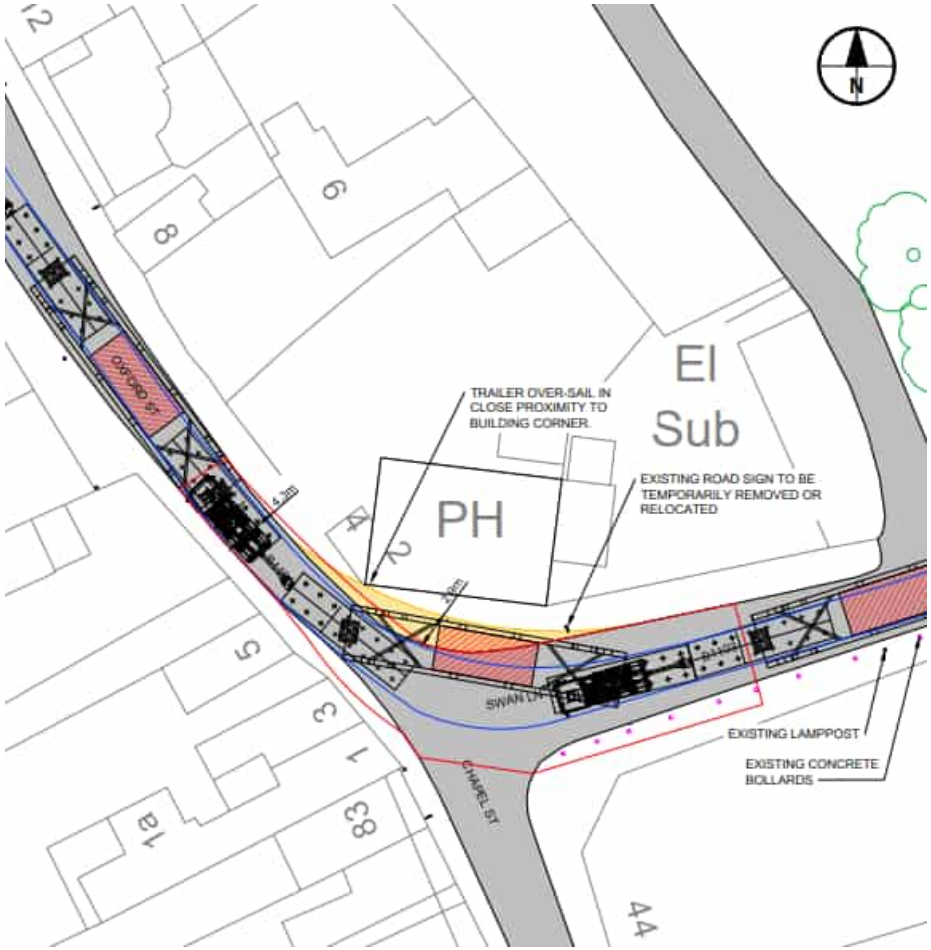


Plate 11: B1103 Swan Lane / Oxford Street Junction

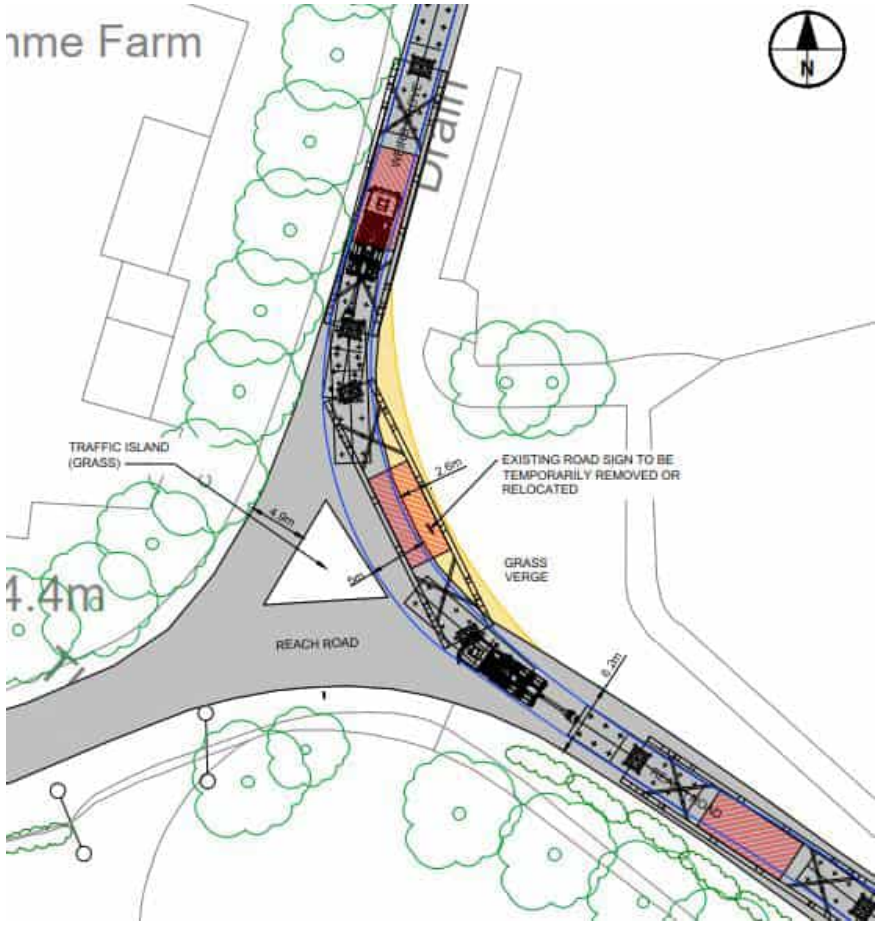


Plate 12: B1103 Reach Road / Weirs Drove Junction

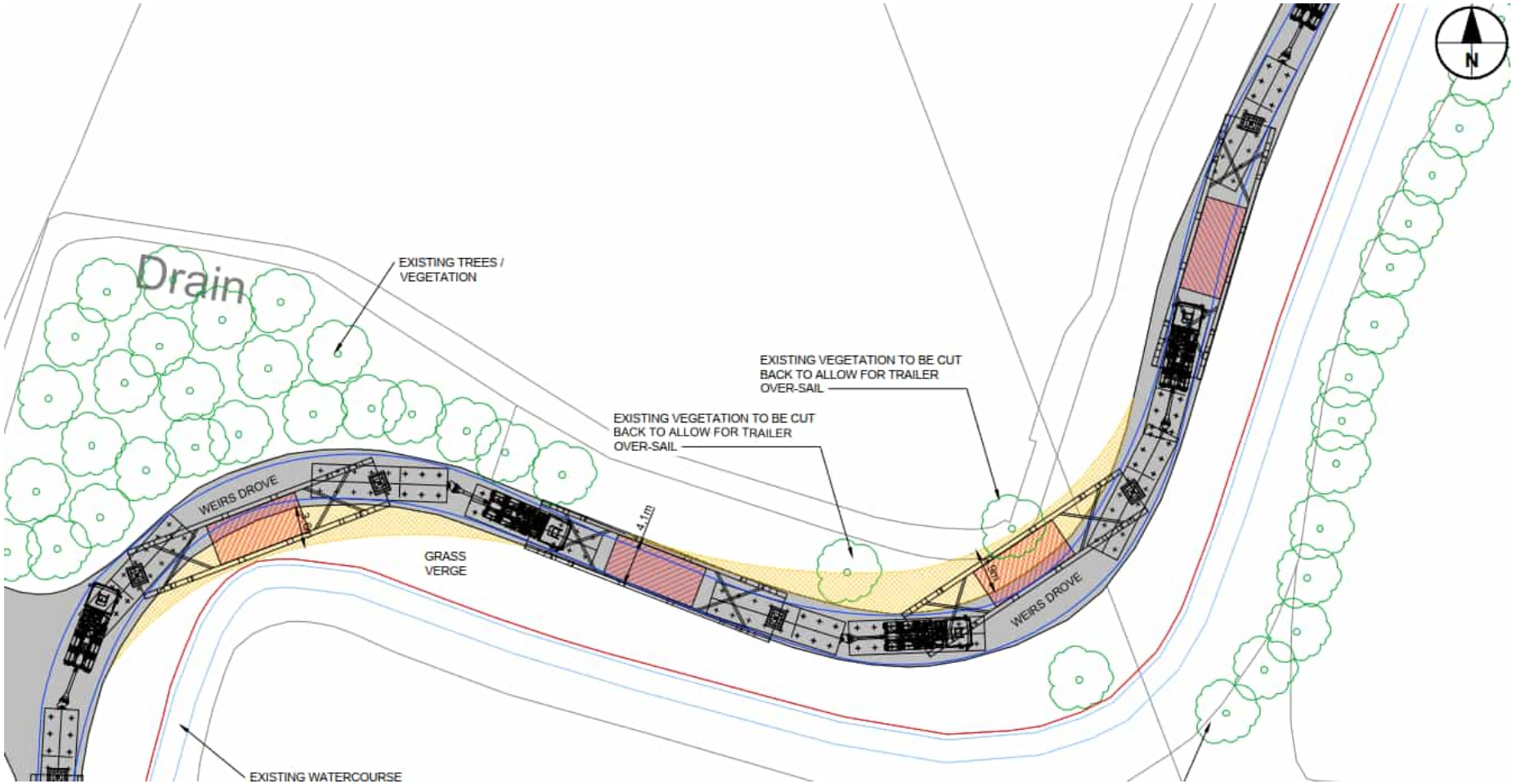


Plate 13: 'S'-Ben on Weirs Drove

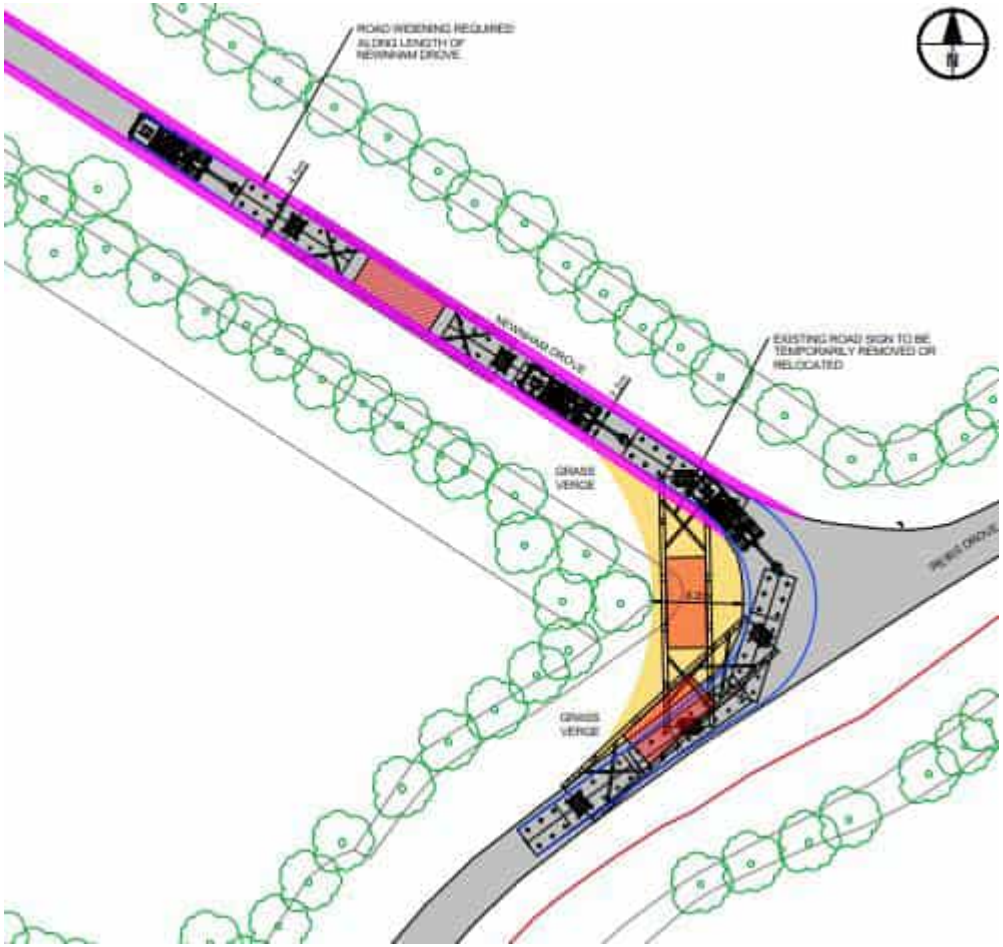
