CONSTRUCTION TRAFFIC MANAGEMENT PLAN

SOUTHLANDS SOLAR FARM AND BATTERY STORAGE
LAND SOUTH OF RUNWELL ROAD (A132), RUNWELL, WICKFORD
P19-CTMP OCTOBER 2022

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Document Management

Document Review

	Status	Author	Checker	Approver	Date
01	Draft	AC	RR	JD	31 | 08 | 22
-	Issue	SG	JD	JD	10 | 10 | 22
A	Revision[a]				
B	Revision[b]				

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1 Introduction

1.1 This Outline Construction Traffic Management Plan (CTMP) has been prepared by Transport Planning Associates (TPA) on behalf of Enso Green Holdings J Limited (the 'Applicant') in relation to a proposed solar farm and battery storage facility (the 'Proposed Development') on land to the south of Runwell Road (A132), Runwell, Wickford (the 'Site'). The local Planning Authorites are Chelmsford City Council and Rochford District Council. The local Highway Authority is Essex County Council.

Site Location and Proposed Development

1.2 A Site location plan is included at **Figure 1.1**.

1.3 The solar farm Site comprises agricultural land, of approximately 58.99 ha in size. The land is located to the south of Runwell Road (A132), which runs east to west along the northern border.

1.4 The Proposed Development comprises the construction, operation, management and decommissioning of a grid connected solar farm with battery storage and associated infrastructure.

1.5 The construction period will last approximately six months.

Construction Traffic Management Plan

1.6 This Outline CTMP provides a framework for the management of construction vehicle activity to the Site, to ensure that the effect of the construction phase on the local highway network is minimised.

1.7 This CTMP sets out the strategy for the following;

- Site access;
- Construction traffic routing;
- Site compound and internal routing;
- Construction vehicle dimensions, number and frequency; and
- Proposed management measures;

1.8 It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines in relation to construction and movement activities. The Site manager's details can be provided upon request to the highway authority in advance of any work being carried out.

1.9 A Final CTMP, based on the principles set out in this Outline CTMP, will be agreed with Essex County Council prior to construction commencing. The appointed contractor's details will be provided as part of the Final CTMP.

2 Site Access

2.1 This section sets out the details of the construction and operational phase access arrangements.

Construction Phase

2.2 During the construction phase, all vehicles will enter the Site via an existing agricultural access located on Runwell Road/A132 to the north-east of the Site. The access arrangement is shown at **Drawing SK01** contained within **Appendix A**. The access will act as a left in/left out only and will be able to accommodate a 16.5m articulated vehicle. This is the largest vehicle that will visit the Site.

2.3 **Drawing SK01** demonstrates that visibility splays of 215m can be achieved to the east, from a setback of 2.4m, in accordance with the posted speed limit. Swept path analysis has been provided to demonstrate the manoeuvre of this vehicle into the Site.

2.4 The proposed access is considered to be suitable for the following reasons.

- The access is already used by large scale agricultural vehicles and are therefore considered to be suitable for use by construction vehicles;
- All construction vehicles will access and egress the Site in a forward gear;
- To ensure the proposed Site access operate safely during the temporary construction phase, banksmen will be deployed whenever large construction vehicles are accessing and egressing the Site. Banksmen will not direct general traffic, but will indicate to heavy and large construction vehicles when it is appropriate for them to enter/exit the Site. Priority will always be given to the through traffic on the adjacent highway network.

2.5 Temporary signage will be erected in the vicinity of the proposed access junction during the construction phase. Diagram 7301 'WORKS TRAFFIC' in the Traffic Signs Regulations and General Directions (TSRGD) will be used to indicate the access and will read 'WORKS TRAFFIC LARGE VEHICLE TURNING'. These signs will be white text and red background 1050 x 750 mm mounted in 'A' frames. The temporary signs will be in place for the duration of the construction phase.

Public Rights of Way

2.6 There may be instances whereby construction traffic will be required to cross Public Right of Way 231/8, which runs in an east to west alignment through the Site. Where this occurs, the following measures will be implemented:

- Speeds will be limited to 10mph;

- Drivers will stop and give-way to any public right of way users that they encounter;
- Appropriate signage will be installed along the public rights of way to make users aware of the construction activity. This will include information on operating times;
- Banksmen will also be present to ensure the safe movement of all users;
- Public rights of way will be kept clear outside of construction hours;
- Any damage to the surface of the public right of way will be repaired immediately. The surface will be returned to its original condition following construction.

