

Rosefield Solar Farm

Environmental Statement

Volume 4
Appendix 15.1: Transport Assessment
(Clean)

EN010158/APP/6.4.2
Revision 02
Deadline 4
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Rosefield Energyfarm Limited

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastructure Planning
(Applications: Prescribed Forms
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1. Introduction

1.1. Purpose of the Report

- 1.1.1. This Transport Assessment has been prepared on behalf of Rosefield Energyfarm Limited ('the Applicant') to review the transport access matters in relation to the Development Consent Order (DCO) application for the construction and operation of Rosefield Solar Farm (hereafter referred to as the 'Proposed Development').
- 1.1.2. This document has been updated at Deadline 4 to provide the results of junction modelling at the A41 / Station Road junction, which is included in Annex 4 and discussed in section 6.5. References to other application documents have not been updated from the original submission. Please refer to the **Guide to the Application [EN010158/APP/1.2.10]** for the list of current versions of documents.

1.2. The Order Limits

- 1.2.1. The extent of the Order limits are shown in **Location, Order Limits and Grid Coordinate Plans [EN010158/APP/2.1]** and the Proposed Development is described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and shown spatially on the **Works Plans [EN010158/APP/2.3]**.

1.3. The Proposed Development

- 1.3.1. The Proposed Development comprises the construction, operation (including maintenance), and decommissioning of solar photovoltaic ('PV') development and energy storage, together with associated infrastructure and an underground cable connection to the National Grid East Claydon Substation.
- 1.3.2. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts ('MW').
- 1.3.3. The principal components of the Proposed Development include:
- Solar PV development consisting of:
 - Ground mounted Solar PV generating station. The generating station would include Solar PV modules and mounting structures; and
 - Balance of Solar System (BoSS) which comprises: Inverters, Transformers, Switchgear and Combiner Boxes.
 - A project substation (the 'Rosefield Substation') compound which may include Transformers, Switchgear, reactive power compensation bays,

disconnectors, circuit breakers, busbars, control equipment, lightning surge arrestors, building(s) including office, control, functions, material storage, welfare facilities, firewalls and a security cabin and parking as well as wider monitoring and maintenance equipment. The buildings within the compound may also include roof-mounted solar panels and/or rain and/or grey water harvesting and recycling systems;

- 400kV Grid Connection Corridor to connect the Rosefield Substation and National Grid East Claydon Substation;
- A Main Collector Compound and two Satellite Collector Compounds comprising: Switchgear, Transformers, ancillary equipment, and operation, maintenance and welfare facilities and security cabins. The buildings and security cabins across these compounds may also include roof-mounted solar panels and/or rain and/or grey water harvesting and recycling systems;
- Battery Energy Storage System (BESS) compound including batteries and associated Inverters, Transformers, Switchgear and ancillary equipment and their containers, office/control/welfare buildings, enclosures, fencing and acoustic fencing, monitoring systems, air conditioning, electrical cables, fire safety infrastructure, and operation and maintenance security facilities. The buildings across these compounds may also include roof-mounted solar panels and/or rain and/or grey water harvesting and recycling systems;
- Cabling to connect the Solar PV modules and the BESS to the Satellite and Main Collector Compounds, the Main Collector Compound to the Rosefield Substation, and the Rosefield Substation to the National Grid East Claydon Substation;
- Ancillary infrastructure works including: boundary treatment, security equipment, lighting, fencing, landscaping, internal access tracks, works to facilitate vehicular access, earthing devices, earthworks, surface water management, and any other works identified as necessary to enable the Proposed Development;
- Green and blue infrastructure, recreation and amenity works including: amenity improvements;
- Site-wide operational monitoring and security equipment; and
- Highways infrastructure improvements and safety works including, where necessary: minor junction improvement works, road widening, passing places and works to facilitate vehicular access to the Site.

1.4. Structure of this Report

- 1.4.1. Following this introduction, the Transport Assessment (TA) report is structured as follows:

- The Proposed Development;
- Study Methodology;
- Baseline Conditions;
- Trip Generation and Distribution;
- Traffic Impact Assessment;
- Proposed Mitigation; and
- Summary and Conclusions.

1.5. Legislation and Planning Policy

1.5.1. Consideration has been given to national and local policy and guidance relevant to this assessment. The policy and guidance documents considered within this assessment are as follows:

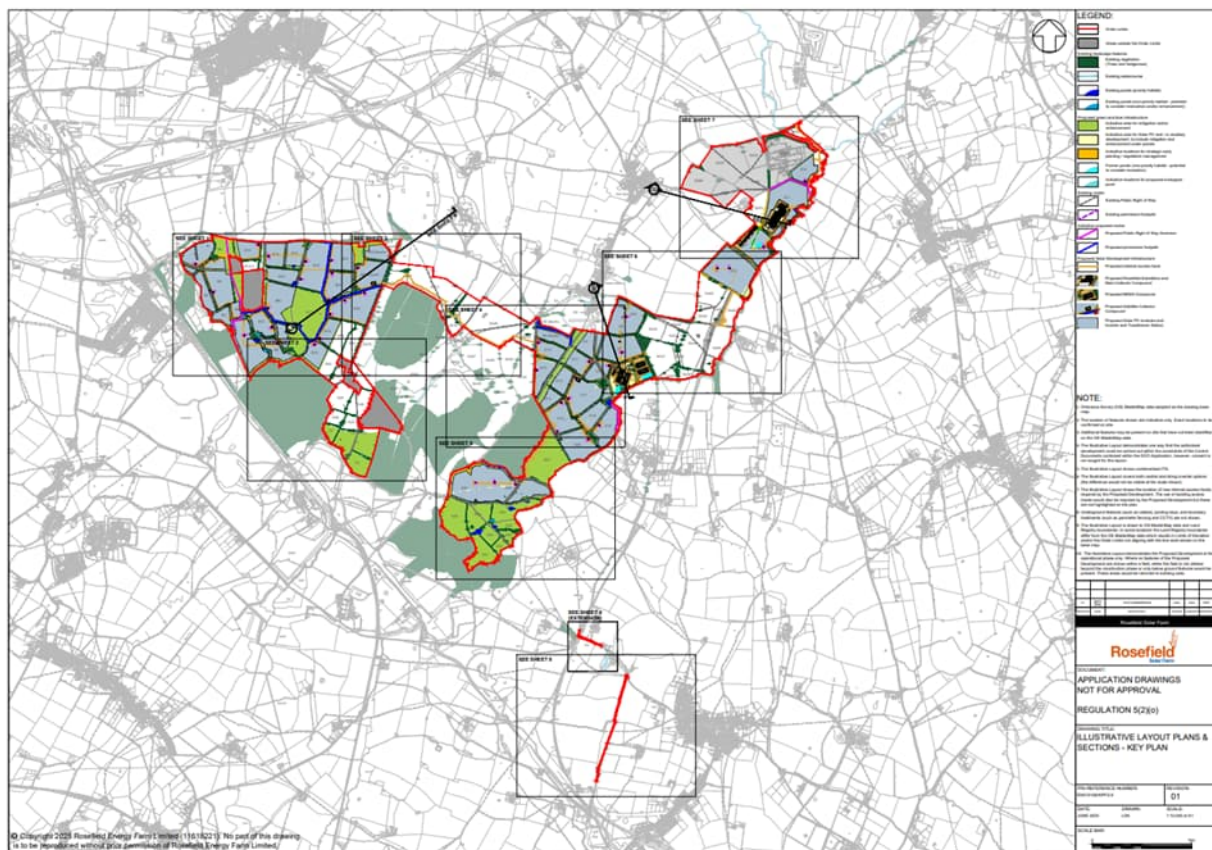
- Overarching National Policy Statement for Energy (NPS EN-1) (2023) (Ref.1-1);
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023) (Ref 1-2);
- Buckinghamshire Council, Highways Development Management Guidance, 2018 (Ref 1-7); and
- Buckinghamshire Council, Local Transport Plan 4, 2018 (Ref 1-5).
- Planning Practice Guidance “Travel Plans, Transport Assessments and Statements” (Ref 1-8);
- Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023) (Ref 1-9); and
- Design Manual for Roads & Bridges (DMRB) (Ref 1-10).

2. The Proposed Development

2.1. Site Location

- 2.1.1. The Proposed Development is located in close proximity to the settlements of Calvert, Middle Claydon, Botolph Claydon, East Claydon and Hogshaw. Steeple Claydon, Edgcott, Shipton Lee, Quainton, Granborough and Winslow are also located within 3km of the Site.
- 2.1.2. The High Speed Rail 2 (HS2) works area is located adjacent to the western edge of Parcel 1 and Parcel 1a. It is approximately 100m from Parcel 1 and 1a and less than 500m from Parcel 2. This section of HS2 is currently in its construction phase.
- 2.1.3. The Site measures approximately 675.05 hectares (ha) and is divided into four land parcels and is illustrated in **Figure 1**, outlined in red.

Figure 1: Proposed Development Layout



- 2.1.1. The Site is subdivided into four Parcels; namely:

- Parcel 1: The Western development area, located to the east of Calvert and to the south of Calvert Road. This would comprise solar arrays and associated access tracks;
- Parcel 1a: The Southern development area, located to the south east and adjacent to the HS2 development corridor and Greatmoor Energy from Waste (EfW) plant. This would comprise of mitigation areas and associated access tracks;
- Parcel 2: The Eastern development area, located to the south of Botolph Claydon village and to the west of Claydon Road. This would comprise solar arrays, a Battery Energy Storage System (BESS) development, and associated access tracks; and
- Parcel 3: The Northern development area, located to the north of Granborough Road and to the south of the National Grid East Claydon Substation. This area would feature solar arrays, Rosefield Substation and electrical grid connection infrastructure.

3. Study Methodology

3.1. Introduction

3.1.1. There are three phases of the Proposed Development, which have been considered in this assessment and are as follows:

- the construction phase;
- the operational (including maintenance) phase; and
- the decommissioning phase.

3.2. Project Phases

3.2.1. Of the three phases, the construction phase is considered to have the greatest impact in terms of transport and potential impacts on the highway network and sensitive receptors. Construction plant, bulk materials and electrical components will be transported to Site, potentially resulting in temporary significant increases in traffic on the study network.

3.2.2. The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels found normally on the highway network.

3.2.3. The decommissioning phase involves fewer trips on the highway network than the construction phase, as minor elements of infrastructure are likely to be left in place, adding to local infrastructure that can potentially be used for future agricultural or leisure uses in the future.

3.3. Scoping Discussions

3.3.1. The Applicant submitted a request for EIA Scoping Opinion **ES Volume 4, Appendix 5.3: EIA Scoping Opinion Response Matrix [EN010158/APP/6.4]** to the Planning Inspectorate (PINS) in respect of the Environmental Impact Assessment (EIA) which included a section considering traffic and transport.

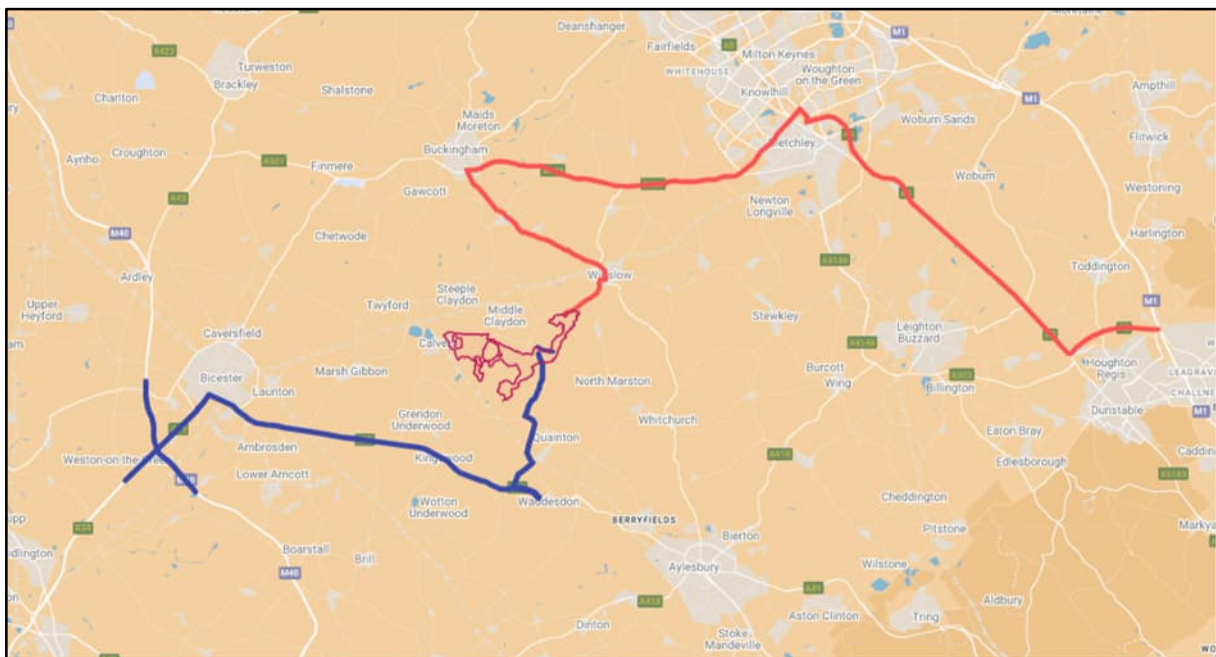
3.3.2. Further consultation with officers from Buckinghamshire Council, Oxfordshire County Council and National Highways have been held and the Applicant is grateful for the input of officers from all of the highway authorities.

4. Baseline Conditions

4.1. Access Arrangements

- 4.1.1. All construction traffic, with the sole exception of Abnormal Indivisible Loads (AIL) will approach the Site from the A41, located to the south of the Order Limits. Deliveries for construction materials would be made by Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGV).
- 4.1.2. Access from the A41 will be taken from Station Road/Dewes Way, Snake Lane/Fidlers Field and Claydon Road. The proposed access route is illustrated in **Figure 3** (in blue).
- 4.1.3. Construction traffic will originate from across the study area road network, with all traffic bypassing Bicester to the south.

Figure 2: Proposed Access Strategy



- 4.1.4. A principal access junction is to be built on Claydon Road, providing access to the Parcels 1, 1a, and 2 via a network of upgraded and new private access tracks. Access between Parcels 1 and 1a will cross the minor road, Three Points Lane.
- 4.1.5. Access to Parcel 3 will be taken from the south from a new junction on Granborough Road. This will be used by all construction traffic, with the sole exception of AIL traffic. AIL traffic is unable to use the A41 corridor due to a low rail bridge (to the north of Blackthorn). As such, the National Highways High and Heavy Load route from Winslow, specifically designated to access National Grid East Claydon Substation, is to be

used, with access taken from a new junction on East Claydon Road, located to the northeast of the existing substation access junction.

- 4.1.6. It is expected that AIL traffic associated with the transport of transformer components will commence from the M1 corridor and would proceed to the Proposed Development via Milton Keynes, Buckingham and Winslow. The AIL route is illustrated in red in **Figure 3**.
- 4.1.7. The number of AIL movements is expected to be no greater than 14 inbound components across the whole construction period.
- 4.1.8. The proposed AIL Route is described in detail in **Annex 3: AIL Route Survey Report**.

4.2. Proposed Operational and Maintenance Access Strategy

- 4.2.1. During the operational phase, up to 24 LGV trips per day, on average, are predicted to cater for cleaning of panels and general Site maintenance.
- 4.2.2. When longer term maintenance/rolling replacement of battery units or panels is required, HGV access will be necessary with up to 12 HGV trips potentially per day. The number of vehicle trips occurring during this phase will be well below the number of movements assessed for the construction phase and significantly below the overall IEMA guidance thresholds. As such, no further assessment is required.
- 4.2.3. Access infrastructure to enable maintenance and potential replacement of larger equipment on Site will be retained to facilitate access, when required.
- 4.2.4. Access would be via the construction access points on Claydon Road and Granborough Road.

4.3. Proposed Decommissioning Access Strategy

- 4.3.1. At the end of the operational life of the Proposed Development, the Solar PV development, BESS and all associated above ground equipment will be completely removed in line with the Decommissioning Environmental Management Plan (DEMP) **[EN010158/APP/7.4]**.
- 4.3.2. At this stage, it is not possible to accurately forecast the traffic impacts during the decommissioning phase, as projections of the baseline data into the future would not be accurate.
- 4.3.3. The levels of traffic associated with the decommissioning of the Proposed Development will be less than that during construction since some of the below ground elements will be left in situ and the access tracks may be

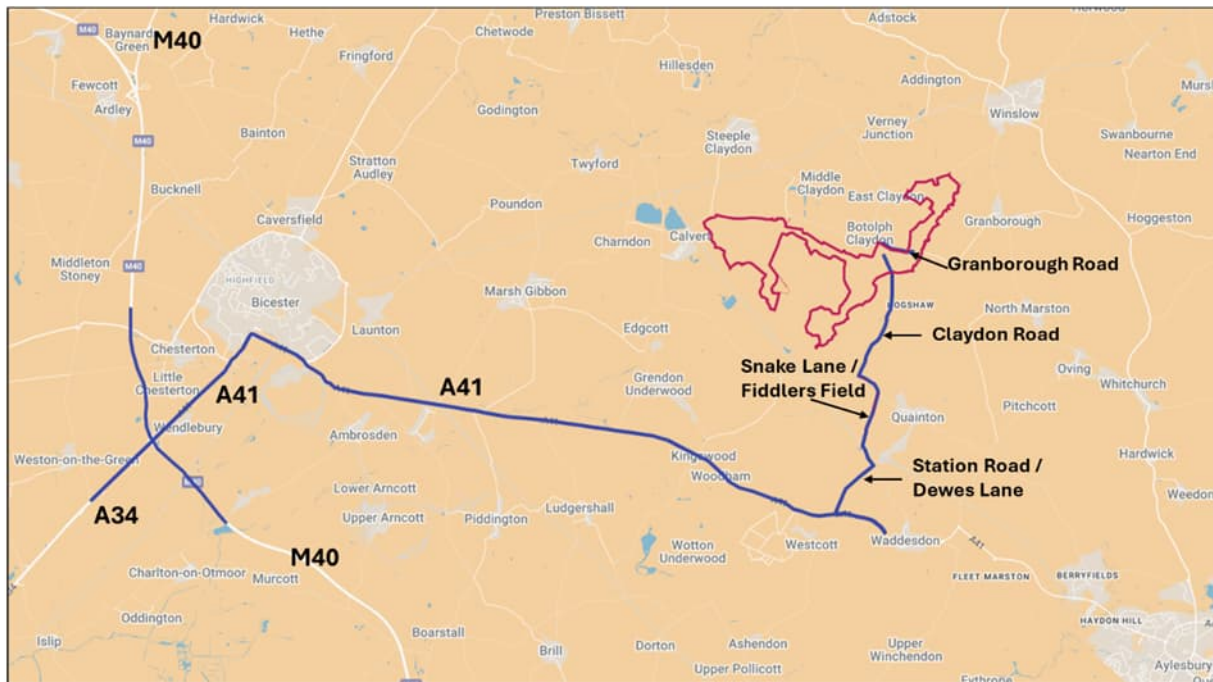
retained for use by the landowners, as detailed in the Decommissioning Statement.

- 4.3.4. To protect future stakeholders, it is proposed that a Decommissioning Traffic Management Plan (DTMP) is prepared prior to decommissioning works commencing and that this is secured via a Development Consent Order (DCO) requirement.

4.4. Study Area Determination

- 4.4.1. The study area has been based on those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of the other developments in the area, Ordnance Survey (OS) plans and an assessment of the potential origin locations of construction staff and supply locations for construction materials.
- 4.4.2. Bulk materials for use in the Site will be sourced from existing supply locations located to the west.
- 4.4.3. Electrical components, plant and general deliveries are likely to originate along the M40 corridor from the Southeast and Midlands.
- 4.4.4. The assessment has assumed that staff engaged during the construction process will be based within the major urban areas of Bicester and Aylesbury during the construction phase.
- 4.4.5. The proposed study area therefore includes the highway links most likely to be impacted by the proposed movements associated with the Proposed Development and includes:
- The A34 to the southwest of Bicester;
 - The M40 to the north and south of Junction 9;
 - The A41 from its junction with the M40 through to Waddesdon;
 - Station Road/Dewes Lane from its junction with the A41 to the Buckingham Railway Centre;
 - Snake Lane/Fidlers Field from its junction at the Buckingham Railway Centre to its junction with Claydon Road;
 - Claydon Road from its junction with Snake Lane/Fidlers Field to its junction with Quainton Road/Granborough Road;
 - Granborough Road between its junction with Claydon Road and the proposed site access junction. A plan illustrating the proposed study area is provided in **Figure 4**.

Figure 3: Study Area Network



- 4.4.6. Effects associated with construction traffic generated by the Proposed Development would be most pronounced in close proximity to the Proposed Development access junctions and on the final approaches to these locations. As vehicles travel away from the Proposed Development, they would disperse across the wider highway network, thus diluting any potential effects.
- 4.4.7. It is therefore expected that the effects relating to construction traffic are unlikely to be significant beyond the study area identified above.