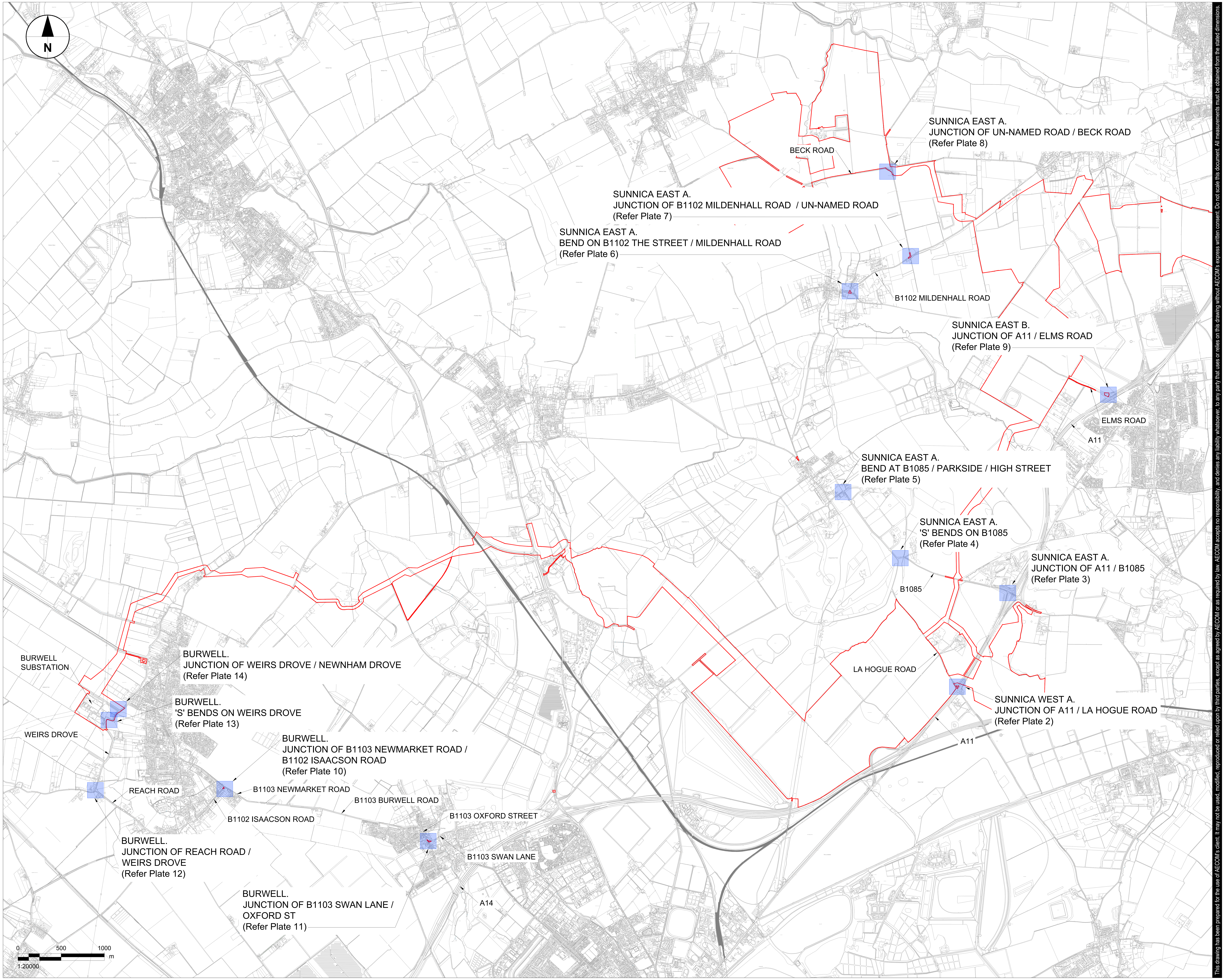


Plate 14: Weirs Drove / Newnham Drove Junction

Figures



AECOM

Project

SUNNICA
ENERGY FARM

Client

sunnica energy farm

Consultant

Aecom
1 Tanfield
Edinburgh
EH3 5DA
United Kingdom
Fax +44 (0)131 301 8699
Tel +44 (0)131 301 8600
www.aecom.com

Notes

1. THIS DRAWING IS BASED ON ORDNANCE SURVEY MASTERMAP MAPPING.
2. FOR DETAILS OF VEHICLE TRACKING PINCH POINTS, REFER TO INDIVIDUAL TRACKING DRAWINGS.

ORDER LIMITS

ISSUE/REVISION

Rev	Date	Description	Drn/Chk/Appr
-	20.07.22	FIRST ISSUE	DWT/EP/CGY

Key Plan

Purpose Of Issue

FOR INFORMATION

Project Number

60589004

Sheet Title

FIGURE 1
LOCATION OF VEHICLE
TRACKING PINCH POINTS

Sheet Number

60589004-ACM-XX-00-DR-CE-1020

Scale: 1:20,000 @ A1 **Rev:** -

ISO A1 594mm x 841mm
Project Management Initials: Designer: DWT Checked: EP Approved: CGY
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