Operational Phase

2.7 Once operational, maintenance vehicles will access the Site by the same access junction as for the construction period. Maintenance vehicles (likely to be a transit van) will visit the Site approximately twice a month.

3 Construction Vehicle Routing

3.1 The details of the construction vehicle route is set out below. Drivers will be made aware of the route in advance of driving to the Site, with strict orders to follow the identified route. Drivers will not be permitted to access the site from the west.

Route Overview

3.2 The designated route for all construction vehicles associated with the construction period is illustrated in **Figure 3.1**.

3.3 The designated route requires all construction vehicles to arrive via the A130, which connects to the A12 to the north and A127 to the south. Both the A12 and A127 connect to the M25.

3.4 Vehicles will depart the A130 onto the A132 Runwell Road. The Site access is situated approximately 130m to the west of the A130/132 junction.

3.5 When departing the Site, construction vehicles will turn left out of the Site access and travel west along Runwell Road for approximately 700m. Here, they will turn at the St Lukes Way/Runwell Road roundabout, and re-join Runwell Road in an eastbound direction. Vehicles will continue east along Runwell Road/A132 for approximately 1km before reaching the A132/A130 junction where they will re-join the A130.

3.6 The proposed construction vehicle route provides the most appropriate route from the strategic highway network to the Site. There are no posted weight or height restrictions along the route, and it does not pass through any built-up residential areas.

Route Signage

3.7 Temporary road signage will be implemented along the designated route to inform background traffic of the ongoing construction works and to direct construction traffic to and from the Site. The signs will be located at key points on the route, such as at junctions.

3.8 All signage will be compliant with Chapter 8 of the Traffic Signs Manual where applicable. The following points will be considered when locating signage:

- The position of the sign in relation to the highway;
- Possible distraction to drivers; and
- The proximity to junctions.

Management of Deliveries

3.9 Due to the relatively low number of vehicles associated with the construction phase at the Site, there is not anticipated to be any delay to background traffic (see **Section 5**). Background traffic will always be given priority in the vicinity of the Site access junction.

3.10 The phone number of the Site Manager will be made available to all drivers of vehicles that will be accessing the Site. The drivers of the construction vehicles will be required to call ahead when stationary. A layby is situated on the A130, approximately 2km away from the Site which could be used for vehicles to pull over when making calls. This will allow enough time for banksmen to prepare at the Site access junction.

3.11 The following procedure will be initiated when deliveries are made to the Site:

Procedure for Arrival to Site

- Driver to call ahead to Site when stopped at the identified layby, to the south of the A130;
- The banksmen are mobilised and will go to position at the Site access;
- The driver will be informed that the operators are in place and it is appropriate to travel to the Site via the agreed route;
- All operatives will communicate with each other, as necessary; and
- Banksmen will assist HGV's to manoeuvre from the Site access, but will not direct general traffic.

3.12 The following procedure will be initiated when HGV's are leaving the Site:

Procedure for Leaving the Site

- Before drivers depart, the Site Manager will be notified. They will then mobilise the banksmen at the Site access;
- Drivers will be advised when the banksmen are in place; and
- Banksmen will guide the drivers exiting the Site.

Summary

3.13 The proposed construction vehicle route provides the most appropriate route between the strategic highway network and the Site. There are no posted weight of height restrictions along the route, and it does not pass through any built-up residential areas.

3.14 The use of any roads other than the designated and signposted route shall not be permitted and this shall be enforced through the agreement of the CTMP.

3.15 Appropriate management measures will be provided throughout the construction phase in order to manage the arrival and departure of HGVs at the Site. This is set out further in **Chapter 6**.

4 Contractors Compound and Internal Routing

Construction Workers

4.1 Approximately 60 to 70 construction workers are anticipated to be required on Site during peak construction. The location where staff will travel from is unknown at this stage as it will depend on the appointed contractor. However, it is envisaged that the majority of non-local workforce will stay at local accommodation and be transported to the Site by minibuses to minimise the impact on the strategic and local highway network. Full details of the minibus operation will be set out in the final CTMP, to be secured by planning condition.

4.2 Construction worker start and finish times will be coordinated to avoid travel during the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00).

Construction Compound

4.3 A construction compound will be set up within the Site, near to the Site access. This will accommodate storage, parking, offices and welfare facilities.

4.4 At this stage, it is envisaged that approximately 20-30 temporary parking spaces will be provided. This will be confirmed within the final CTMP. No parking by contractors, visitors or delivery vehicles will be permitted on the local highway network or the Site access road at any time during the construction phase, and visitors will be advised of the parking arrangements in advance of travelling to the Site. The Site Manager will monitor that parking is taking place in the designated area on a regular basis.