4.5. Pedestrian, Equestrian & Cyclist Links

- 4.5.1. A review of the Buckinghamshire Council Public Rights of Way (PRoW) map¹ has been undertaken. There are a number of PRoW routes located within the Site and these are noted in the **Street, Rights of Way and Access Plan [EN010158/APP/XX]**.
- 4.5.2. Wherever possible, existing PRoW routes would be respected and potential enhancements could be provided where required. Further details are provided in the **Outline Rights of Way and Access Management Strategy (RoWAS) [EN010158/APP/7.8]**.
- 4.5.3. Outwith the development area, PRoW routes do interact with the proposed construction traffic access routes. These include:
- Station Road/Dewes Lane
 - PRoW WES/9/5;
 - PRoW QUA/29A/2;
 - PRoW QUA/30/1;
 - Snake Lane/Fidlers Field
 - PRoW QUA/31/4;
 - PRoW QUA/23/1;
 - PRoW QUA/24/1;
 - PRoW QUA/22A/1;
 - PRoW QUA/27/2;
 - Claydon Road
 - PRoW QUA/38/2;
 - PRoW QUA/11/1;
 - PRoW QUA/40/4 (Bridleway);
 - PRoW HOG/7/1;
 - PRoW HOG/7/2;
 - Granborough Road
 - PRoW ECL/6/1
- 4.5.4. The PRoW routes are used by pedestrian, cyclist and equestrian users.

¹ <https://prow.buckscc.gov.uk/standardmap.aspx>

- 4.5.5. In addition to the PRoW network, the Buckinghamshire Greenway is proposed to pass through the Site. The established Bernwood Jubilee Way also passes through the Site.
- 4.5.6. A review of the National Cycle Network (NCN) Route map² has also been undertaken. The closest NCN route is NCN 51 “Varsity Way – Oxford to Cambridge”.
- 4.5.7. NCN 51 passes to the north of the Site and does not interact with any of the proposed construction traffic delivery route highways. There is however a short interaction with the potential AIL route on Vicarage Road in Winslow, where the route shares a 310m section of highway with the AIL route. Given that AIL traffic will be under strict police escort, the potential interactions are considered to be very low and wholly controllable.

4.6. Road Access

The M40

- 4.6.1. The M40, located to the west of the Site, forms part of the Strategic Road Network (SRN) and is operated by National Highways on behalf of the Secretary of State for Transport. The M40 is a modern three lane motorway connecting London to Birmingham, via Oxford and as a trunk road, is entirely suitable for HGV and high-volume traffic flows.

The A41

- 4.6.2. The A41 provides connections from the M40 to Bicester and Aylesbury and functions as a district distributor road and southern bypass of Bicester. The road is operated by Oxfordshire County Council and Buckinghamshire Council within their respective administrative areas.
- 4.6.3. The A41 varies in width between Bicester and Waddesdon but is predominantly a 7.5m wide road capable of accommodating HGV traffic and high volumes of traffic.

Station Road/Dewes Lane

- 4.6.1. Station Road connects the A41 to Quainton. The road is known locally as Station Road or Dewes Lane and both names are used in this report. The road is approximately 6m in width and has been used for access by HS2 traffic. The road features modern, narrow passing places and is capable of accommodating HGV traffic.

² <https://explore.osmaps.com/?lat=51.912204&lon=-1.034599&zoom=11.2335&style=Standard&type=2d&overlays=os-ncn-layer>

4.6.2. Station Road/Dewes Lane is maintained by Buckinghamshire Council.

Snake Lane/Fidlers Field

4.6.4. Snake Lane, also known as Fidlers Field, provides a bypass route to the west of Quainton and joins Claydon Road to the north. The road is maintained by Buckinghamshire Council.

4.6.5. Snake Lane/Fidlers Field is partly used by HS2 traffic to access a construction compound and is due to be rebuilt and realigned as part of the HS2 works to provide a new bypass for a life expired structure crossing the railway at the Buckinghamshire Railway Centre (BRC).

4.6.6. The road is in a very poor condition and would need to be reconstructed and resurfaced prior to the Proposed Development works commencing, should this work have not been undertaken by Buckinghamshire Council or HS2.

Claydon Road

4.6.7. Claydon Road is a local distributor road providing local north – south connections. The road is operated by Buckinghamshire Council and is of sufficient width to accommodate two-way HGV and agricultural traffic. The road is in reasonable condition at present, although there are localised areas where road and verge repairs would be required.

Quainton Road

4.6.8. Quainton Road provides connections from the village of Botolph Claydon to Claydon Road. The road is operated by Buckinghamshire Council and is of sufficient width to accommodate two-way HGV and agricultural traffic. No construction traffic is proposed to access Botolph Claydon village.

Granborough Road

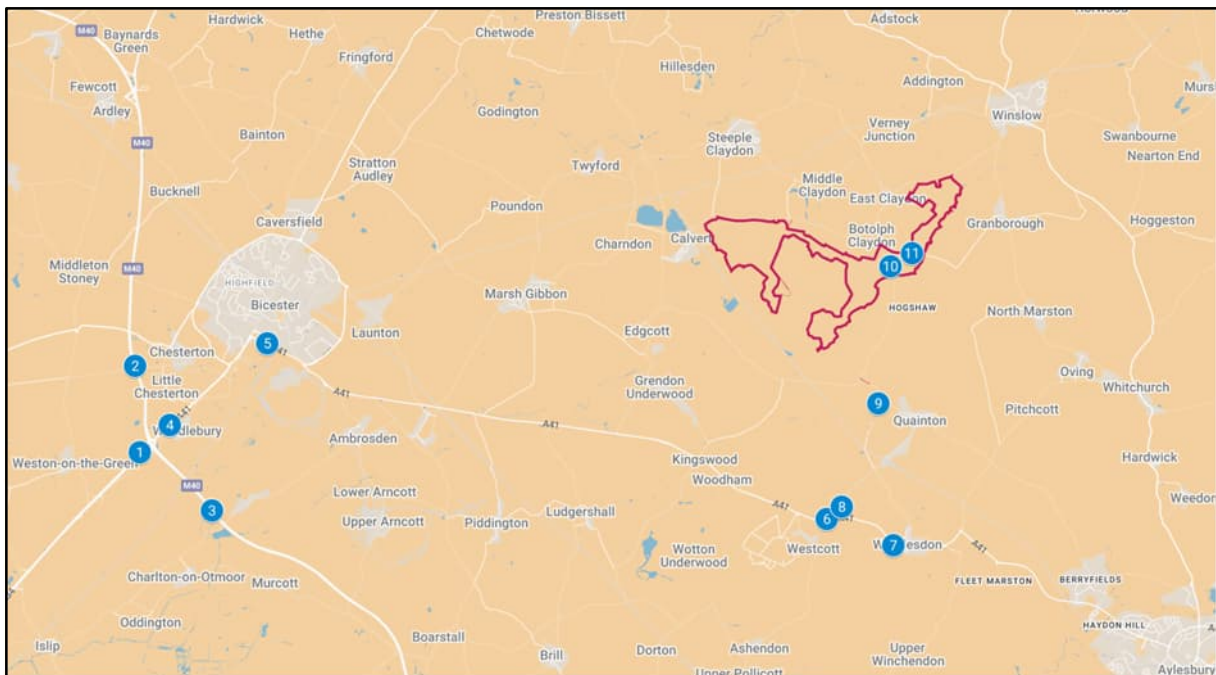
4.6.9. Granborough Road provides connections from Quainton Road and Claydon Road to Granborough. The road is narrower than other roads within the study area at approximately 4.5m - 5m in width and provides local connections and agricultural connections in the area. It is also maintained by Buckinghamshire Council.

4.7. Existing Traffic Conditions

4.7.1. In order to assess the impact of construction traffic on the study area, Automatic Traffic Counts (ATC) were undertaken throughout the study area in January 2024, following consultation and agreement of Buckinghamshire Council.

- 4.7.2. Traffic flows were observed at six locations, noting the volume, vehicle class and directions of Cars & LGV and HGV traffic. The locations of the ATC sites are illustrated in **Figure 5**.
- 4.7.3. To supplement the ATC data, data from the Department for Transport's (DfT) road traffic database³ was also obtained to provide a review of the wider study area. Five survey locations from the DfT were used. These locations are also noted in **Figure 5**.

Figure 4: Traffic Survey Locations



- 4.7.4. The traffic survey data for 2024 has been summarised in **Table 4.1**.

Table 4.1: 2024 Traffic Survey Summary (Per Day)

Ref No	Source	Description	Cars & LGV	HGV	Total Traffic
1	DfT	A34	61,141	8,386	69,527
2	DfT	M40 North	92,727	14,952	107,679
3	DfT	M40 South	61,909	7,495	69,404
4	DfT	A41	31,169	2,137	33,306

³ <https://roadtraffic.7dft.gov.uk/#/6/55.254/-6.053/basemap-regions-countpoints>

Ref No	Source	Description	Cars & LGV	HGV	Total Traffic
5	DfT	A41 Bicester	21,267	1,906	23,173
6	ATC	A41 West	10,509	2,326	12,836
7	ATC	A41 East	9,471	2,308	11,780
8	ATC	Station Road / Dewes Lane	821	250	1,071
9	ATC	Snake Lane / Fidlers Field	91	30	120
10	ATC	Claydon Road	1,241	238	1,479
11	ATC	Granborough Road	264	81	345

4.7.5. The traffic surveys were undertaken during work phases for HS2 and include traffic associated with this long-term construction project.

4.8. Road Safety

- 4.8.1. A review of traffic accidents on the online road safety resource Crashmap.co.uk for a five-year period (2019 – 2023) has indicated that there were five recorded traffic accidents on the proposed access route from the A41 to the proposed Site access junction.
- 4.8.2. Accidents are recorded as Slight (damage only incidents), Serious (injury accidents) and Fatal accidents (those resulting in a death).
- 4.8.3. Three accidents occurred at the junction of Station Road/Dewes Lane and Snake Lane/Fidlers Field, located to the northeast of the HS2 Station Road construction compound access junction. The first accident occurred on 13 January 2022, the second occurred on 24 January 2022 and third on 15 February 2023. Both accidents in 2022 were classified as being Serious (i.e. an accident that resulted in an injury). The 2023 accident was classed as Slight.
- 4.8.4. The first accident involved one casualty, the second and third both involved two. Both Serious accidents involved one car and one HGV. The Slight accident involved two cars, one of which was driven by a Young Driver (a person aged 25 or younger).
- 4.8.5. An accident on Quainton Road, to the east of Botolph Claydon occurred on 3 October 2021. This involved one car only.
- 4.8.6. A further “Slight” accident was recorded on 27 November 2022 on Quainton Road, east of Botolph Claydon, near the junction with

Granborough Road. This accident involved one motorcycle and no other vehicles.

- 4.8.7. No accidents have been recorded at other locations within the five-year period, including at the junction with the A41. No accidents have involved vulnerable road users such as pedestrians, cyclists, children or young drivers.

4.9. Future Year Traffic Conditions

- 4.9.1. Construction of the Proposed Development is assumed to commence in 2029 and will be completed in 2031.
- 4.9.2. To assess the likely effects during the construction phase, base year traffic flows were determined by applying a National Road Traffic Forecast (NRTF) low growth factor to the surveyed traffic flows.
- 4.9.3. The NRTF low growth factor for 2024 to 2029 is 1.026. These factors were applied to the 2024 survey data, previously outlined in **Table 4.1**, to estimate the baseline traffic conditions within the peak period of construction, estimated to occur in 2029.
- 4.9.4. The 2029 base traffic flows are shown in **Table 4.2**.

Table 4.2: 2029 Baseline Traffic Flows (Per Day)

Ref No	Description	Cars & LGV	HGV	Total Traffic
1	A34	62,731	8,604	71,335
2	M40 North	95,138	15,340	110,478
3	M40 South	63,519	7,690	71,209
4	A41	31,980	2,193	34,172
5	A41 Bicester	21,820	1,956	23,776
6	A41 West	10,783	2,387	13,169
7	A41 East	9,718	2,368	12,086
8	Station Road/ Dewes Lane	842	256	1,099
9	Snake Lane/ Fidlers Field	93	31	124
10	Claydon Road	1,273	244	1,518
11	Granborough Road	271	83	354

Please note that rounding errors may occur.

4.10. Committed Developments

- 4.10.1. A review of committed development has been undertaken based upon the short list presented in **ES Volume 2, Chapter 17: Cumulative Effects [EN010158/APP/6.2]**.
- 4.10.2. In line with agreed transport planning guidance, only committed developments will be included in the assessment. These will be included in the baseline traffic flows, should the committed development be complete or likely to be complete by 2029.
- 4.10.3. Committed developments to be included in the assessment will be those of a significant scale, i.e. where their development impact exceeds a 10% increase in traffic flows on a link within the study area network.
- 4.10.4. Planning applications that are in development, scoping or are undetermined are not committed will not be included in the assessment.
- 4.10.5. A review of the potential committed developments has been undertaken, based upon the criteria described above. The list of applications is illustrated in **Annex A**.
- 4.10.6. The committed developments that are included in the assessment are as follows:
- 22/00125/REF: New Category C Prison, known at Grendon Springhill 2; and
 - HS2.
- 4.10.7. HS2 traffic flows that are accurate for 2029 are not publicly available and as such, the existing HS2 flows operating at the time of the traffic surveys are being retained and subject to traffic growth assumptions to provide a robust assessment.
- 4.10.8. Traffic flows from the proposed Grendon Springhill 2 prison development have been obtained from the Transport Assessment for that project. The daily traffic flows are provided for a short section of the A41 and have been extended to extremes of the Proposed Development study area on that road.
- 4.10.9. The Grendon Springhill 2 prison development only provides traffic flows for its operational phase. No construction traffic details are provided. It has been assumed that the prison would be fully operational at the time of peak construction traffic generation. This is an overestimate as the prison development will take some time to discharge planning conditions and start construction works, however it provides a robust assessment scenario.

4.10.10. The committed development traffic flows are illustrated in **Table 4.3**.

Table 4.3: Committed Development Traffic Flows (Per Day)

Ref No	Description	Cars & LGV	HGV	Total Traffic
1	A34	0	0	0
2	M40 North	0	0	0
3	M40 South	0	0	0
4	A41	380	0	0
5	A41 Bicester	380	0	0
6	A41 West	540	0	0
7	A41 East	540	0	0
8	Station Road/ Dewes Lane	0	0	0
9	Snake Lane/ Fidlers Field	0	0	0
10	Claydon Road	0	0	0
11	Granborough Road	0	0	0

4.10.11. The committed development traffic flows will be included in the 2029 baseline traffic flows and will be used in the Traffic Impact Assessment.

4.10.12. Committed development assessments for the decommissioning phase will not be undertaken as the future baseline and traffic conditions are impossible to estimate and the need for a decommissioning assessment has been scoped out.

5. Trip Generation and Distribution

5.1. Construction Phase – Trip Derivation

5.1.1. During the 30-month construction period, the following traffic will require access to the Site:

- staff transport, in either cars or staff minibuses;
- construction equipment and materials, deliveries of machinery and supplies such as ready-mix concrete and aggregate;
- Solar PV modules and their mounting frames;
- components relating to the battery storage element and associated grid connection infrastructure; and
- AILs consisting of the transformers and a heavy lift crane.

5.1.2. A construction programme has been developed to help estimate peak in construction activities.

5.1.3. Average monthly traffic flow data was used to establish the construction trips associated with the Proposed Development, based on the assumptions detailed in the following sections.

5.2. Construction Staff

5.2.1. Staff would arrive in cars, LGV and minibus vehicles. To promote sustainable travel, a Staff Travel Plan will be implemented to ensure the following to help reduce single occupancy car journeys:

- 75% of staff will arrive by minibus;
- 15% will arrive by LGV (expected to accommodate on average three staff); and
- 10% will arrive by car.

5.2.2. The workforce will depend on the activities undertaken but based on previous solar farm construction site experience for a project of this scale, an estimate of staff requirements has been made based against the construction programme.

5.2.3. Based on these assumptions, staff transport cars and LGVs would account for a maximum of 218 vehicle movements (109 inbound trips and 109 outbound trips) per day during the peak of staff requirements.

5.2.4. The movement of staff to and from the Proposed Development can be controlled by the Staff Travel Plan proposed for the Site and contained in **Outline CTMP [EN010158/APP/7.5]**.

5.3. General Deliveries

- 5.3.1. Throughout the construction phase, general deliveries will be made to construction areas via HGV. These would include fuel, site office supplies, generic construction materials and staff welfare etc. At the height of construction, it is assumed that up to 16 movements to Site are made (8 inbound trips and 8 outbound trips) per day.

5.4. Material Deliveries

- 5.4.1. Various materials will need to be delivered to the construction Site to construct the Proposed Development. At the outset of the construction works, HGV deliveries will deliver plant and initial material deliveries to the Site to enable the formation of the site compound and to deliver construction machinery.
- 5.4.2. The Site will require bulk material deliveries of aggregate, ready-mix concrete, geotextile, road surfacing materials, etc. During the construction programme, some of these materials that are used for temporary works will need to be removed from Site (such as temporary compound hardstands).
- 5.4.3. The estimated materials required on Site have been reviewed from the Proposed Development design team. The following assumptions have been made to estimate the traffic volumes:
- All bulk aggregate and road building materials will be delivered by HGV with a 20 tonne capacity. Approximately 227,707 tonnes of material will need to be imported;
 - Foundation steel will be delivered via HGV in 30 tonne deliveries. Approximately 1,567 tonnes of reinforcement will be required;
 - Ready-mix deliveries will be made by vehicles with a 6m³ capacity. Approximately 7,287m³ of concrete will be required;
 - A total of 470,433 Solar PV panels will be delivered by shipping container, with up to 550 panels being transported per container;
 - A total of 408 BESS battery units will be delivered in shipping container format or similar, one per HGV;
 - Panel frame components can be delivered in component form by shipping container;
 - A total of 153 large inverter units are containerised and delivered individually;
 - Cabling sand is delivered in 20 tonne capacity HGV, with approximately 110,260 tonnes required;
 - Cabling is delivered in drums, none of which are considered AILs in dimension or weight;

- Transformers are considered as AIL movements and will be delivered as one delivery each. Between three and 6 transformer loads are anticipated, depending upon final design and value engineering; and
- Commissioning will be undertaken by staff specifically travelling to Site by LGV.

5.4.4. The resulting traffic generation estimates have been plotted onto the indicative construction programme to estimate the peak journeys on the network. **Annex 2** illustrates the trip generation throughout the construction programme.

5.4.5. The peak of construction in terms of vehicular movements will occur in Month 8 of the construction programme and results in 359 daily trips (218 Car/LGV and 141 HGV journeys).

5.4.6. A review of average traffic flows across the entire construction period has also been undertaken. On average, the total number of daily vehicle movements is 269 movements per day (135 inbound and 135 outbound) or which 185 movements (92 inbound and 92 outbound) are Car & LGV movements and 85 (42 inbound and 42 outbound) are HGV movements.

5.4.7. The average vehicle movements across the whole construction period equate to 11 inbound vehicle movements per hour, over a typical 12 hour working day.

5.5. Distribution of Construction Trips

5.5.1. The distribution of Proposed Development's construction traffic on the network would vary depending on the types of loads being transported.

5.5.2. The following distribution estimates have been used to assign construction traffic to the study area network:

- All bulk materials will be imported from the west using the A41 corridor. For the purposes of the assessment, it is assumed that material would be supplied from sources to the west of Bicester, with access to the A41 via the B430 and B4030, bypassing Bicester itself;
- It has been assumed for the purposes of the assessment that all readymix concrete will originate from suppliers located on the A41 corridor, between Bicester and the A41/Station Road junction;
- 70% of general site deliveries will originate from Bicester and the M40 corridor, whilst 30% will originate from Aylesbury;
- Staff movements would be split between Bicester and Aylesbury, as the two largest population settlements with the greatest capacity for hotels and accommodation in close proximity to the study area. The assumed split of

staff is 50% originating from Aylesbury, 40% from Bicester and 10% from settlements on the M40 corridor; and

- All traffic will approach the Site from the south (excluding AIL traffic) and will use the proposed access route only. The routing of traffic would be controlled by the **Outline CTMP [EN010158/APP/7.5]**.

5.5.3. The distribution of construction traffic will be enforced by the construction contracts proposed for the project. Regular reviews and audits will be undertaken to enforce routing and to ensure the use of the Staff Travel Plan.

5.5.4. Following the distribution and assignment of traffic flows to the study area network, the resultant daily traffic during the peak of construction is summarised in **Table 5.1**.

Table 5.1: Construction Peak Month Daily Traffic Flows

Ref No	Description	Cars & LGV	HGV	Total Traffic
1	A34	10	0	10
2	M40 North	10	18	28
3	M40 South	10	24	34
4	A41	29	100	130
5	A41 Bicester	109	100	209
6	A41 West	109	138	247
7	A41 East	109	3	112
8	Station Road / Dewes Lane	218	141	359
9	Snake Lane / Fidlers Field	218	141	359
10	Claydon Road	218	141	359
11	Granborough Road	74	31	105

Please note that rounding errors may occur.

5.6. Operational Phase

5.6.1. During the operational phase, up to 24 LGV journeys per day are predicted to cater for cleaning of Solar PV panels and general site maintenance.

5.6.2. When longer term maintenance of battery units or panels is required, HGV access will be necessary with up to 12 HGV trips potentially per day. The

number of vehicle trips occurring during this phase will be well below the number of movements assessed for the construction phase and significantly below the overall IEMA guidance thresholds.

5.7. Decommissioning Phase

- 5.7.1. During decommissioning, the cabling, Solar PV panels, High Voltage (HV) equipment, foundations, etc. comprising the surface elements of the Proposed Development will be removed. Other elements such as sections of access tracks, access junctions, the grid connection ducting, landscaping, areas of ecological enhancement may be retained. The traffic generation associated with the decommissioning phase is therefore less than that associated with the construction phase.

6. Traffic Impact Assessment

6.1. Construction Impact

- 6.1.1. The peak month traffic data was combined with the future year (2029) traffic data to allow a comparison between the baseline results (in **Table 2**) to be made. The increase in traffic volumes is illustrated in percentage increases for each class of vehicle. This is illustrated in **Table 6.1**.

Table 6.1: Percentage Impact Summary

Ref No	Description	Cars & LGV	HGV	Total Traffic
1	A34	0.02%	0.00%	0.01%
2	M40 North	0.01%	0.12%	0.03%
3	M40 South	0.02%	0.31%	0.05%
4	A41	0.09%	4.58%	0.38%
5	A41 Bicester	0.49%	5.13%	0.88%
6	A41 West	0.96%	5.80%	1.88%
7	A41 East	1.06%	0.13%	0.93%
8	Station Road/Dewes Lane	25.88%	55.19%	32.72%
9	Snake Lane/Fidlers Field	234.59%	461.58%	290.87%
10	Claydon Road	17.12%	57.84%	23.68%
11	Granborough Road	27.32%	36.87%	29.56%

Please note that rounding errors may occur.

6.2. Local Road Impact

- 6.2.1. The highest total traffic movement increases occur on Station Road/Dewes Lane, Snake Lane/Fidlers Field and Granborough Road. This is expected, due to the relatively low baseline traffic flow on these roads. Claydon Road does not experience a traffic increase in excess of 24%.
- 6.2.2. None of the other links within the study area experience traffic impacts in excess of 1.9%. These are significantly below the accepted industry standard estimate of daily traffic flow variation of 10%.

- 6.2.3. The traffic impact to the eastern section of the A41, towards Waddesdon is 0.93%. This section of the study area leading through Waddesdon and Aylesbury, would be used by a very limited number of HGV movements (up to three per day) and staff movements (109 per day – 55 inbound and 54 outbound). This level of traffic is not predicted to cause capacity issues to the east, outside of the assessment study area.
- 6.2.4. It should be noted the construction phase is transitory in nature and the peak of construction activities is short lived, occurring over a relatively short timeframe when taking account of the whole construction programme.

6.3. Road Link Capacity Review

- 6.3.1. A review of road link capacity has been undertaken to review if sufficient spare capacity exists to accommodate the proposed peak construction traffic flows.
- 6.3.2. The NESA Manual, formerly part of the Design Manual for Roads and Bridges (DMRB), [Ref. 1.16] has been used to estimate the theoretical capacity for the study area roads for a 12 hour period. This has then been compared to the base + committed development and base + committed development + peak daily construction traffic and a review of the spare road link capacity undertaken. The assessment is summarised below in **Table 6.2**.

Table 4.2: Percentage Impact Summary

Ref No	Description	2029 Base + Committed Development Daily Flows	2029 Base + Committed Development + Peak Construction Traffic Daily Flows	Theoretical Road Link Capacity (12 hrs)	Spare Link Capacity
1	A34	71,335	71,344	81,600	12.57%
2	M40 North	110,478	110,506	136,800	19.22%
3	M40 South	71,209	71,243	136,800	47.92%
4	A41	34,172	34,302	81,600	57.96%
5	A41 Bicester	23,776	23,985	36,000	33.37%
6	A41 West	13,169	13,417	28,800	53.41%
7	A41 East	12,086	12,198	28,800	57.65%
8	Station Road/ Dewes Lane	1,099	1,458	19,200	92.41%

Ref No	Description	2029 Base + Committed Development Daily Flows	2029 Base + Committed Development + Peak Construction Traffic Daily Flows	Theoretical Road Link Capacity (12 hrs)	Spare Link Capacity
9	Snake Lane/ Fidlers Field	124	483	19,200	97.48%
10	Claydon Road	1,518	1,877	19,200	90.22%
11	Granborough Road	354	459	3,360	86.35%

6.3.3. The results indicate that ample spare link capacity exists across the study area network and that the road network can accommodate the temporary uplift in traffic associated with the Proposed Development.

6.3.4. To assist in the operation of the network, minor intervention works are proposed. These are detailed in the **Outline CTMP [EN010158/APP/7.5]**. The works include the following:

- The potential resurfacing of Snake Lane/Fidler's Field;
- The widening of a narrow section of road to the east of the junction of the Claydon Road junction at Shipton Lee;
- Minor road widening and the provision of laybys on Granborough Road.

6.3.5. Swept path drawings and proposal drawings are provided in the **Outline CTMP [EN010158/APP/7.5]**.

6.4. Trunk Road Impact

6.4.1. The impact on the trunk road network (M40 and A34) is less than 0.05% and as such, no significant impact on the operation of the trunk road network is predicted.

6.4.2. The volume of traffic through Junction 9 of the M40 is 72 vehicles per day. This equates to an average of six vehicles per hour, over a typical 12 hour working day and well below the threshold for capacity assessments.

6.5. A41 / Station Road Junction Assessment

6.5.1. A LinSig assessment of the A41 and Station Road / Dewes Lane junction has been undertaken as requested by Buckinghamshire Council.

- 6.5.2. Peak hour traffic flows were obtained from the 2025 baseline traffic figures quoted in the nearby Littleton Green development (22/03384/AOP) Transport Assessment report. The AM and PM peak hours data were taken from this report as HS2 construction works are currently preventing new traffic surveys undertaken.
- 6.5.3. The 2025 traffic flows were then factored to create the 2029 traffic flows.
- 6.5.4. Committed development traffic for the A41 during the peak hours has been obtained from the Grendon Springhill 2 Prison (22/00125/REF) Transport Assessment.
- 6.5.5. To provide a robust assessment of the potential traffic effects, the following assumptions have been made in addition to the Proposed Development peak construction traffic generation and distribution estimates:
- The HGV traffic is restricted to traffic movements over a 10 hour window, rather than a 12 hour window. This increases HGV traffic flows within each peak hour; and
 - The vast majority of all staff movements to site will be onsite by 0700hrs. To provide a robust assessment for the network peak, a total of 20% of daily Car and LGV movements has been assumed to travel in both network peak hours.
- 6.5.6. The assumed traffic flows have been included to the baseline with the committed development traffic flows. The LinSig assessment decks are attached in Annex 4.
- 6.5.7. The assessments note that the Degree of Saturation (Deg Sat) is less than 90% on all arms, indicating that there is sufficient capacity at the junction in both peak periods.

6.6. Operational Impact

- 6.6.1. The traffic impact of the operational phase is minimal and below the trigger for an assessment.

6.7. Decommissioning Impact

- 6.7.1. Prior to decommissioning of the Proposed Development, a traffic assessment would be undertaken, and appropriate traffic management procedures followed.
- 6.7.2. The decommissioning phase would result in fewer trips on the road network than the construction as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures

may be broken up onsite to allow transport by a reduced number of HGV trips.

- 6.7.3. The growth of background traffic, created through wider development in the area, will increase the future baseline traffic flows. With a larger baseline and smaller development traffic generation, the potential traffic impact is therefore considered to be significantly below that reported for the construction phase.

7. Proposed Mitigation

7.1. Construction Mitigation

- 7.1.1. Given the importance of effective traffic management with construction projects, an **Outline CTMP [EN010158/APP/7.5]** has been prepared and submitted as part of this DCO Application.
- 7.1.2. The CTMP will also include an Onsite Access Management Plan (OAMP) to safely manage the interactions between PRow, bridleway and path users and construction traffic/activities.
- 7.1.3. A Staff Travel Plan to promote sustainable travel to and from the construction site is also included in the CTMP.
- 7.1.4. The proposed mitigation package would be secured through the draft DCO Application.

7.2. Operational Mitigation

- 7.2.1. The Site access junctions and tracks will be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance will be undertaken to keep the Proposed Development access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.
- 7.2.2. Due to the level of traffic associated with the operational phase, being less than the assessed construction phase, no physical traffic management measures are considered necessary.
- 7.2.3. In line with best practice, car/LGV sharing for staff during the operation phase will be undertaken to reduce single occupancy trips as far as is practical.

7.3. Decommissioning Mitigation

- 7.3.1. Mitigation during the decommissioning stage will be similar to that proposed in the **Outline CTMP [EN010158/APP/7.5]**, albeit with reduced traffic generation as some elements of the Proposed Development are likely to be retained, including sections of access tracks, access junctions, landscaping, areas of ecological enhancement, etc.
- 7.3.2. A DTMP would be prepared prior to the decommissioning stage being commenced. This will ensure that all relevant transport receptors and issues are accounted for in preparing the traffic management measures at that stage, likely to undertaken up to 60 years following installation.

- 7.3.3. The DTMP would be secured within the DCO Application, potentially as a standalone document or as part of the Decommissioning Environmental Management Plan (DEMP).

8. Summary and Conclusions

- 8.1.1. Pell Frischmann has been instructed by Rosefield Energyfarm Limited (the Applicant) to produce a Transport Assessment for a solar energy development located to the northwest of Quainton, Buckinghamshire.
- 8.1.2. Baseline traffic data established a base point for determining the impact during the construction phase and was factored to future levels to help determine the effect of construction traffic on the local road network.
- 8.1.3. The construction traffic would result in a temporary increase in traffic flows on the road network surrounding the Proposed Development. The peak of construction in terms of vehicular movements will be 359 daily journeys (218 Car/LGV and 141 HGV journeys). Over the course of a typical 12 hour working day on the Site, this would equate to approximately 14 two-way HGV movements per hour at the peak of construction activities.
- 8.1.4. A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of the construction, operational and decommissioning phase traffic flows. It is proposed that these can be secured by condition with the local planning authorities.
- 8.1.5. No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature and are transitory.

Annex 1: Committed Development Review

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
19/A0981/NON	Proposed non-material amendment to permission for Ground mounted solar farm, etc relating to 19/00983/APP.	BC	Approved	No.	Possible	No	No	n/a	Exclude
19/00983/APP	Ground mounted solar farm, ancillary infrastructure and associated works including the diversion of public rights of way and landscape planting	BC	Approved	No	Possible	No	Yes	10 HGV movements per day on East Claydon Road	Exclude
22/00125/REF	Outline planning application for a new category C prison (up to 67,000 sqm GEA)	BC	Approved (following appeal)	Yes	Possible	Yes	Yes	No construction traffic available. Operational traffic of 575 in / 575 Out per day. 33% A41 E and 47% A41 W.	Included

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
CM/0016/21	Application for the construction of solar array / solar park comprising of ground mounted solar PV panels and associated works at Calvert Landfill Site.	BC	Awaiting Decision	n/a	n/a	n/a	n/a	n/a	Exclude
23/03875/APP Planning Inspectorate Case Reference: APP/J0405/W/25/3360815	Development of a battery energy storage system (BESS)	BC	Refused – Under Appeal (July 2025)	n/a	n/a	n/a	n/a	n/a	Exclude
24/00407/APP	Erection of 10 no. dwellings and associated green infrastructure	BC	Awaiting Decision	n/a	n/a	n/a	n/a	n/a	Exclude
Hybrid Bill	High Speed Rail 2 ('HS2')	BC	Ongoing	n/a	n/a	n/a	n/a	n/a	Exclude
TWA/18/APP/04	East West Rail	BC	Ongoing	No	No	Yes	No	Complete by the start of Rosefield Construction	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
22/00119/HS2	A site restoration scheme relating to land approximately 50m south of the discontinued train line and East of the overbridge along Addison Road near Steeple Claydon Village.	BC	Approved	Yes	Yes	Yes	Yes		Included
23/03784/HS2	Plans and Specifications submission under Schedule 17 to the High Speed Rail (London - West Midlands) Act 2017 (the Act) for works comprising of: A41 Bicester Road Overbridge Parapets	BC	Approved	No	Possible	Yes	No	n/a	Exclude
23/03641/HS2	Development of Sheephouse Wood Bat Mitigation Structure (SWBMS); etc and location of the permanent fencing.	BC	Withdrawn	n/a	n/a	n/a	n/a	n/a	Exclude
25/00524/DIS	Submission of details for approval pursuant to Requirement 1 of Plans and Specifications approval reference 23/02697/HS2	BC	Awaiting Determination	n/a	n/a	n/a	n/a	n/a	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
	(appeal reference APP/HS2/23) relating to dimensions, material, finish and colour of the mesh panels to the Bat Mitigation Structure and particulars of the detail between the mesh panels and the adjacent concrete arched panels								
21/03707/HS2	The proposed development: Calvert Cutting (Part of); Twyford Embankment (Part of); etc	BC	Approved	Possible	Possible	Yes	No	No traffic data available	Exclude
22/03796/HS2	Building Works, a Road Vehicle Park, Earthworks, Transformers, etc	BC	Approved	Possible	Possible	Yes	No	No traffic data available	Exclude
CM/0027/23	Creation of access road, revised drainage lagoon, landscaping, drainage and other associated infrastructure.	BC	Awaiting Decision	n/a	n/a	n/a	n/a	n/a	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
23/01939/SO	EIA Screening Opinion for a proposed solar farm with associated works on land at Wings Farm, Marston Road, Granborough, MK18 3JX - Claydone Soar	BC	Approved - EIA Not required	Possible	Possible	Possible	No	Not yet determined	Exclude
22/03873/F Planning Inspectorate Case Reference: APP/C3105/W/24/335306 9	Installation and operation of a renewable energy generating station comprising ground-mounted photovoltaic solar arrays.	CDC	Recommended by officer but refused by committee. under Appeal.	Yes	Possible	Yes	Yes	Generates an addition 11 LGV and 21 HGV movements at peak on the A41.	Exclude
21/01224/OUT	Outline planning application for Automotive Experience Quarter comprising Commercial, Business and Services uses (Class E), Light Industrial (Class B2), Local Community and Learning Uses (Class F) and vehicle circuits (Sui Generis) with all matters reserved aside from that of access).	CDC	Approved	Yes	Possible	No	Yes	No traffic distributed to Rosefield study network	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
24/00949/F	Siting of battery storage facility; substation for the connection of the BESS to the grid; ancillary equipment; security fencing; landscaping and vehicular access alterations.	CDC	Approved	Yes	Possible	No	Yes	No traffic distributed to Rosefield study network	Exclude
21/04112/OUT Planning Inspectorate Case Reference: APP/C3105/W/22/330148 5	Outline application for the erection of up to 65 dwellings, including up to 8 live-work dwellings	CDC	Approved via Appeal.	Yes	Possible	No	Yes	No traffic distributed to Rosefield study network	Exclude
21/03558/OUT	OUTLINE - Residential development for up to 250 dwellings	CDC	Pending Decision	n/a	n/a	n/a	n/a	Not yet determined.	Exclude
24/02595/AEL	Consultation on new overhead electricity line Under Section 37 of The Electricity Act 1989 (as amended)	CDC	No Objection	Possible	Possible	Possible	No	n/a	Exclude
24/02796/SO	EIA Screening Request for proposed Battery Energy Storage System (BESS)	BC	Not EIA Development.	n/a	n/a	n/a	n/a	Not yet determined.	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
24/03004/APP	Hybrid application for the redevelopment of the site comprising outline planning permission, with all matters reserved except access, for a drive thru restaurant	BC	Pending Decision	n/a	n/a	n/a	n/a	Not yet determined.	Exclude
24/03305/APP	1x drone cage enclosure (10mx10mx10m) at Wellington Drive Westcott Venture Park Westcott Buckinghamshire	BC	Approved	No	Possible	Yes	No		Exclude
24/03472/APP	Four no. commercial stables, ancillary facilities, parking, landscaping and internal road	BC	Pending Decision	No	n/a	n/a	n/a	Not yet determined.	Exclude
24/03426/AOP	Outline application (all reserved apart from access) for approx. 220 residential dwellings, pre-school/ nursery, SuDS and open space off Bourton Road, Buckingham, MK18 7R.	BC	Pending Decision	Yes	n/a	n/a	n/a	Not yet determined.	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
24/03259/F	The erection of two Use Class B8 floorspace units Access from the existing Symmetry Park estate road.	CDC	Pending Decision	Yes	n/a	n/a	n/a	Not yet determined.	Exclude
24/03817/AOP	Outline planning application for up to 70 dwellings, including vehicular access, pedestrian and cycle lines, public open space, landscaping, drainage and associated works.	BC	Pending Decision	Yes	n/a	n/a	n/a	Not yet determined.	Exclude
25/00013/DCO East West Rail Case Reference: TR040012	EWR DCO: Bedford to Cambridge and Western improvements	BC	Scoped, Report shared.	Yes	Possible	Yes	No	At scoping, no traffic data as yet.	Exclude
25/00524/DIS	Requirement 1 of Plans and Specifications approval reference 23/02697/HS2 (appeal reference APP/HS2/23)	BC	Approved	No	Possible	Yes	No	n/a	Exclude
25/00439/SCOP	EIA scoping opinion for a proposed residential-led development	CDC	Scoped, Report shared.	Yes	n/a	n/a	n/a	Not yet determined.	Exclude

Project / Planning Reference	Description of other existing and/or approved development	Relevant Authority	Status	Significant Trip Generator	Development Coincides with Construction Phase	Within Study Area	Has Publicly Available Data	Comment	Included in Cumulative Sensitivity Review
23/01610/OUT	Outline application cross boundary with Buckinghamshire LPA (application reference 23/02180/AOP) for a Sustainable Urban Extension comprising residential development of up to 1,265 dwellings (Use Class C3), a mixed-use local centre etc	MKCC	Pending Decision	Yes	n/a	n/a	n/a	Not yet determined.	Exclude
25/00883/AOP	Demolition of existing buildings and commercial redevelopment with residential development, including affordable housing, along with associated access and infrastructure.	BC	Pending Decision	Yes	n/a	n/a	n/a	Not yet determined.	Exclude

Annex 2: Trip Generation

Application Document Ref: EN010158/APP/6.4.2
Planning Inspectorate Scheme Ref: EN010158

Annex 3: AIL Route Survey Report

P e l l F r i s c h m a n n

Rosefield Solar Farm

Route Survey Report

July 2025

107130

This report is to be regarded as confidential to our client and is intended for their use only and may not be assigned except in accordance with the contract. Consequently, and in accordance with current practice, any liability to any third-party in respect of the whole or any part of its contents is hereby expressly excluded, except to the extent that the report has been assigned in accordance with the contract. Before the report or any part of it is reproduced or referred to in any document, circular or statement and before its contents or the contents of any part of it are disclosed orally to any third party, our written approval as to the form and context of such a publication or disclosure must be obtained.

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Executive Summary

Pell Frischmann Consultants Limited (PF) has been commissioned by Rosefield Energyfarm Limited (the Applicant) to undertake a Route Survey Review (RSR) to examine the issues associated with the transport of Abnormal Indivisible Loads (AIL) associated with the construction and development of the proposed Rosefield Solar Farm, located to the southwest of Winslow, within the Buckinghamshire Council administrative area.

This report identifies the key points and issues associated with the proposed routes and outlines the issues that will need to be considered for successful delivery of the components.

The access review has been based upon a candidate transformer and has been undertaken on the basis of a 16 axle grid frame trailer. Due to the transport configurations being classified as Special Order, a full Police escort would be required.

The route from the M1 corridor to the proposed substation site access junction is considered feasible for all loads, subject to the provision of the outlined mitigation works and permissions.

The report is presented to the Applicant for consideration. Various road modifications and interventions are required to successfully access the site. If these are assessed, approved and undertaken, access to the site is considered feasible.

1 Introduction

Pell Frischmann Consultants Limited (PF) has been commissioned by Rosefield Energyfarm Limited (the Applicant) to undertake a Route Survey Review (RSR) to examine the issues associated with the transport of Abnormal Indivisible Loads (AIL) associated with the construction and development of the proposed Rosefield Solar Farm, located to the southwest of Winslow, within the Buckinghamshire Council administrative area.

The RSR has been prepared to help inform the Applicant on the likely issues associated with the development of the site with regards to off-site transport and access for AIL traffic and examines the issues associated with transport along the whole of the access route from the M1 corridor to the substation site access junction.

The access review identifies the key issues associated with AIL deliveries and notes that remedial works, either in the form of physical works or as traffic management interventions will be required to accommodate the predicted loads.

The detailed assessment and subsequent designs of any remedial works are beyond the agreed scope of works between PF and the Applicant at this point in time.

It is the responsibility of the transformer supplier to ensure that the entirety of the proposed access route is suitable and meets with their satisfaction (depending upon contract). The transformer supplier will be responsible for ensuring that the finalised proposals meet with the appropriate levels of health and safety consideration for all road users and are in line with the relevant legislation at the time of delivery.

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2 Definitions & Terminology

2.1 Definition of Abnormal Indivisible Load

The transport of Abnormal Indivisible Loads (AIL) is a reserved matter for the UK Parliament and all legislation relating to AIL movement is not devolved. Devolved government agencies such as Transport Scotland, Welsh Government Transport Directorate and DfI Road are consultees, rather than executive agencies.

The UK Department for Transport, of which National Highways (NH) is an executive agency, states that the strict definition of an AIL refers to a load which cannot, without undue expense or risk of damage, be divided into two or more loads for the purpose of carriage on roads which, owing to its dimensions or weight, cannot be carried on a vehicle which complies with the 'standard vehicle regulations' as follows:

- The Road Vehicles (Construction and Use) Regulations 1986 (as amended)
- The Road Vehicles (Authorised Weight) Regulations 1998 (as amended)
- The Road Vehicles Lighting Regulations 1989 (as amended)

All equipment should be stripped of their ancillaries before they are transported. NH will only accept that further dismantling is not required where it cannot be economically achieved due to the requirement for its construction within factory environments or where extremely high tolerances have to be maintained.