4.5 No diversion of pedestrian routes, parking suspensions or closure of lanes are required.

4.6 The compound will be designed to accommodate the turning movement of a 16.5m articulated vehicle. This will enable large vehicles to enter and leave the Site in forward gear.

Internal Access Road

4.7 The Proposed Development will include internal access roads throughout the Site allowing for the movement of construction and maintenance vehicles.

4.8 The internal access road will be completed during the initial stages of construction so that temporary haul routes are not necessary.

4.9 During the construction phase, appropriate turning areas will be provided in the vicinity of the internal access road to ensure all vehicles egress the site in a forward gear.

5 Construction Vehicle Trip Generation

5.1 It is anticipated that the construction phase will last for approximately six months. Construction activities and deliveries will be carried out Monday to Friday 08:00-18:00 and between 08:00 and 13:30 on Saturdays. No construction activities or deliveries will occur on Sunday or Public Holidays. Where possible, construction deliveries will be coordinated to avoid construction vehicle movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00).

5.2 The construction period will include the use of HGVs to bring the equipment onto the Site and this will be strictly managed to ensure that vehicle movement is controlled and kept to a minimum. The largest vehicle that will be used to deliver equipment to the Site will be a 16.5m articulated vehicle.

5.3 Deliveries to the Site shall be reported to the Site Manager and will be made by the smallest possible vehicles for that particular item of plant or material.

Construction Vehicle Movements: Solar Farm

5.4 The Applicant has advised that 430 deliveries will be required for the solar modules and mounting structures. The largest vehicle to deliver this equipment will be a 16.5m articulated vehicle.

5.5 It is anticipated that the proposed solar farm will have a total of 13 inverter/transformer stations. It is assumed that these would be transported individually due to their weight and as such it is anticipated that this would equate to a total of 13 deliveries.

5.6 It is also anticipated that the internal equipment housed within the substation container and the external equipment located within the substation compound would be delivered on four 10m rigid lorries and/or 16.5m articulated lorries.

5.7 It is likely that the material required for the internal access tracks will arrive by 10m rigid vehicles and it is anticipated that 215 deliveries will be required.

5.8 Front end JCBs (or similar) would also be required to transport equipment around the Site, and to distribute the graded stone required for the access road as necessary. It is anticipated that five JCBs will be required and that these will be transported to the Site by a 16.5m low loader.

5.9 In addition, there will be a number of deliveries bringing sand, gravel and cables to the Site. These will predominately use 10m rigid vehicles (or smaller). It is anticipated that there could be around 315 of these deliveries over the course of the construction period.

5.10 **Table 5.1** sets out a summary of the HGV movements that could be associated with the construction phase of the solar farm.

Table 5.1 Heavy Goods Vehicle Movements – Construction Period

Activity	Type of Vehicle	Total Number of Deliveries
Solar Modules & Mounting Structures	Max 16.5 Articulated	430 (860 two-way movements**)
Inverters/Transformers	10m Rigid	13 (26 two-way movements)
Substation	10m Rigid and 16.5m Articulated	4 (8 two-way movements)
Internal Access Tracks	10m Rigid	215 (430 two-way movements)
General	Front End JCB by low loader	5 (10 two-way movements if driven to Site)
Other (sand, gravel, waste etc)	10m Rigid	315 (630 two-way movements)
Total		**982** deliveries (average of 8 deliveries per day or **16** two way movements per day)*
10% Buffer		**1081** deliveries (average of 9 deliveries per day or **18** two way movements per day)*
* Deliveries taking place over a six month period (130 working days) **Two-way movements relate to arrivals plus departures		

5.11 As set out in **Table 5.1** it is anticipated that 982 deliveries (1,964 two-way movements) could be made by HGVs during the construction of the solar farm, at an average of around eight deliveries, or 16 two-way movements, per day. If a 10% buffer is applied to represent a worst case, the number of deliveries will increase to an average of nine per day.

5.12 There will be a relatively flat programme for deliveries of equipment to the Site. The largest number of delivers are related to the solar panels themselves. These are not stored on Site for long periods of time, and tend to be delivered on a 'just-in-time' basis, before they are installed.

5.13 Notwithstanding this, there is likely to be a small peak in deliveries early in the construction process, for Site set-up, including the construction of the access track. The Applicant has advised that there will be no more than 15 deliveries per day during this period, which will last for two or three weeks.