2.2 Legislation

Conventional heavy goods vehicles have an operating weight limit of 44 tonnes. The category known as AIL covers those vehicles where the gross weight exceeds 44 tonnes.

An AIL is defined as that which cannot be carried under Construction and Use (C&U) Regulations. Items which, when loaded on the load carrying vehicle exceed the weights encompassed by the C&U Regulations, but do not exceed Special Order Permission Limits are governed by Special Types General Order (STGO) Categories 1 to 3 depending on size.

Where dimensions exceed 6,100 mm in width, 30,000 mm in rigid length or 150 tonnes gross weight, Special Order from NH is required.

Special Order category AIL movements are authorised by the NH Abnormal Loads team, an executive agency of the DfT, based in Birmingham.

2.3 Water Preferred Policy

The DfT has adopted a 'water-preferred' policy for the transport of AIL. This means that, where an application is sought for the movement of a Special Order or VR1 category load (more than 5.0 m width) by road, the Department, via NH and devolved agencies, can turn down the application where it is feasible for a coastal or inland waterway route to be used instead of road.

NH advise that this decision is based on a number of factors including whether the load is divisible, the availability of a suitable route, the amount of traffic congestion that is likely to be caused and the justification for the load to be moved.

The NH Abnormal Loads Team is the department responsible for the authorisation of Special Order AIL and government policy is that the closest available port of access should be used for the delivery of such oversized items.

2.4 Third-Party Land & Land Ownership

A review of third-party land should be undertaken by the developer to ensure that no additional land rights are required to enable deliveries or mitigation works. PF accepts no responsibility for the accuracy of land ownership assumptions, all of which should be confirmed across the entire access route by a qualified land agent, engaged by the Applicant.

The limits of road adoption can vary depending upon the location of the site and the history of the road agencies involved. The adopted area is generally defined as land contained within a defined boundary where the road

agency holds the maintenance rights for the land. In urban areas, this is usually defined as the area from the edge of the footway across the road to the opposing footway back edge.

In rural areas, the area of adoption can be open to greater interpretation as defined boundaries may not be readily visible. In these locations, the general rule is that the area of adoption is between established field boundary lines or a maximum 2 m from the road edge. This can vary between area and location.

2.5 Abbreviations

- AIL Abnormal Indivisible Load
- C&U Construction and Use
- DfI DfI Road Service, Northern Ireland
- DfT UK Department for Transport
- ESDAL Electronic Service Delivery for Abnormal Loads
- NH National Highways
- OS Ordnance Survey
- PF Pell Frischmann Consultants Limited
- POE Port of Entry
- RSR Route Survey Review
- SPA Swept Path Assessment
- STGO Special Types General Order
- SWC Super Wing Carrier
- TS Transport Scotland
- WG Welsh Government

3 Candidate Turbine

The Applicant has indicated that they wish to consider the worst-case components associated with the substation required on site. The transformer is considered to be the worst case load, given its weight and overall rigid length when transported.

The details of the components have been provided by the Applicant and are detailed in **Table 3-1** below.

Table 3-1: Turbine Component Summary

Component	Length [m]	Width [m]	Height / min. Diameter [m]	Weight (t)
Transformer	7.500	3.307	5.150	198

A drawing of the proposed component when loaded on a grid frame trailer is provided in Appendix A.

4 Port of Entry

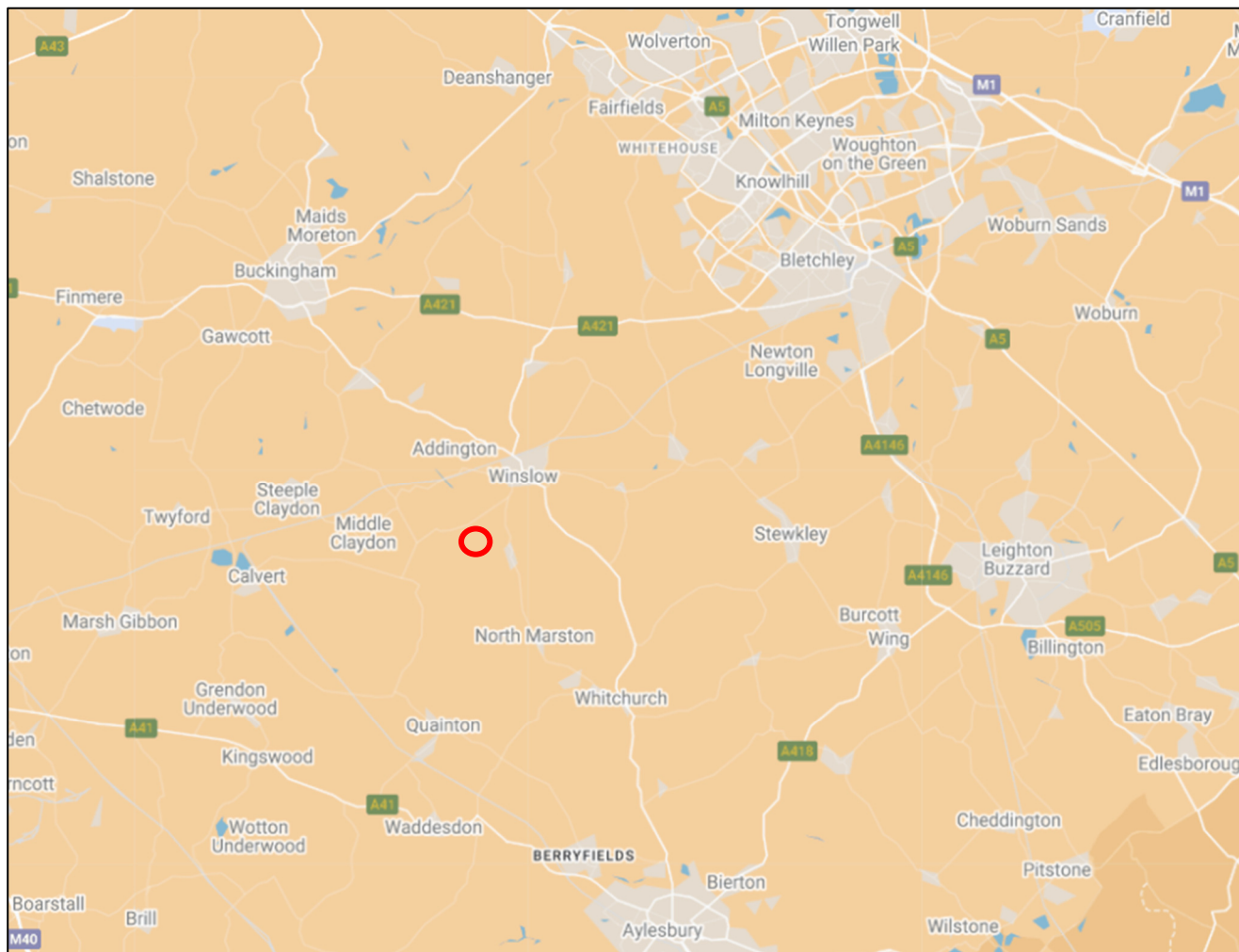
There are several options for the Port of Entry of the transformer, should it be manufactured outside of the UK. Alternatively, the transformers may be sourced from a UK based supplier, where road transport will be achievable.

To avoid incorrect assumptions, the route survey commences on the M1 corridor, where strategic access from a variety of port options or industrial locations is considered achievable.

5 Site Location

The proposed development site is located to the southwest of Winslow. Within the wider development area, the electrical substation for the proposed substation is to be located in close proximity to the existing National Grid East Claydon Substation. **Figure 5-1** below illustrates the proposed substation.

Figure 5-1: Site Location Plan



6 Weight Review

A weight review has been undertaken via the Electronic Service Delivery for Abnormal Loads (ESDAL) contacts database using the National Highways website www.esdal.com.

All of the relevant road and structure operators are noted in **Table 6-1**, and all have been contacted to ascertain if there are any relevant constraints that should be noted. Where comments are received, these are included within **Table 9-1** and **Appendix D**. Where no comments have been received, this does not confirm the suitability or otherwise of the structures and a full review will be required with the relevant agencies.

Table 6-1: ESDAL Contacts

Organisation	Email Address
Milton Keynes	abloads@milton-keynes.gov.uk
National Highways	eastregionabnormalloads@nationalhighways.co.uk
Historic Rail Eastate	rsgbrb@jacobs.com
Buckinghamshire Council	bucks@abloads.com
Network Rail	AbnormalLoadsEnquiries@networkrail.co.uk

7 Access Route

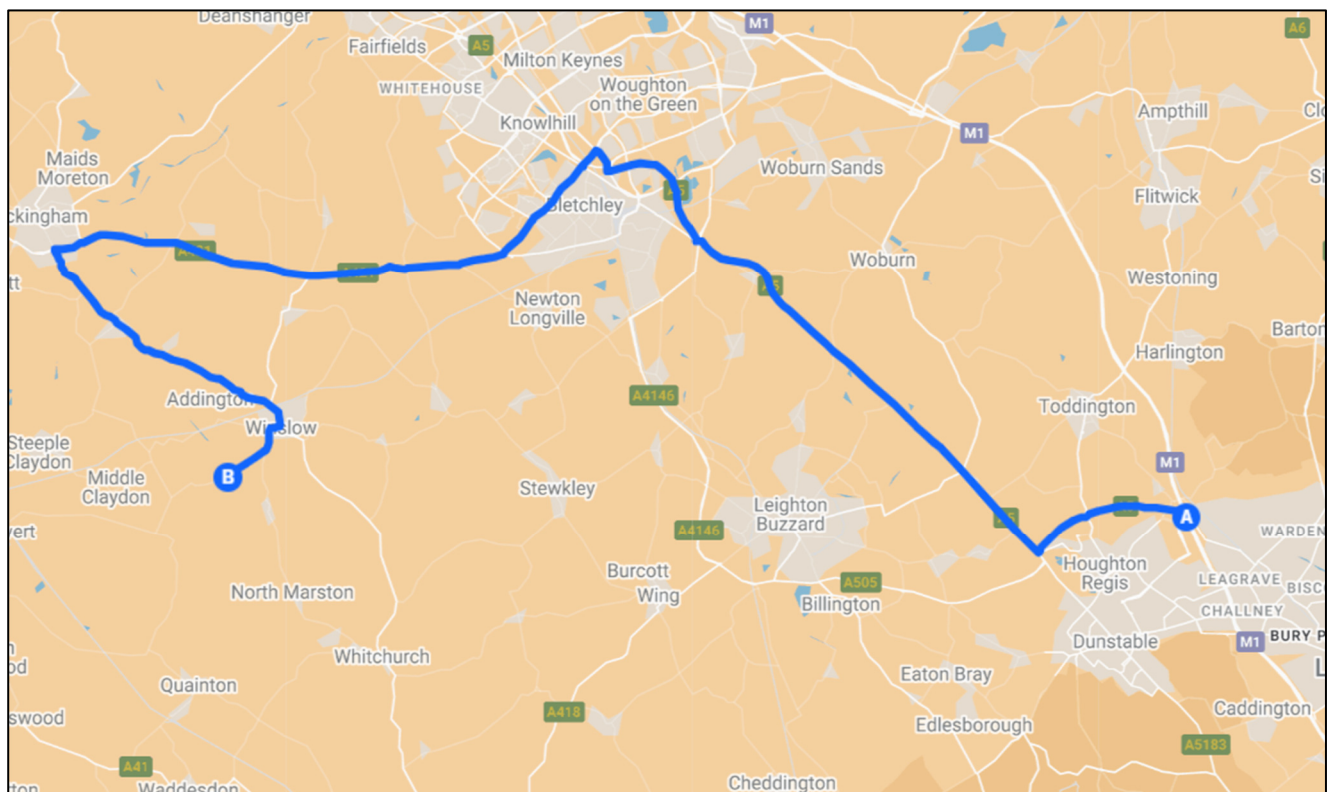
The proposed AIL access route is based upon the National Highways High and Heavy Load Map¹, with particular focus on route HR143, that provides access from Winslow to the nearby East Claydon substation.

The proposed access route to the site access junction is as follows:

- Loads would depart the M1 at Junction 11a;
- Loads will join the A5 and will bypass Dunstable before turning north on the A5;
- Loads would depart the A5 at the Redmoor Roundabout and would join the A421 Grafton Street northbound;
- At the junction of Grafton Street and Standing Way, loads would turn left and would proceed on the A421 Standing Way towards Buckingham;
- At the A421 / A413 Roundabout in Buckingham, loads will turn left and will proceed southbound towards Winslow;
- In Winslow, loads will proceed southbound on High Street before turning right onto Vicarage Way;
- At the roundabout of Vicarage Way / Burleys Road, loads will turn left and will continue south of Burleys Road / Granborough Road;
- To the south of Winslow, loads will turn right onto East Claydon Road;
- Loads will continue westbound on East Claydon Road, with a new AIL only site access junction located in the southern verge.

The proposed access route is illustrated in **Figure 7-1**.

Figure 7-1: Proposed Access Route



¹ <https://nationalhighways.co.uk/media/rd1xmfj/high-and-heavy-load-grids-map-for-abnormal-loads.pdf>

8 Delivery Equipment

To provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be loaded onto a 16 axle grid frame trailer to reduce the need for mitigation in constrained sections of the route, shown in **Figure 8-1**.

Figure 8-1: Example Grid Frame Trailer



As the loads are classified as Special Order, due to a rigid length in excess of 30 m, a full Police Escort would be required along the full length of the route.

9 Route Constraints

9.1 Route Constraint Assessment

The constraints noted during the review are provided in **Table 9-1** below. These cover all constraints from the port access gate through to the site access junction and are classified in terms of risk to delivery as follows (N.B. the below list is not exhaustive):

High Risk

- Building / overbridge conflict
- Third-party land owner(s) access permission
- Permanent road works
- Reprofiting / ground works
- Bridge upgrades
- Overhead line removal / relocation
- Tree clearance

Medium Risk

- Land searches to confirm extent of available adopted land
- Topographical survey
- Detailed junction / access track design
- Structural assessment / overbridging
- Overhead line survey
- Vertical elevation check
- Bridge parapet removals
- Street furniture removals
- Tree / vegetation pruning
- Vegetation clearance
- Use of dedicated abnormal load bypass / access track
- Shunt / contraflow manoeuvre
- Trailer interchange
- Carriageway surface repairs

Low Risk

- Temporary load bearing surface to be laid
- Existing load bearing surface to be utilised
- Parking restrictions
- Loads to be raised above obstruction using trailer hydraulics

Risk has been assessed in terms of enabling works time, potential cost and complexity. Please note that risk category is based upon the risk noted at the time of survey and is subjective. The developer is required to consider all risks, prior to deliveries commencing.

Full details of the mitigation measures are shown on the swept path assessment drawings included in **Appendix C**.

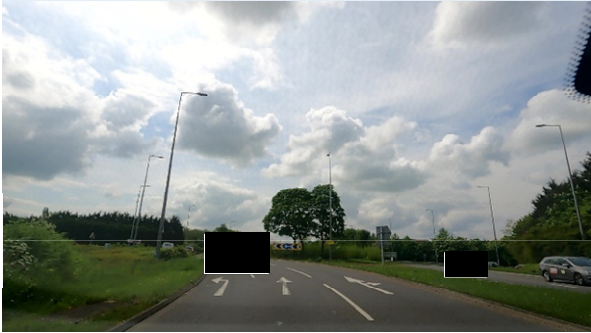
9.2 Route Constraint Tables

Table 9-1 details constraints from the M1 through to the proposed site access junction on Route 1.

Table 9-1: Route Constraint Points and Details

POI	Key Constraint	Details
1	M1 Junction 11 Roundabout 	Loads will depart the M1 at Junction 11 and will take the second exit at the slip road roundabout, proceeding westbound. A swept path assessment has been undertaken and no physical mitigation measures are required.
2	A5 / B5120 Roundabout 	Loads will proceed ahead on the A5, taking the second exit at the roundabout. A swept path assessment has been undertaken and no physical mitigation measures are required.
3	A5 / Watling Street Roundabout 	Loads will turn right onto the A5 northbound at the roundabout, taking the third exit. A swept path assessment has been undertaken and no physical mitigation measures are required. To the north of the junction, a crossing D-island should have its street furniture removed to allow loads to safely oversail the island.
4	A5 / Woburn Road Roundabout 	Loads will proceed ahead at the junction, taking the second exit and continuing on the A5 northbound. A swept path assessment has been undertaken and no physical mitigation measures are required.

POI	Key Constraint	Details
5	A5 Kelly's Kitchen Roundabout 	Loads will proceed ahead on the A5, taking the third exit at the roundabout. A swept path assessment has been undertaken and no physical mitigation measures are required.
6	A5 Redmoor Roundabout 	Loads will depart the A5 and will enter the grade separated Redmoor Roundabout. Loads will take the third exit. A swept path assessment has been undertaken and no physical mitigation measures are required.
7	A421 Bleak Moor Roundabout 	Loads will take the first exit at the roundabout and will join the A421 westbound. A swept path assessment has been undertaken and indicates that minor vegetation trimming works will be required on the inside verge, within the limits of existing highways adoption.
8	A421 Elfield Roundabout 	Loads will take the second exit at the roundabout and will proceed westbound. A swept path assessment has been undertaken. Loads will oversail the verge of the central island of the junction. The loads will be raised to clear the island, using the hydraulic setting on the trailer.

POI	Key Constraint	Details
9	A421 Emerson Roundabout 	Loads will take the second exit at the roundabout and will proceed southwest bound. A swept path assessment has been undertaken and no physical mitigation measures are required.
10	A421 Wind Hill Mill Roundabout 	Loads will take the second exit at the roundabout and will proceed southwest. A swept path assessment has been undertaken and no physical mitigation measures are required.
11	A421 / B4034 Roundabout 	Loads will take the second exit at the roundabout and will proceed southwest. A swept path assessment has been undertaken and no physical mitigation measures are required.
12	A421 Bottledump Roundabout 	Loads will take the second exit at the roundabout and will proceed southwest. A swept path assessment has been undertaken and indicates that minor vegetation trimming works will be required on the southwest verge, within the limits of existing highways adoption.

POI	Key Constraint	Details
13	A421 / Whaddon Road Roundabout 	Loads will take the second exit at the roundabout and will proceed westbound. A swept path assessment has been undertaken. Loads will oversail the verge of the central island of the junction. The loads will be raised to clear the island, using the hydraulic settings on the trailer.
14	A421 / B4033 Roundabout 	Loads will take the second exit at the roundabout and will proceed westbound. A contraflow transit of the junction is proposed to reduce the need for intrusive works. A swept path assessment has been undertaken and indicates that minor vegetation trimming works will be required on the northwest verge, within the limits of existing highways adoption.
15	A421 / A413 Roundabout 	Loads will take the first exit at the roundabout and will continue westbound. A swept path assessment has been undertaken and indicates that minor tree canopy trimming works will be required on the entry arm of the junction, within the limits of existing highways adoption.
16	A421 / A413 London Road Roundabout 	Loads will undertake a contraflow transit of the junction to reduce the need for physical works. Loads will join London Road and will proceed southbound. A swept path assessment has been undertaken and indicates that no physical mitigation works are required. During deliveries, oncoming traffic should be held back from the junction to allow the load to move in safety.

POI	Key Constraint	Details
17	A413 London Road / Needlepin Way Northern Junction 	Loads will proceed southbound through the junction, taking the second exit. A swept path assessment has been undertaken. Loads will oversail the verge of the central island of the junction. The loads will be raised to clear the island, using the hydraulic settings on the trailer. One chevron sign should be relocated on the eastern verge.
18	A413 London Road / Needlepin Way Southern Junction 	Loads will proceed southbound through the junction, taking the second exit. A contraflow transit of the junction is proposed to reduce the need for physical mitigation measures. A swept path assessment has been undertaken. Loads will oversail the verge of the central island of the junction. The loads will be raised to clear the island, using the hydraulic settings on the trailer.
19	A413 Bends, Padbury 	Loads will proceed southeast bound on the A413. Loads will require access to both traffic lanes during deliveries and the advance escorts should hold traffic back from the bend during deliveries.
20	A413 Bends, Southeast of Padbury 	Loads will proceed southeast bound on the A413. Loads will require access to both traffic lanes during deliveries and the advance escorts should hold traffic back from the bend during deliveries.

POI	Key Constraint	Details
21	A413 High Street Crossing 	The central crossing island and its associated street furniture should be removed to enable access for the proposed loads. A temporary crossing facility will be provided to ensure pedestrian safety during deliveries. A review of overhead utilities should be undertaken prior to deliveries being made.
22	High Street / Vicarage Road Junction 	Loads will turn right at the junction, with loads joining Vicarage Road. A swept path assessment on a detailed topographical base plan has been undertaken. On the eastern verge, a load bearing surface is required. Two bollards, two traffic signal poles and shop signs should be removed. Underground services should be protected. On the southern boundary, a load bearing surface should be laid. Underground services should be protected. In the inside of the turn, a load bearing surface is required. One lighting column should be removed along with two road signs and one bike stand. Parking on Vicarage Road should be suspended during load deliveries.
23	Vicarage Road / Burleys Road Roundabout 	Prior to the junction, two pedestrian crossing islands should be removed along with their associated street furniture. This will lead to over-run and oversail the island positions. Temporary crossing facilities would be provided during delivery periods. Loads will turn left at the mini-roundabout and will turn to proceed southbound on Burleys Road. The splitter islands on the entry and exit arms will be over-run. The entry island bollard / marker will need to be removed. The tree canopy on the entry should be trimmed. A load bearing surface in the western verge of Burleys Road is required. One road sign will need to be removed. Parking in the northern parking bay will need to be removed during deliveries. Parking on the eastern verge should be suspended during deliveries. Loads will continue southbound and will join Granborough Road.

POI	Key Constraint	Details
24	Granborough Road / East Claydon Road Junction 	Loads will turn right and will join East Claydon Road. A swept path assessment has been undertaken and indicates that no physical mitigation works are required.
25	Proposed AIL Access Gate 	Loads will turn left into a new AIL only access that provides direct access to the proposed substation development. A swept path of the turn from the public road has been undertaken.

10 Swept Path Assessment Terminology

The detailed Swept Path Assessment (SPA) drawings for the locations assessed are provided in **Appendix B** for review. The drawings illustrate tracking undertaken for the worst-case loads at each location.

The colours illustrated on the swept paths are:

- **Grey / Black** – Ordnance Survey (OS) / topographical base mapping,
- **Green** – vehicle body outline (body swept path),
- **Red** – tracked pathway of the wheels (wheel swept path); and
- **Purple** – the oversail tracked path of the load where it encroaches out with the trailer (load swept path).

Where mitigation works are required, the extents of the overrun and oversail areas are illustrated and fully detailed on the SPA drawings. Additional land areas to those indicated in the SPA drawings may be required to facilitate the construction of the proposed physical mitigation measures depending on the site conditions and topography. The extent of any additional areas required to construct the mitigation works highlighted within this study and the detailed design of said mitigation works is beyond the scope of this study and should be confirmed on detailed topographical survey data.

Where provided by the client, topographical data has been utilised. Please note that PF cannot accept liability for errors on the data source, be that OS base mapping, aerial mapping, historic topographical surveys or client supplied data. Where applicable, mapping has been augmented with aerial imagery for illustration only. The accuracy of this mapping cannot be confirmed by PF.

11 Summary

11.1 Summary of Route Survey Review

Pell Frischmann Consultants Limited (PF) has been commissioned by The Applicant to undertake a Route Survey Review (RSR) to examine the issues associated with the transport of wind turbine Abnormal Indivisible Loads (AIL) associated with the construction and development of the proposed Rosefield Solar Farm, located to the southwest of Winslow, within the Buckinghamshire Council administrative area.

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The route from the M1 to the proposed site access junction is considered feasible for all loads, subject to the provision of the outlined mitigation works and permissions.

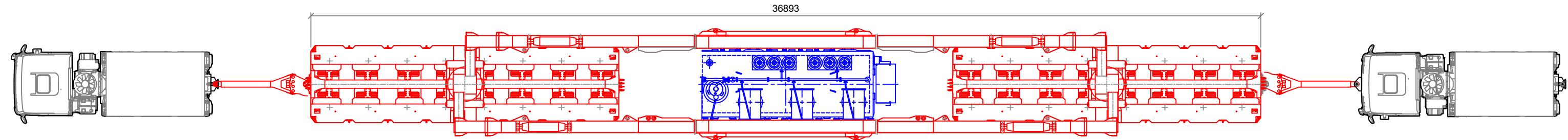
The report is presented to the Applicant for consideration. Various road modifications and interventions are required to successfully access the site. If these are assessed, approved and undertaken, access to the site is considered feasible.

11.2 Further Actions

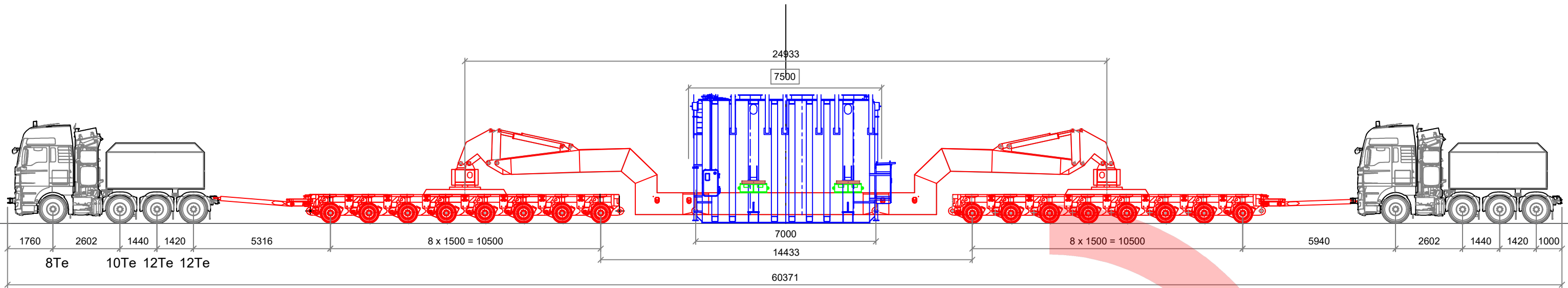
The following actions are recommended to pursue the transport and access issues further:

- Prepare detailed mitigation design proposals to help inform the land option / consultee discussions;
- Undertake discussion with the affected utility providers and roads agencies;
- Obtain the necessary statutory licences to enable the mitigation measures; and
- Develop a detailed operational Transport Management Plan to assist in transporting the proposed loads.

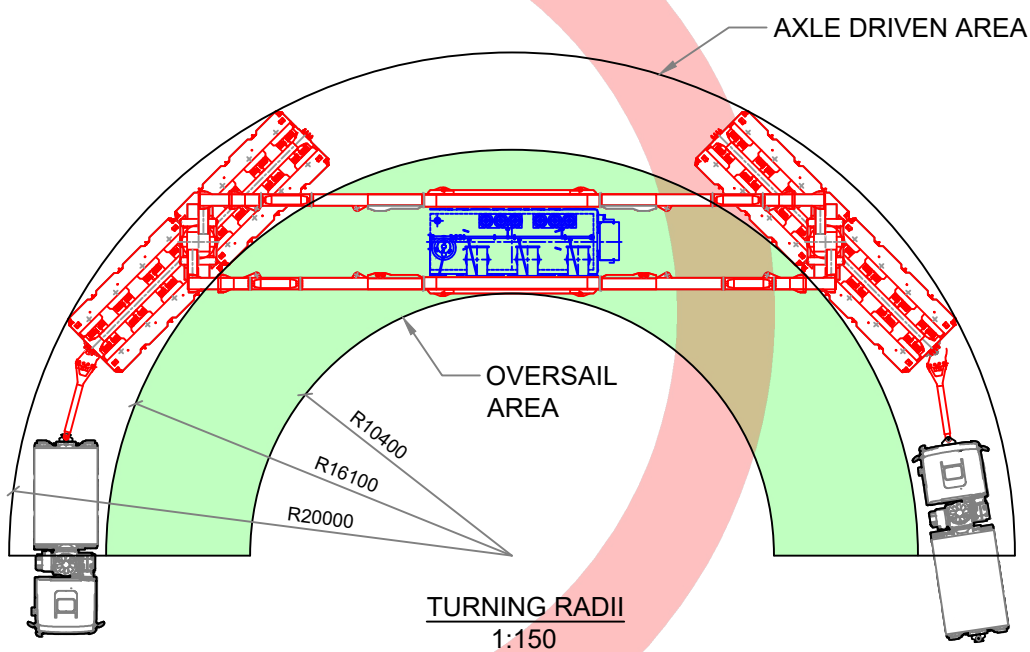
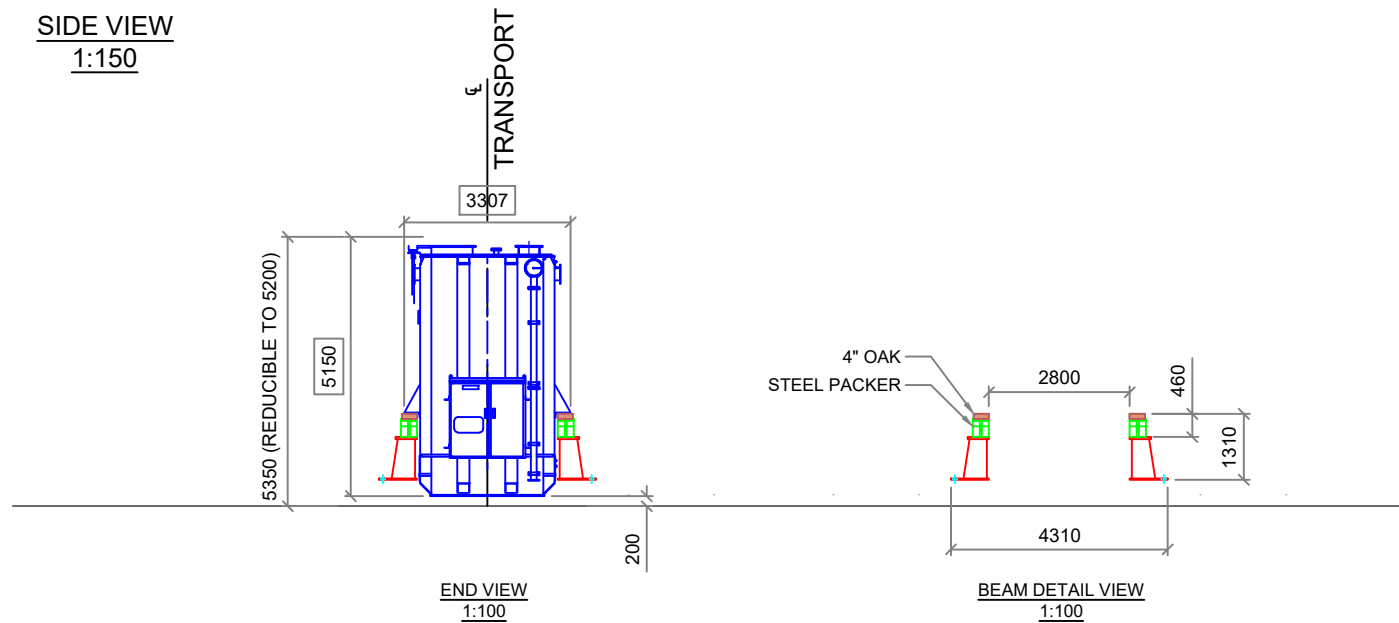
Appendix A Indicative Transport Details



PLAN VIEW
1:150



SIDE VIEW
1:150

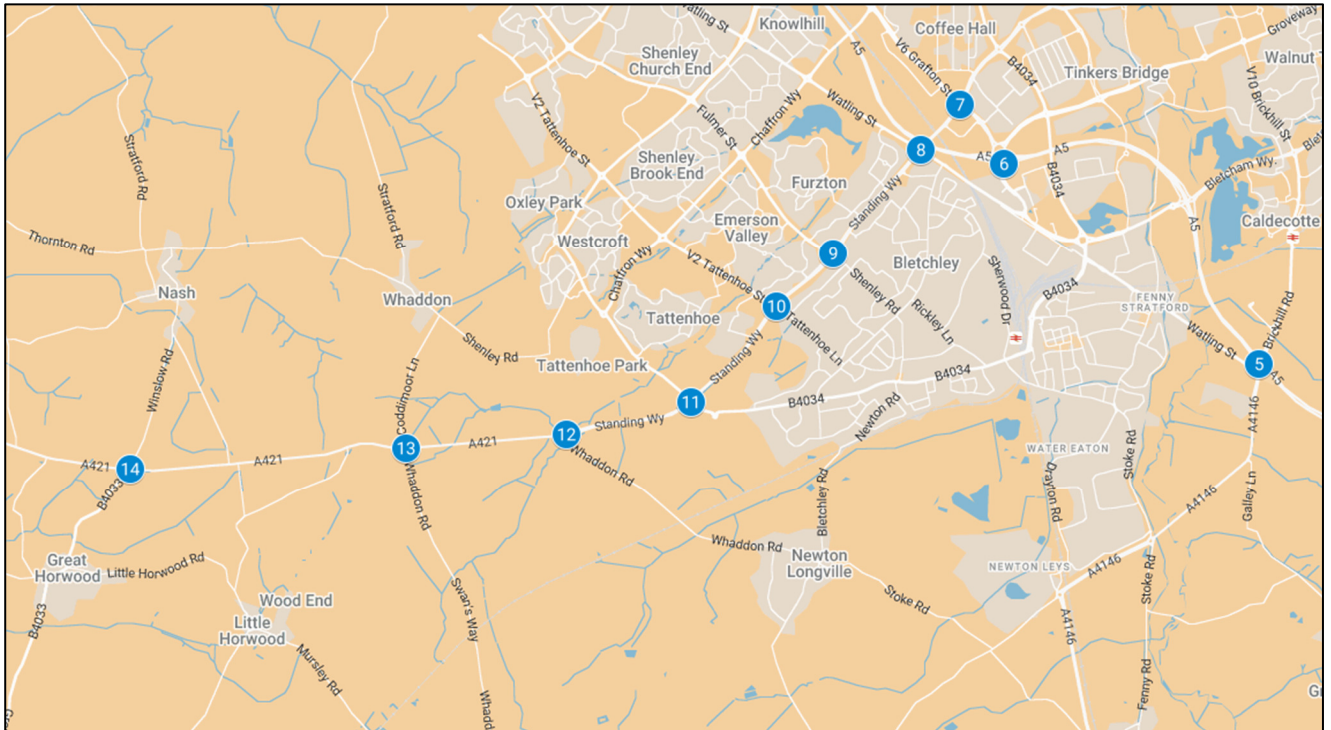
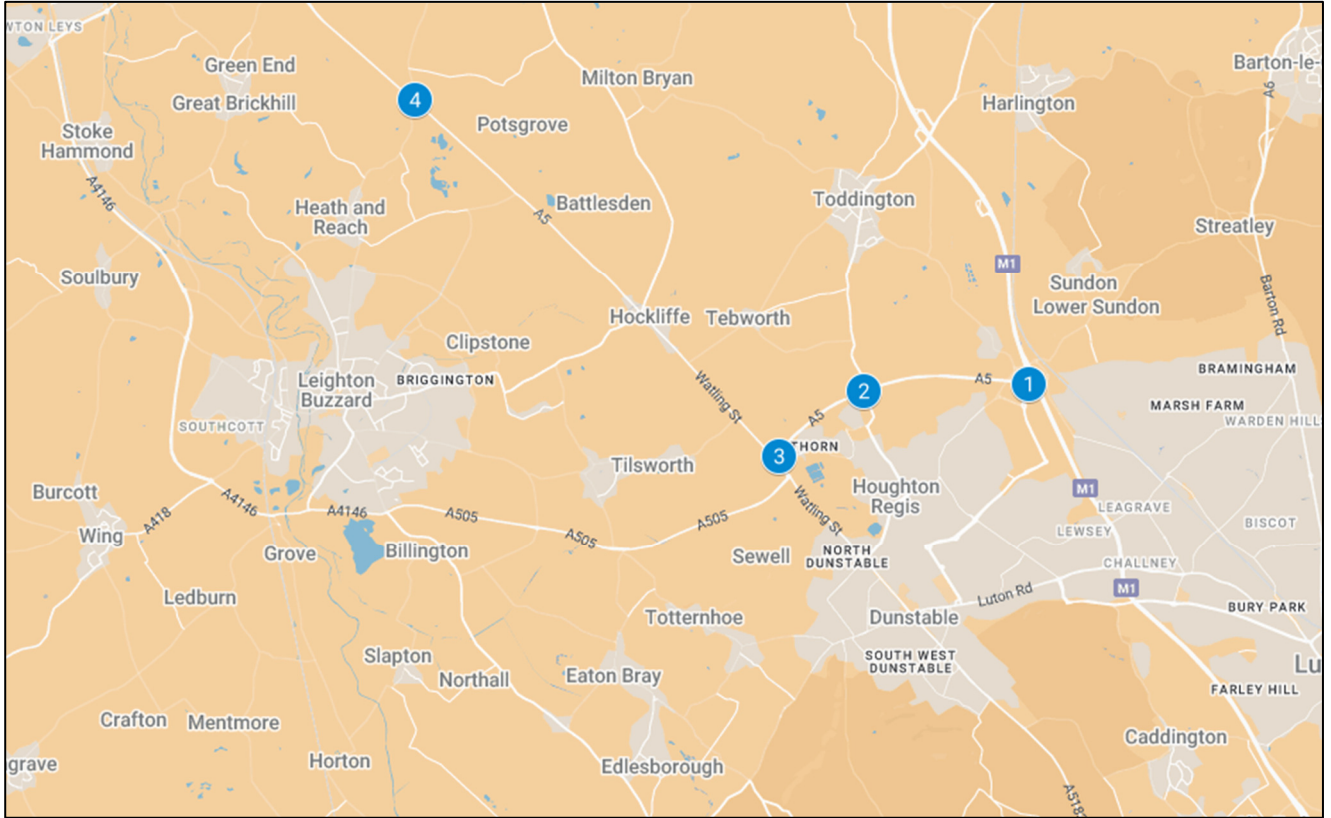


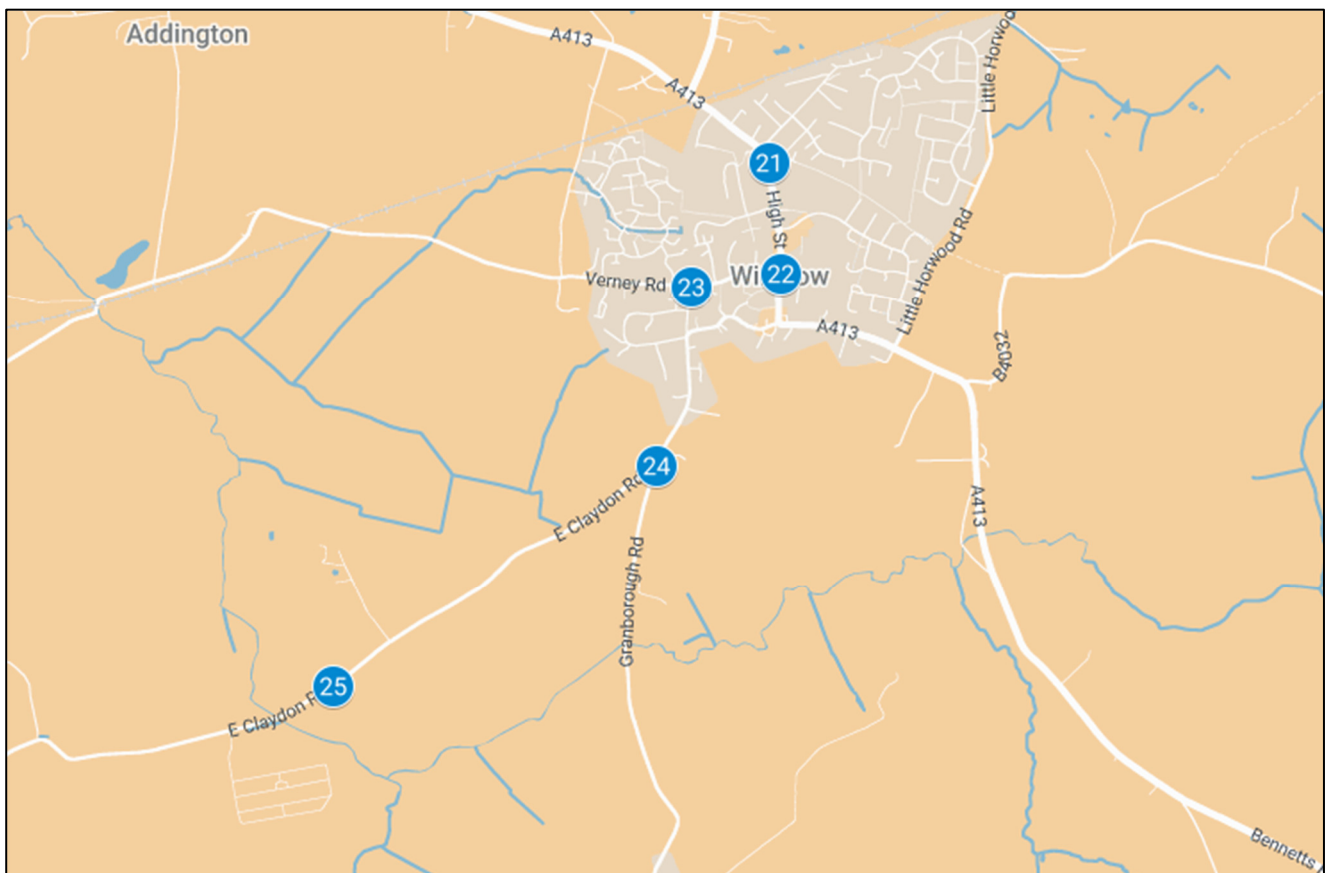
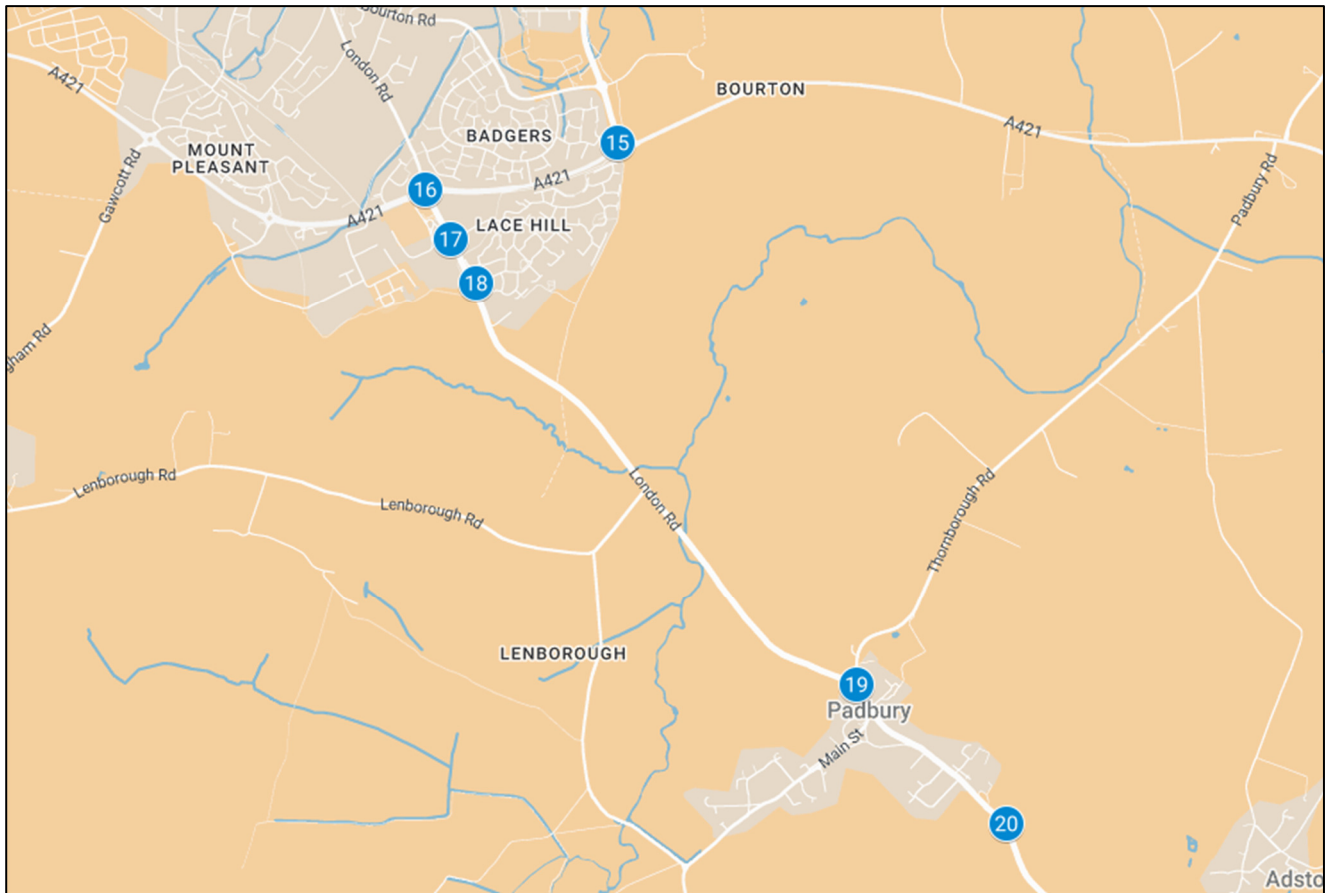
DRAWING NOTES: <