Construction Worker Trips

5.14 In addition to the HGV movements identified in **Table 5.1**, there will also be a number of construction movements associated with smaller vehicles for the transportation of construction workers and sub-contractors. It is likely that that there could be up to 50 car/LGV arrivals per day (100 two-way movements).

Construction Vehicle Movements Timings

5.15 As stated and where possible, construction deliveries will be coordinated to avoid construction vehicle movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00). Due to the Site operational hours (08:00-18:00), construction worker travel will occur outside of the peak hours.

Battery Storage

5.16 Components which are required to construct the battery storage facility will arrive by HGV (maximum size of 16.5m length). In summary, it is proposed that the following HGV movements could be associated with the construction of the battery storage facility, as set out in **Table 5.2**.

Table 5.2 Heavy Goods Vehicle Movements – Construction Phase

Activity	Type of Vehicle	Total number of Deliveries
Battery Modules	Max 16.5m Articulated	24 (48 two-way movements)
General Deliveries (cables, fencing etc.)	16.5m Articulated or 10m Rigid	75 (150 two-way movements)
Contractor's Compound	16.5m Articulated	6 (12 two-way movements)
Total		**105** deliveries (average of one delivery per day or up to two two-way movements)
* Deliveries taking place over a six month period (130 working days)		

5.17 As set out in **Table 5.2**, it is anticipated that a maximum of 105 deliveries (210 two-way movements) could be made by HGVs during the construction of the battery storage facility, at an average of one delivery, or up to two two-way movements per day.

Operational and Decommissioning Phases

5.18 Once operational, maintenance vehicles will access the Site by the same access junction as for the construction phase. Maintenance vehicles (likely to be a transit van) will visit the Site approximately twice a month.

5.19 Space will be available within the Site on the access road for such a vehicle to turn around to ensure that reversing will not occur onto the highway.

5.20 The traffic management elements of the decommissioning phase will be addressed in the decommissioning plan, which can be secured by a suitably worded planning condition.

Summary

5.21 It is expected that there will be approximately nine HGVs accessing the Site each day during the construction phase (eight associated with the solar farm and one associated with the Battery Storage Facility). There will also be construction workers arriving at the Site in the morning and departing in the evening, although the numbers involved are forecast to be relatively low compared to background traffic, and will occur outside of peak hours.

5.22 The level of traffic forecast during the temporary construction phase is therefore low and it is concluded that it will not have a material impact on the safety or operation of the local highway network.

6 Construction Traffic Management Measures

6.1 The contractor will introduce measures to minimise the impact resulting from construction activities. It will be the responsibility of the Project Manager and Site Manager to oversee the implementation of the measures.

6.2 The measures are set out below.

Signage

(i) Signs to direct construction vehicles associated with the development will be installed along the construction traffic route. Delivery drivers, contractors and visitors will be provided with a route plan in advance of delivering to Site to ensure that vehicles follow the identified route;

(ii) All signage on the designated route will be inspected daily by the Site Manager, to ensure they are kept in a well maintained condition and located in safe and appropriate locations;

Vehicle Movement

(iii) Where possible, construction deliveries by HGV will be coordinated to avoid the network peak hours of 08:00-09:00 and 17:00-18:00;

(iv) Banksmen will be provided at the Site access to indicate to construction traffic when it is safe for them to enter and exit the Site;

Booking System

(v) A booking system will be set up to manage arrivals and departures to the Site. A log will be kept as part of the booking system;

Parking

(vi) Advisory signs informing contractors and visitors that parking is not permitted on-street in the vicinity of the Site or on the Site access road. Contractors and visitors will be advised that parking facilities will be provided on-Site in advance of visiting the Site and that they should not park on-street;

Wheel Wash Facility

(vii) A wheel washing facility will be provided. This will be located on the access track near to the Site access;

(viii) A visual inspection of vehicles will be undertaken before they depart the Site, to ensure that they are not carrying any residual debris onto the highway;

Noise Reduction and Air Quality

(ix) When on Site and when not in use, vehicle engines will be switched off;

(x) Vehicles carrying material off-Site will be sheeted to prevent the spread of dust;

(xi) In dry conditions, areas near to the Site access will be sprayed with water supplied to prevent the spread of dust;

Site Security

(xii) The Site will be secured at all times via a perimeter fence or temporary fencing. CCTV will be operational within the construction compound;