Appendix B Points Of Interest

An electronic version of the POI plans can be found here:

<https://www.google.com/maps/d/edit?mid=1SJwTNFLdygbl2CUVZSkdCEaoikeIDp0&usp=sharing>





Appendix C Swept Path Assessments



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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale			
					Drawn	GB	10/07/2025	1:1000 @ A3			
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg			
					Checked	SW	09/07/2025	Drawing Status			
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		1	Draft	
							Drawing No.		Notes:		Revision
Key							SK01		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0
Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail						



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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfedinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale				
					Drawn	GB	10/07/2025	1:1000 @ A3				
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Checked	SW	09/07/2025	Drawing Status				
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		Point of Interest		2		Draft			
					CANDIDATE TRANSFORMER							
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A5 / B5120 ROUNDABOUT		Drawing No.		Notes:		Revision	
							SK02		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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			Designed	GB	08/07/2025		
			Checked	SW	09/07/2025	Drawing Status Draft	
Client ROSEFIELD SOLARFARM LIMITED	Drawing Title CANDIDATE TRANSFORMER		Point of Interest		3		
			Drawing No. SK03	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		Revision 0	
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A5 / WATLING STREET ROUNDABOUT						



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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale		1:1000 @ A3	
	Drawing Title		CANDIDATE TRANSFORMER		Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg			
					Designed	GB	08/07/2025				
					Checked	SW	09/07/2025	Drawing Status			
Client		ROSEFIELD SOLARFARM LIMITED		Point of Interest		4					
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A5 / WOBURN ROAD ROUNDABOUT		Drawing No.		Notes:		Revision	
						SK04		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0) 131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale		1:1000 @ A3		
					Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Designed	GB	08/07/2025					
					Checked	SW	09/07/2025	Drawing Status		Draft		
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		5			
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A5 KELLY’S KITCHEN ROUNDABOUT		Drawing No.		Notes:		Revision	
							SK05		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



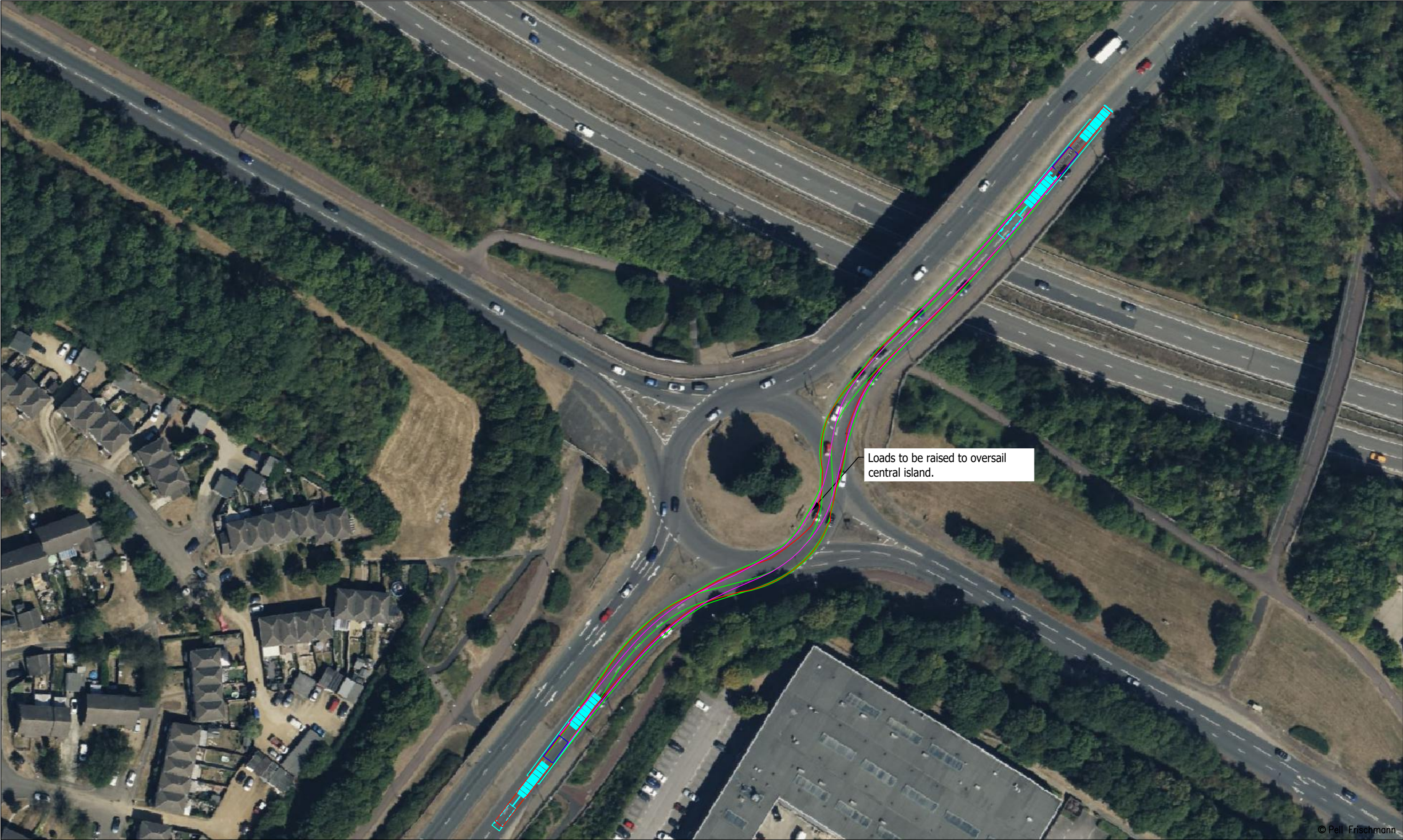
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0) 131 240 1270 Email: pfedinburgh@pellfrischmann.com	Project ROSEFIELD SOLAR FARM			Name	Date	Scale 1:1000 @ A3		
			Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
			Designed	GB	08/07/2025			
			Checked	SW	09/07/2025	Drawing Status Draft		
Client ROSEFIELD SOLARFARM LIMITED	Drawing Title CANDIDATE TRANSFORMER		Point of Interest		6			
			Drawing No. SK06	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			Revision 0	
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A5 REDMOOR ROUNDABOUT							



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			Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg	
			Designed	GB	08/07/2025		
			Checked	SW	09/07/2025	Drawing Status Draft	
Client ROSEFIELD SOLARFARM LIMITED	Drawing Title CANDIDATE TRANSFORMER		Point of Interest		7		
			Drawing No. SK07		Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.	Revision 0	
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location A421 BLEAK HALL ROUNDABOUT						



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					Drawn	GB	10/07/2025	1:1000 @ A3			
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg			
					Checked	SW	09/07/2025	Drawing Status			
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		Point of Interest		8		Draft		
					Drawing No.		Notes:		Revision		
Key	SPA Location		CANDIDATE TRANSFORMER		SK08		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0		
					A421 ELFIELD ROUNDABOUT						



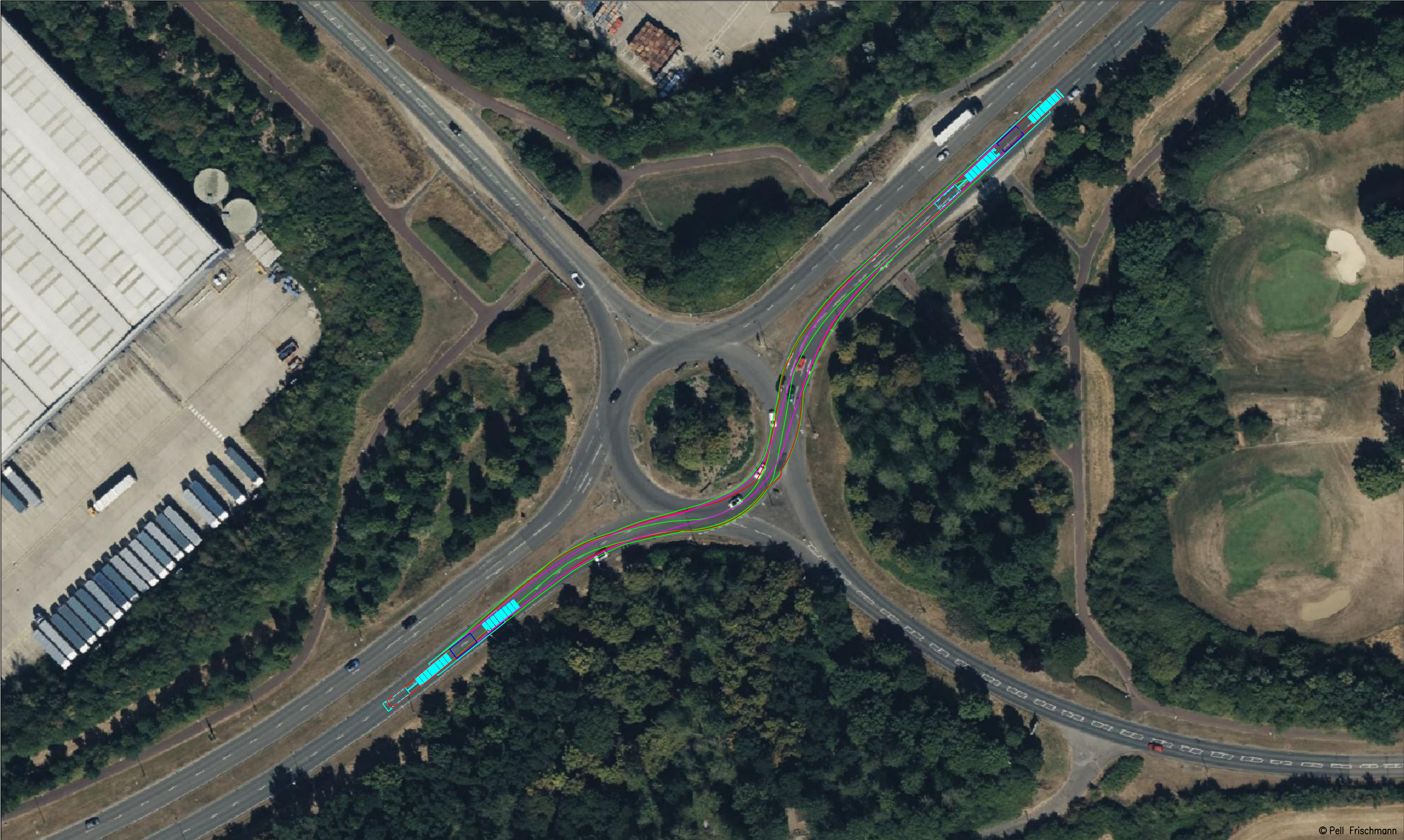
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0) 131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project	ROSEFIELD SOLAR FARM			Name	Date	Scale	
				Drawn	GB	10/07/2025	1:1000 @ A3	
				Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg	
				Checked	SW	09/07/2025	Drawing Status	
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		9	Draft	
				Drawing No.	Notes:		Revision	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	A421 EMERSON ROUNDABOUT	SK09	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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			Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
			Designed	GB	08/07/2025			
			Checked	SW	09/07/2025	Drawing Status		
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		10		Revision
				Drawing No.	Notes:		0	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	A421 WIND MILL HILL ROUNDABOUT		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			



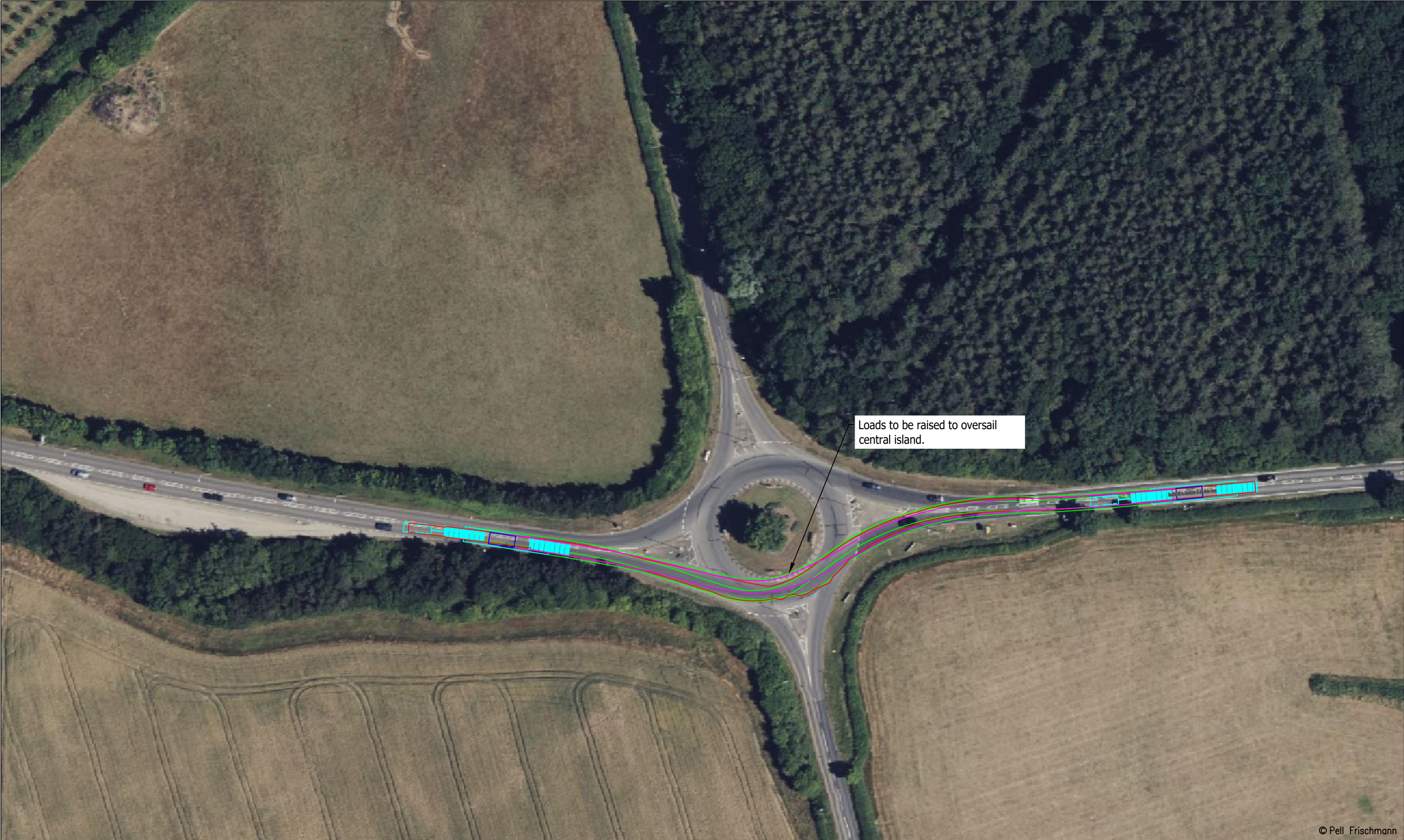
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Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0) 131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale				
					Drawn	GB	10/07/2025	1:1000 @ A3				
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Checked	SW	09/07/2025	Drawing Status				
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		11	Draft		
							Drawing No.		Notes:		Revision	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A421 / B4034 ROUNDABOUT		SK11		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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					Drawn	GB	10/07/2025	1:1000 @ A3				
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Checked	SW	09/07/2025	Drawing Status				
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		Point of Interest		12		Draft			
					CANDIDATE TRANSFORMER							
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A421 BOTTLEDUMP ROUNDABOUT		Drawing No.		Notes:		Revision	
							SK12		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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					Drawn	GB	10/07/2025	1:1000 @ A3			
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg			
					Checked	SW	09/07/2025	Drawing Status			
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		13	Draft	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A421 / WHADDON ROAD ROUNDABOUT		Drawing No.		SK13	Notes:	
									1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		
										Revision	
										0	



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					Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Designed	GB	08/07/2025					
					Checked	SW	09/07/2025	Drawing Status			Draft	
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		14			
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		SPA Location		A421 / B4033 ROUNDABOUT		Drawing No.		Notes:		Revision	
							SK14		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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				Drawn	GB	10/07/2025	1:1000 @ A3		
				Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
				Checked	SW	09/07/2025	Drawing Status		
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		15		Draft	
				Drawing No.	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			Revision	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	A421 / A413 ROUNDABOUT		SK15		0		

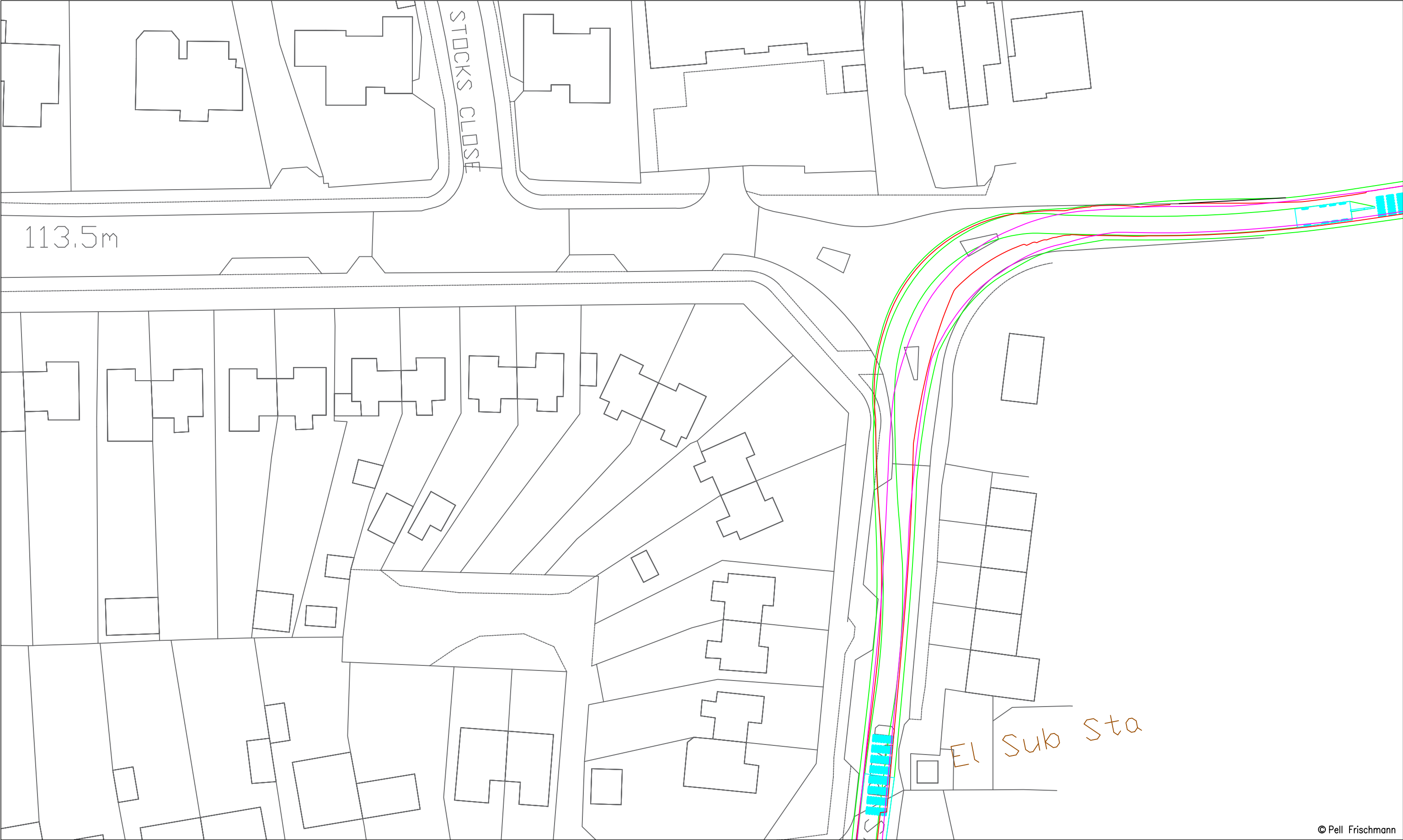


Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0)131 240 1270 Email: pfredinburgh@pellfrischmann.com	Project		ROSEFIELD SOLAR FARM			Name	Date	Scale		1:1000 @ A3		
					Drawn	GB	10/07/2025	File No. 250708 Rosefield AIL tracking.dwg				
					Designed	GB	08/07/2025					
					Checked	SW	09/07/2025	Drawing Status Draft				
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		CANDIDATE TRANSFORMER		Point of Interest		16			
							Drawing No.		Notes:		Revision	
Key							SK16		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	
	Wheel SPA	Body SPA	Load SPA	Indicative	Over-run	Over-sail						
					A421 / LONDON ROAD ROUNDABOUT							

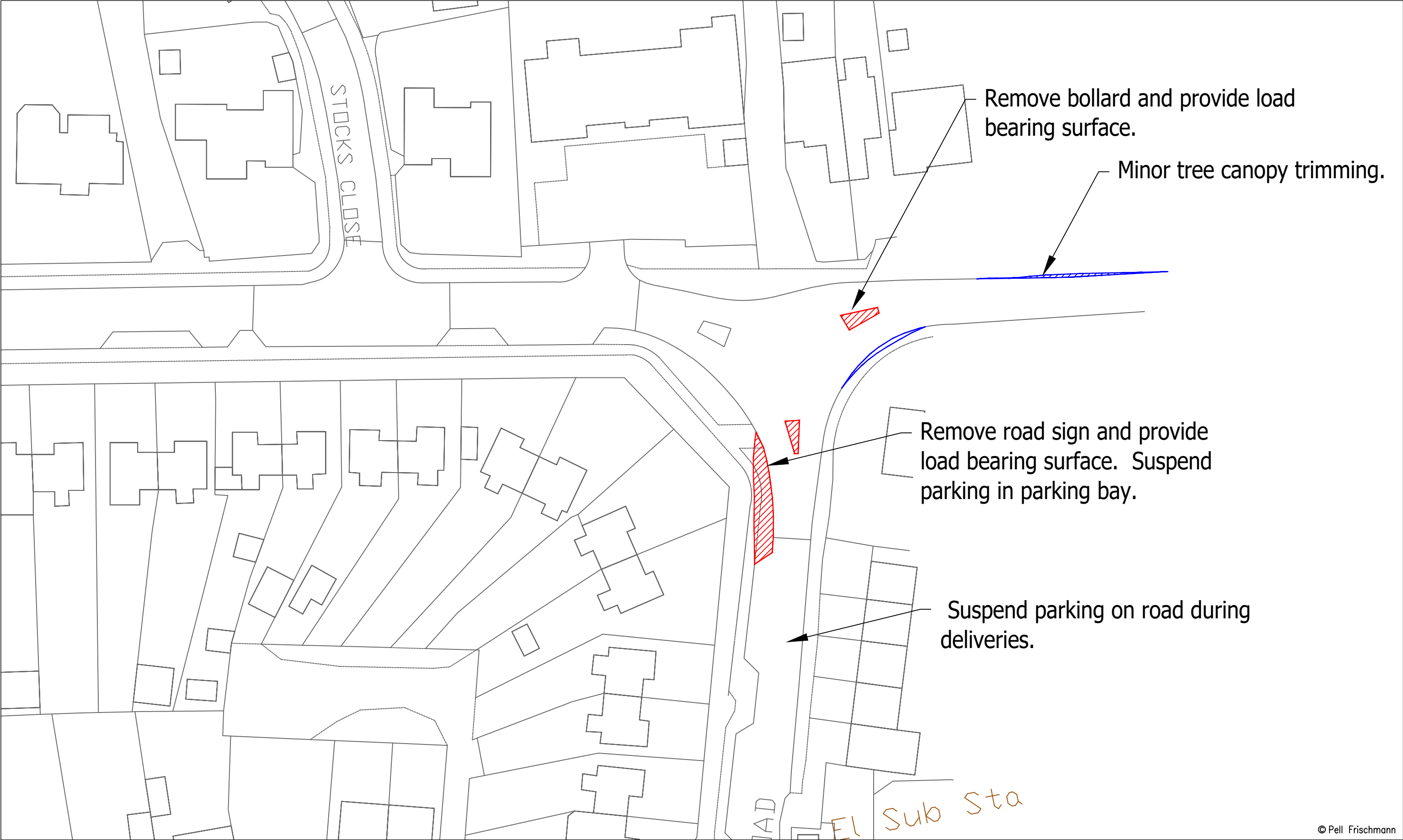


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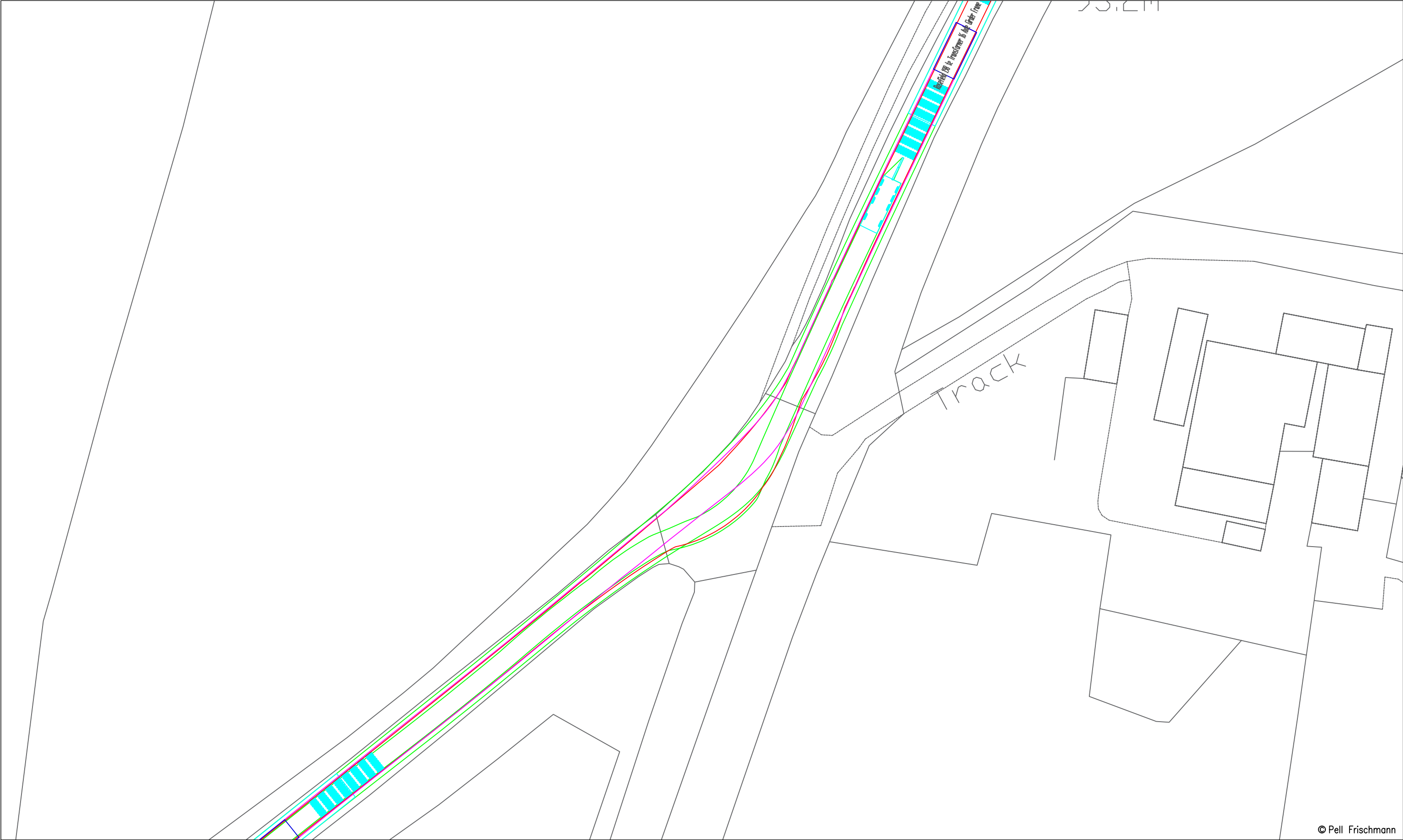
Pell Frischmann 93 GEORGE STREET, EDINBURGH, EH2 3ES Tel: +44 (0) 131 240 1270 Email: pfredinburgh@pellfrischmann.com	Client	ROSEFIELD SOLARFARM LIMITED	Project	ROSEFIELD SOLAR FARM	Name		Date	Scale	
					Drawn	GB	10/07/2025	1:1000 @ A3	
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg	
					Checked	SW	09/07/2025	Drawing Status	
Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	Drawing Title	CANDIDATE TRANSFORMER	SPA Location	A421 / NEEDLEPIN WAY NORTHERN ROUNDABOUT	Point of Interest		17	Draft	
					Drawing No.	Notes			Revision
					SK17	1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			0



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				Drawn	GB	10/07/2025	1:500 @ A3			
				Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg			
				Checked	SW	09/07/2025	Drawing Status			
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		23		Draft		
				Drawing No.	Notes:				Revision	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	VICARAGE ROAD / BURLEYS ROAD JUNCTION, WINSLOW		SK20		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			
								0		



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					Drawn	GB	10/07/2025	1:500 @ A3		
					Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
					Checked	SW	09/07/2025	Drawing Status		
Client	ROSEFIELD SOLARFARM LIMITED		Drawing Title		Point of Interest		22		Draft	
	Key Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail		CANDIDATE TRANSFORMER		Drawing No.		Notes:		Revision	
SPA Location			VICARAGE ROAD / BURLEYS ROAD JUNCTION, WINSLOW		SK20A		1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.		0	



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				Drawn	GB	10/07/2025	1:500 @ A3		
				Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
				Checked	SW	09/07/2025	Drawing Status		
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		24		Draft	
				Drawing No.	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.			Revision	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	GRANBOROUGH ROAD / EAST CLAYDON ROAD JUNCTION		SK21	0			



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			Drawn	GB	10/07/2025	1:500 @ A3		
			Designed	GB	08/07/2025	File No. 250708 Rosefield AIL tracking.dwg		
			Checked	SW	09/07/2025	Drawing Status		
Client	ROSEFIELD SOLARFARM LIMITED	Drawing Title	CANDIDATE TRANSFORMER	Point of Interest		25	Draft	
				Drawing No.	SK22	Notes: 1. All mitigation is subject to confirmation through a test run. 2. This is not a construction drawing and is intended for illustration purposes only. 3. Do not scale from this drawing.	Revision 0	
Key	Wheel SPA Body SPA Load SPA Indicative Over-run Over-sail	SPA Location	EAST CLAYDON ROAD AIL ACCESS JUNCTION					

Appendix D ESDAL Responses

From: Abnormal Loads - Milton Keynes Council
Sent: 25 January 2024 12:02
To: [REDACTED]
Subject: RE: East Claydon Transformer

Hi [REDACTED]
Sorry for the delay. We have reviewed the proposal and it appears acceptable.

When we know the dates of the movement we will need to run it past our streetworks team.

Regards

[REDACTED]
Senior Engineer Structures (Asset Mgt., Maint)
To speak to me use: Microsoft Teams or [REDACTED]
Milton Keynes City Council | Civic, 1 Saxon Gate East | Milton Keynes | MK9 3EJ
www.milton-keynes.gov.uk

From [REDACTED] On Behalf Of Abnormal Loads Enquiries
Sent: 26 January 2024 11:59
To: [REDACTED]
Subject: RE: East Claydon Transformer

Hi [REDACTED]
We have reviewed your notification, please find our report below.

Bridge: OXD/B/18
Address: Buckingham Road
City: Winslow
Easting/Northing: 476690 228346
[View on map](#)

Outcome: Our engineers have completed calculations based upon your proposed load and are unable to clear you to cross the above bridge. Please do not cross this structure.

We check the load carrying capacity of Network Rail owned road over rail bridges affected. We do not check anything else, including:

- * Load carrying capacity of level crossings
- * Clearance to bridge parapets
- * Clearance under a rail bridge
- * Clearance to overhead wires at level crossings

Many Thanks

[REDACTED]
Abnormal Loads Clerk
Abnormal Loads Help

ABNORMAL LOADS MANAGEMENT SERVICE

BUCKINGHAMSHIRE COUNCIL

Aylesbury Vale Area Office, Corrib Industrial Park, Griffin Lane, Aylesbury, Bucks HP19 8BP



**Transport for
Buckinghamshire**

Movement no 118081

Tel 01483 811822

Mail bucks@abloads.com

10/02/2024 14:37:46

To: Pell Frischmann for [REDACTED]

Email address:

Message copied to:

Haulier's reference and vehicle FEASIBILITY - M1 Jct11a to East Claydon, Winslow - Transformer - 4+16 axles
no: / (no vehicle reg'n no)

Origin / destination: M1 Jct11a to East Claydon Road, East Claydon, Winslow

Proposed first date of travel: 00:00:00 01/03/2024

**Movement no 118081: FEASIBILITY STUDY (COMPLETED) - PRIVATE & CONFIDENTIAL -
PRELIMINARY REPORT - M1 Jct11a to East Claydon, Winslow - Transformer - 4+16 axles**

Dear Sirs

FEASIBILITY STUDY (COMPLETED) - PRIVATE & CONFIDENTIAL - PRELIMINARY REPORT - M1
Jct11a to East Claydon, Winslow - Transformer - 4+16 axles

I acknowledge receipt of your FEASIBILITY movement notification as detailed above. Apologies for the delay in replying we don't appear to have received your original email of 27/11/23 which is strange as you're certainly in our database (I did some work with you in Essex CC for example).

Based purely on the vehicle configuration details you submitted AND CURRENT structural information available I am pleased to confirm that the FEASIBILITY notification regarding East Claydon, Winslow, has now been registered, structures checked, and, subject to the agreement of the Police and any other Bridge authorities involved, the movement may take place once you / or the Haulier has notified us.

PLEASE NOTE - This authority accepts that the abnormal load vehicle will proceed at REDUCED HEIGHT when passing under structures along the route where appropriate. Should height limits be included in this response they should only be referenced for guidance purposes and it should be noted that they are an indication of 'safe clearance'.

Under STGO legislation it is your / or the Hauliers responsibility to survey the route to ensure its complete suitability for the ACTUAL vehicle (paying particular attention to the height clearance of possible overhead obstacles) and RE-NOTIFY with full details at the time of travel in line with the Special Order process or DIRECTLY to THIS AUTHORITY.

Kind Regards

[REDACTED]

Abnormal Loads Manager

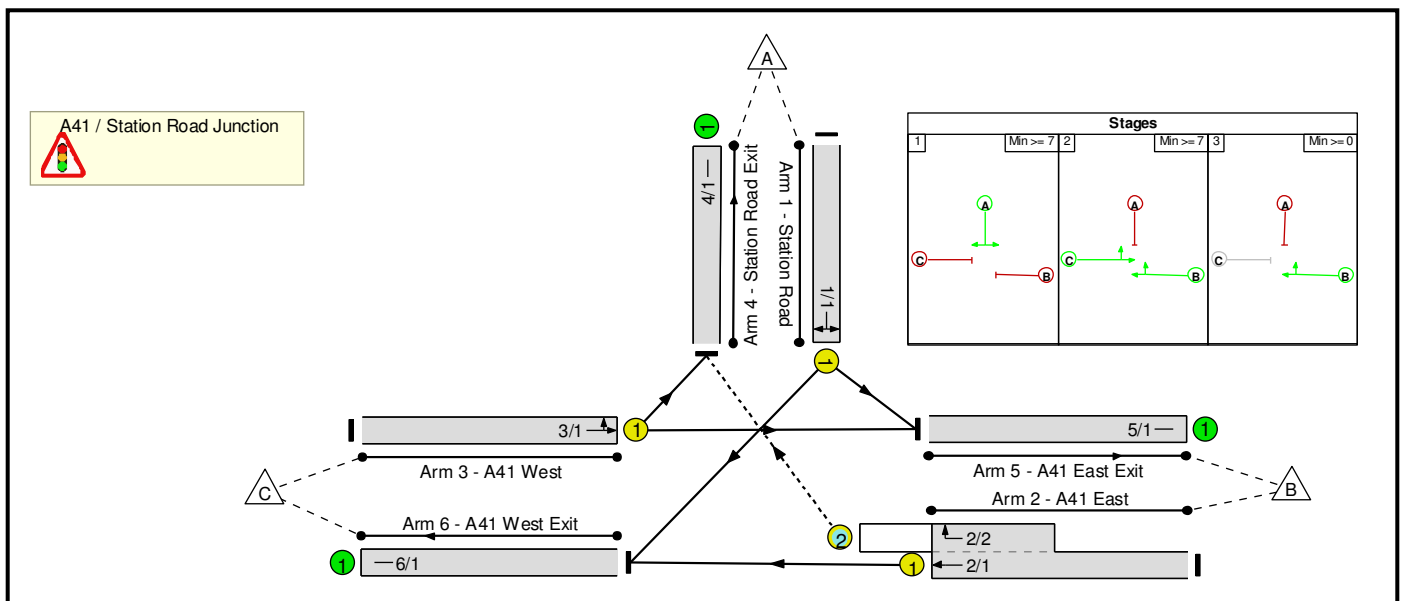
PLEASE NOTE - Buckinghamshire Council Abnormal Loads is now managed by Cascade's AbLoads Service. Roadworks are published on www.one.network and General 'Highways' queries should be directed to roadclosures@buckscc.gov.uk

Annex 4: LinSig Modelling

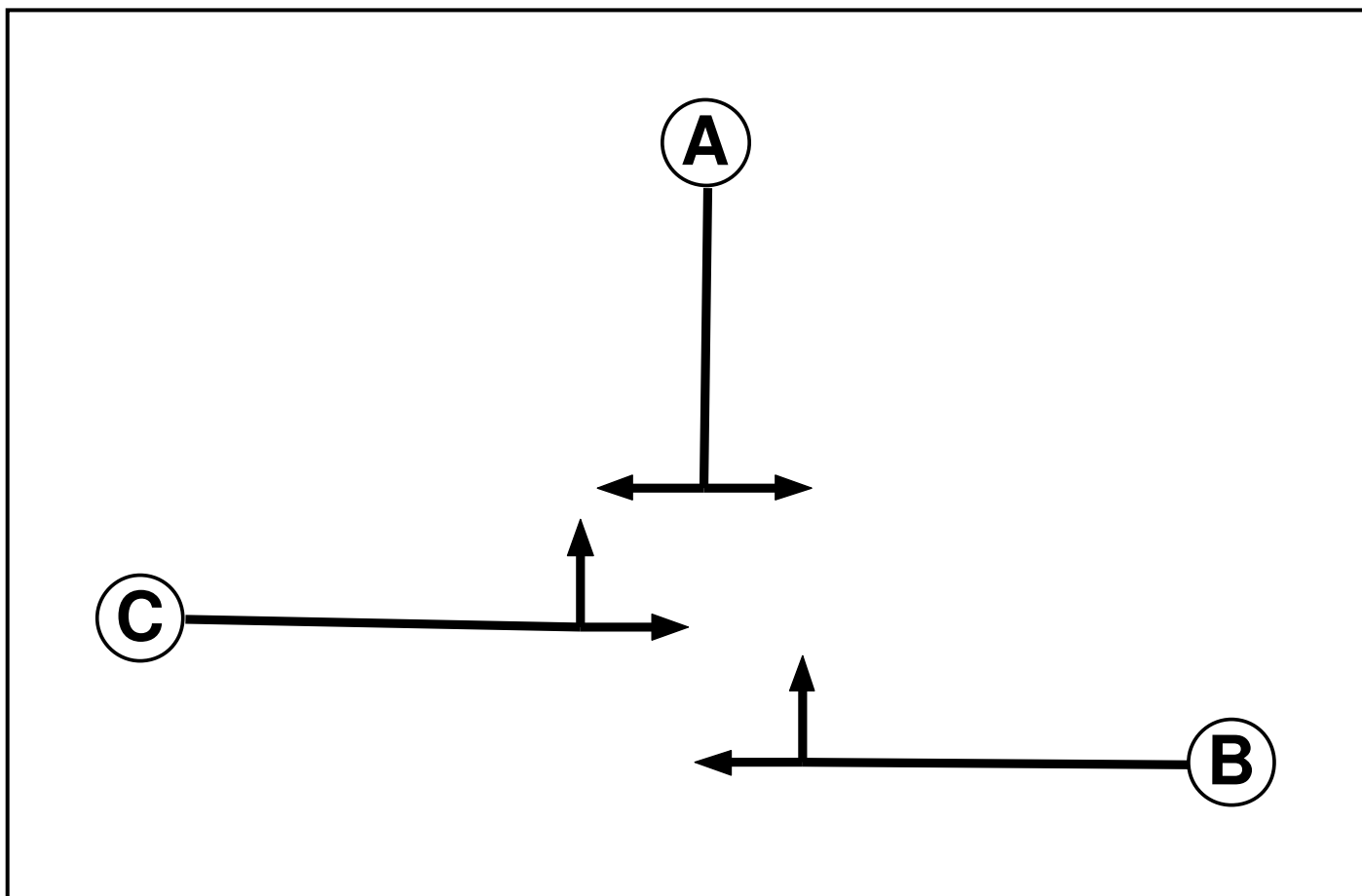
User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Rosefield_A41-Station Rd Junction.lsg3x
Author:	
Company:	
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7

Full Input Data And Results

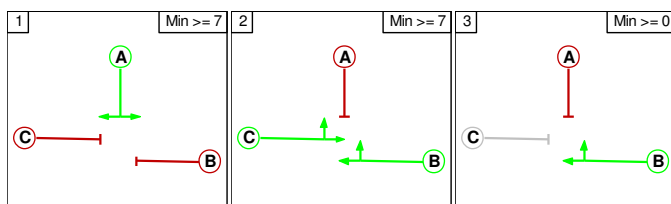
Phase Intergreens Matrix

Terminating Phase	Starting Phase			
		A	B	C
	A		5	5
	B	5		-
	C	6	-	

Phases in Stage

Stage No.	Phases in Stage
1	A
2	B C
3	B

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

From Stage	To Stage			
		1	2	3
	1		5	5
	2	6		0
	3	5	2	

Give-Way Lane Input Data

Junction: A41 / Station Road Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (A41 East)	4/1 (Right)	1439	0	3/1	1.09	All	4.00	-	0.50	4	2.00

Lane Input Data

Junction: A41 / Station Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Station Road)	U	A	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 5 Left	12.00
											Arm 6 Right	20.00
2/1 (A41 East)	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
2/2 (A41 East)	O	B	2	3	6.8	Geom	-	3.20	0.00	Y	Arm 4 Right	Inf
3/1 (A41 West)	U	C	2	3	60.0	Geom	-	2.80	0.00	Y	Arm 4 Left	15.00
											Arm 5 Ahead	Inf
4/1 (Station Road Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A41 East Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A41 West Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2029 AM (Incl Prison+Construction Traffic)'	08:00	09:00	01:00	
2: '2029 PM (Incl Prison+Construction Traffic)'	17:00	18:00	01:00	

Scenario 1: '2029 AM' (FG1: '2029 AM (Incl Prison+Construction Traffic)', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	24	95	119
	B	33	0	685	718
	C	63	607	0	670
	Tot.	96	631	780	1507

Traffic Lane Flows

Lane	Scenario 1: 2029 AM
Junction: A41 / Station Road Junction	
1/1	119
2/1 (with short)	718(In) 685(Out)
2/2 (short)	33
3/1	670
4/1	96
5/1	631
6/1	780

Lane Saturation Flows

Junction: A41 / Station Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Station Road)	3.25	0.00	Y	Arm 5 Left	12.00	20.2 %	1788	1788
				Arm 6 Right	20.00	79.8 %		
2/1 (A41 East)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915
2/2 (A41 East)	3.20	0.00	Y	Arm 4 Right	Inf	100.0 %	1935	1935
3/1 (A41 West)	2.80	0.00	Y	Arm 4 Left	15.00	9.4 %	1877	1877
				Arm 5 Ahead	Inf	90.6 %		
4/1 (Station Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (A41 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A41 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2029 PM' (FG2: '2029 PM (Incl Prison+Construction Traffic)', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	30	41	71
	B	16	0	510	526
	C	41	834	0	875
	Tot.	57	864	551	1472

Traffic Lane Flows

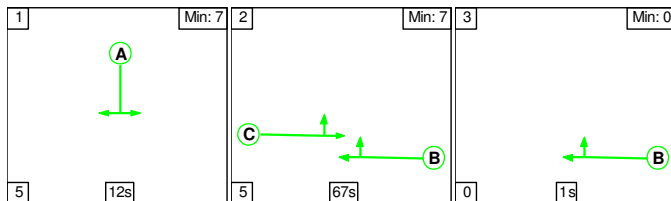
Lane	Scenario 2: 2029 PM
Junction: A41 / Station Road Junction	
1/1	71
2/1 (with short)	526(In) 510(Out)
2/2 (short)	16
3/1	875
4/1	57
5/1	864
6/1	551

Lane Saturation Flows

Junction: A41 / Station Road Junction										
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)		
1/1 (Station Road)	3.25	0.00	Y	Arm 5 Left	12.00	42.3 %	1770	1770		
				Arm 6 Right	20.00	57.7 %				
2/1 (A41 East)	3.00	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1915	1915		
2/2 (A41 East)	3.20	0.00	Y	Arm 4 Right	Inf	100.0 %	1935	1935		
3/1 (A41 West)	2.80	0.00	Y	Arm 4 Left	15.00	4.7 %	1886	1886		
				Arm 5 Ahead	Inf	95.3 %				
4/1 (Station Road Exit Lane 1)	Infinite Saturation Flow						Inf	Inf		
5/1 (A41 East Exit Lane 1)	Infinite Saturation Flow						Inf	Inf		
6/1 (A41 West Exit Lane 1)	Infinite Saturation Flow						Inf	Inf		

Scenario 1: '2029 AM' (FG1: '2029 AM (Incl Prison+Construction Traffic)', Plan 1: 'Network Control Plan 1')

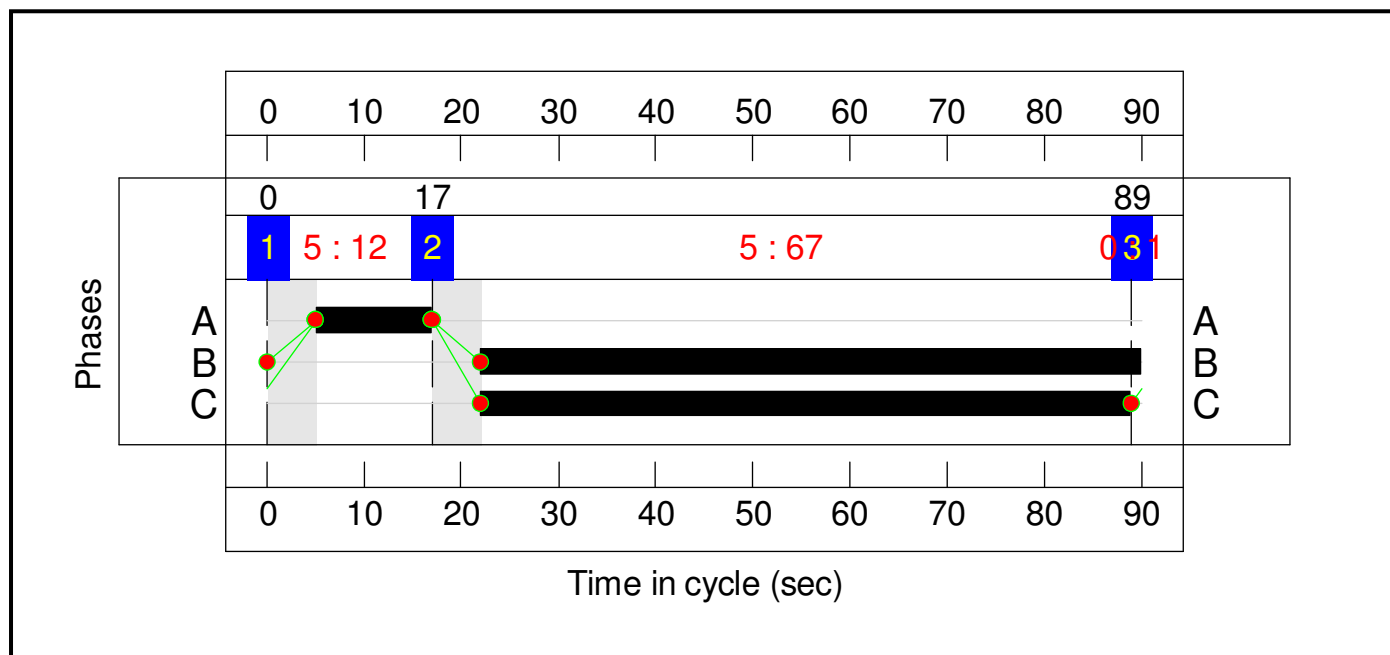
Stage Sequence Diagram



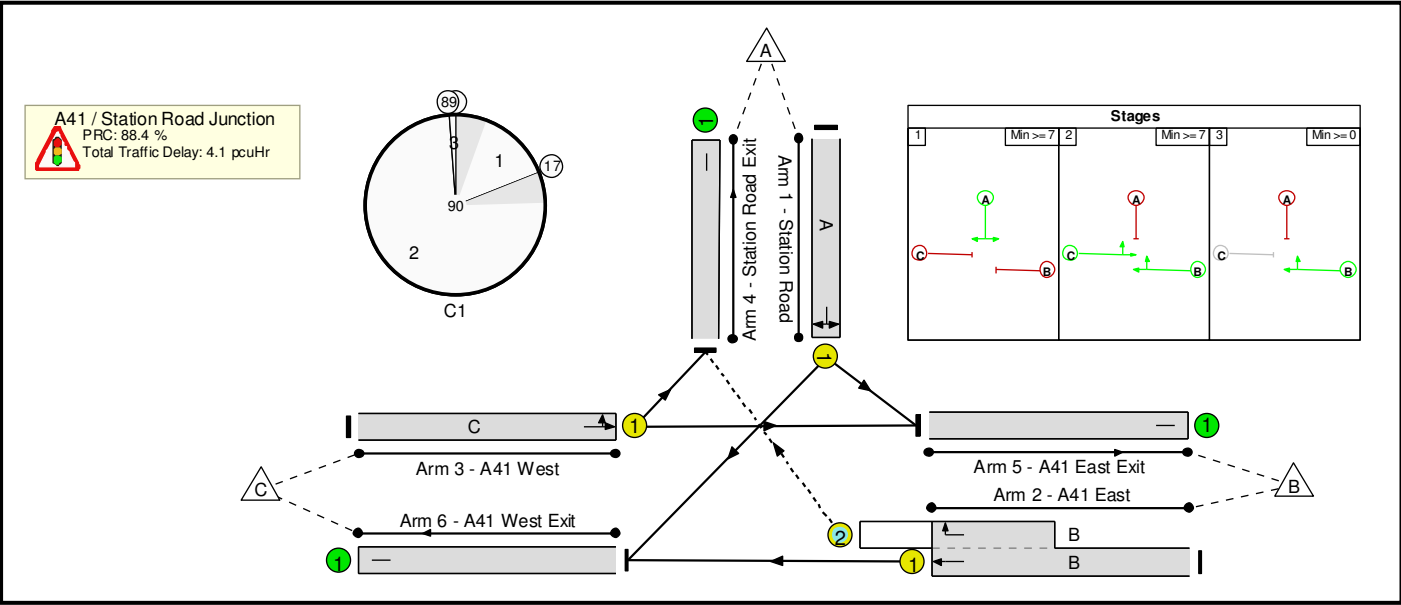
Stage Timings

Stage	1	2	3
Duration	12	67	1
Change Point	0	17	89

Signal Timings Diagram



Network Layout Diagram



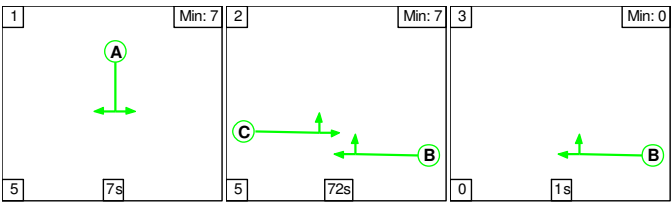
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	47.8%
A41 / Station Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	47.8%
1/1	Station Road Left Right	U	N/A	N/A	A		1	12	-	119	1788	258	46.1%
2/1+2/2	A41 East Right Ahead	U+O	N/A	N/A	B		1	68	-	718	1915:1935	1434+69	47.8 : 47.8%
3/1	A41 West Left Ahead	U	N/A	N/A	C		1	67	-	670	1877	1418	47.2%
4/1	Station Road Exit	U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
5/1	A41 East Exit	U	N/A	N/A	-		-	-	-	631	Inf	Inf	0.0%
6/1	A41 West Exit	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	32	0	1	2.7	1.3	0.0	4.1	-	-	-	-
A41 / Station Road Junction	-	-	32	0	1	2.7	1.3	0.0	4.1	-	-	-	-
1/1	119	119	-	-	-	1.2	0.4	-	1.6	48.2	2.7	0.4	3.1
2/1+2/2	718	718	32	0	1	0.7	0.5	0.0	1.2	6.2	6.1	0.5	6.5
3/1	670	670	-	-	-	0.8	0.4	-	1.2	6.6	6.3	0.4	6.8
4/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	631	631	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 PRC for Signalled Lanes (%): 88.4 Total Delay for Signalled Lanes (pcuHr): 4.05 Cycle Time (s): 90 PRC Over All Lanes (%): 88.4 Total Delay Over All Lanes(pcuHr): 4.05													

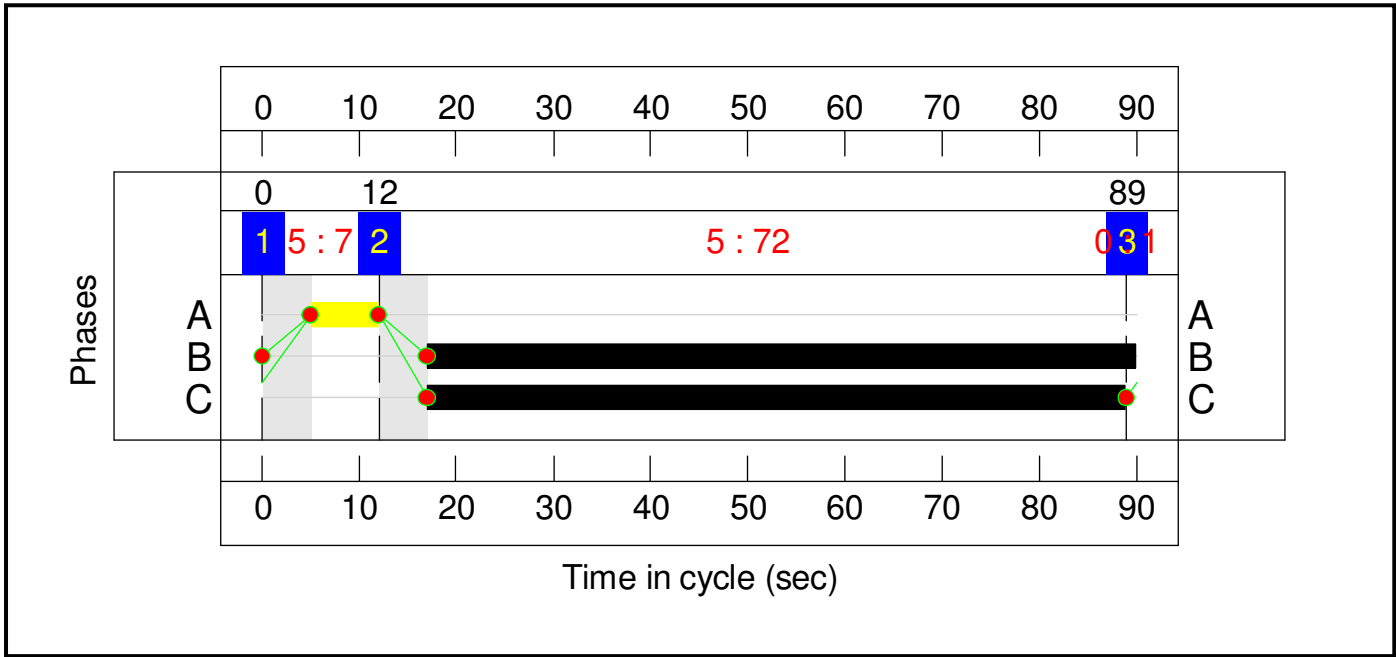
Stage Sequence Diagram



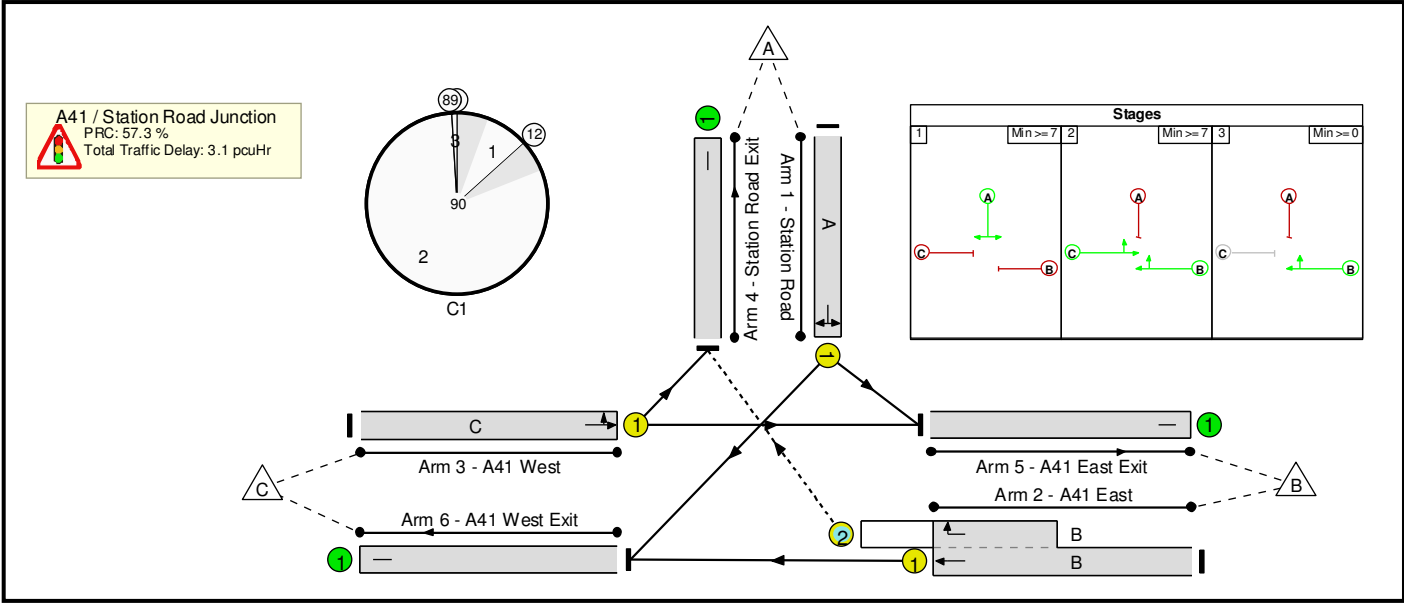
Stage Timings

Stage	1	2	3
Duration	7	72	1
Change Point	0	12	89

Signal Timings Diagram



Network Layout Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	57.2 %
A41 / Station Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	57.2 %
1/1	Station Road Left Right	U	N/A	N/A	A		1	7	-	71	1770	157	45.1 %
2/1+2/2	A41 East Right Ahead	U+O	N/A	N/A	B		1	73	-	526	1915:1935	1556+49	32.8 : 32.8 %
3/1	A41 West Left Ahead	U	N/A	N/A	C		1	72	-	875	1886	1530	57.2 %
4/1	Station Road Exit	U	N/A	N/A	-		-	-	-	57	Inf	Inf	0.0%
5/1	A41 East Exit	U	N/A	N/A	-		-	-	-	864	Inf	Inf	0.0%
6/1	A41 West Exit	U	N/A	N/A	-		-	-	-	551	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	15	0	1	1.8	1.3	0.0	3.1	-	-	-	-
A41 / Station Road Junction	-	-	15	0	1	1.8	1.3	0.0	3.1	-	-	-	-
1/1	71	71	-	-	-	0.8	0.4	-	1.2	59.6	1.7	0.4	2.1
2/1+2/2	526	526	15	0	1	0.3	0.2	0.0	0.5	3.7	3.0	0.2	3.2
3/1	875	875	-	-	-	0.7	0.7	-	1.4	5.7	7.5	0.7	8.2
4/1	57	57	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	864	864	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	551	551	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Cycle Time (s):90 PRC for Signalled Lanes (%):57.3 PRC Over All Lanes (%):57.3 Total Delay for Signalled Lanes (pcuHr):3.11 Total Delay Over All Lanes(pcuHr):3.11													

8.2. References

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- **Ref. 12:** Buckinghamshire Council (2024), 'Buckinghamshire Greenway Map'. Available online at: <https://www.buckinghamshire.gov.uk/parking-roads-and-transport/walking-cycling-and-wheeling/plans-to-improve-walking-cycling-and-wheeling/the-buckinghamshire-greenway/>
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- **Ref. 16:** Depart for Transport, SIAS Limited, et al, (2013) 'The NESAs Manual'



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