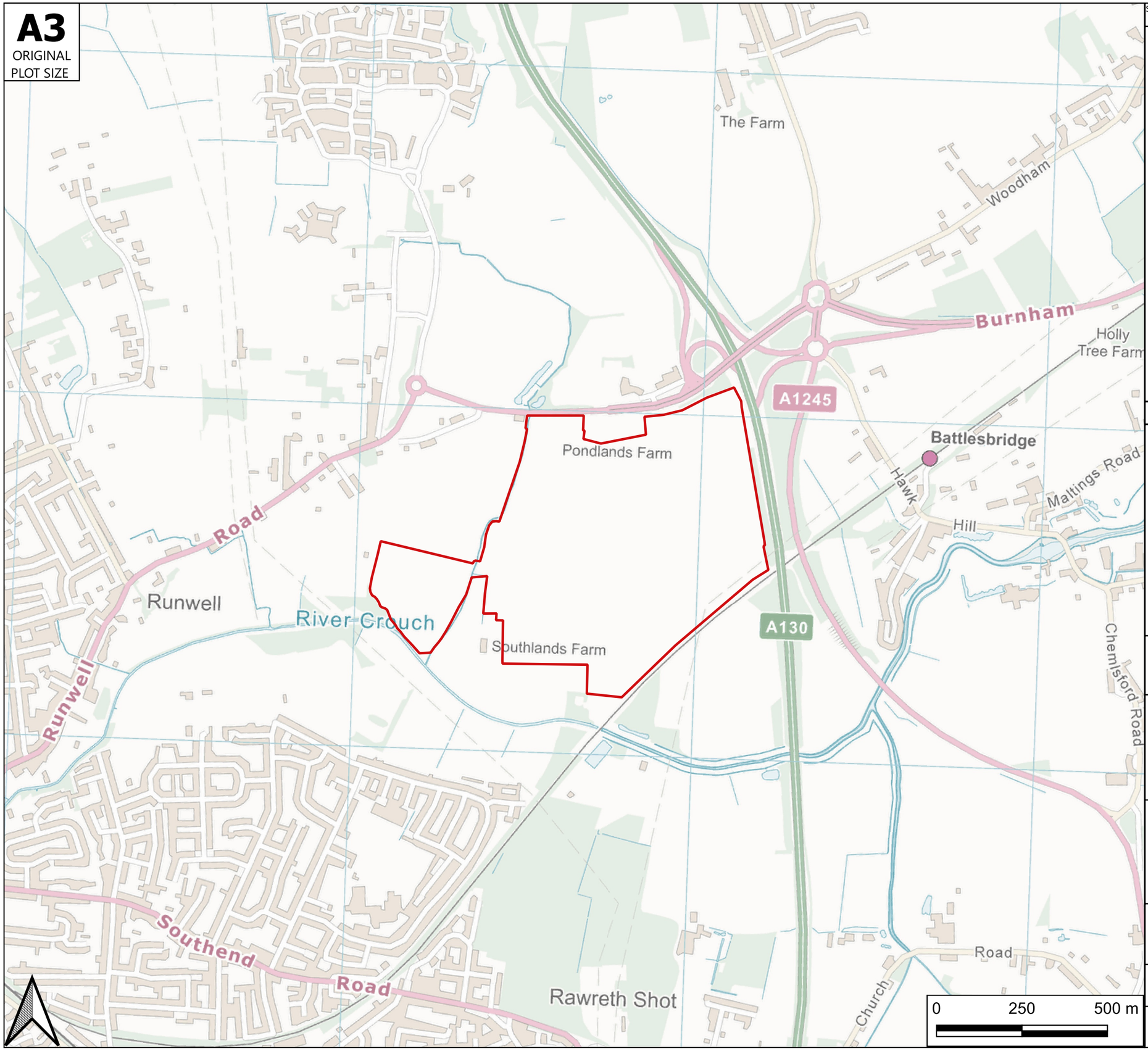
Community Engagement

(xiii) The details of the Construction Site Manager will be provided to Essex County Council in advance of any work being carried out.

(xiv) The Construction Site Managers details will also be provided on a Site-board at the Site access. If anyone in the local community has any issues during the construction phase, the Site Manager will be available to discuss.

Figures

A3
ORIGINAL
PLOT SIZE



Site Boundary is for indicative purposes only

Key

Site Boundary

Rev	Date	Details	Drawn by	Checked by	Approved by
A	10.10.12	Updated Red Line Boundary	SG	RR	JD

Bristol
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CLIENT:
Enso Green Holdings J Ltd

PROJECT:
Southlands Solar Farm

TITLE:
Site Location Plan

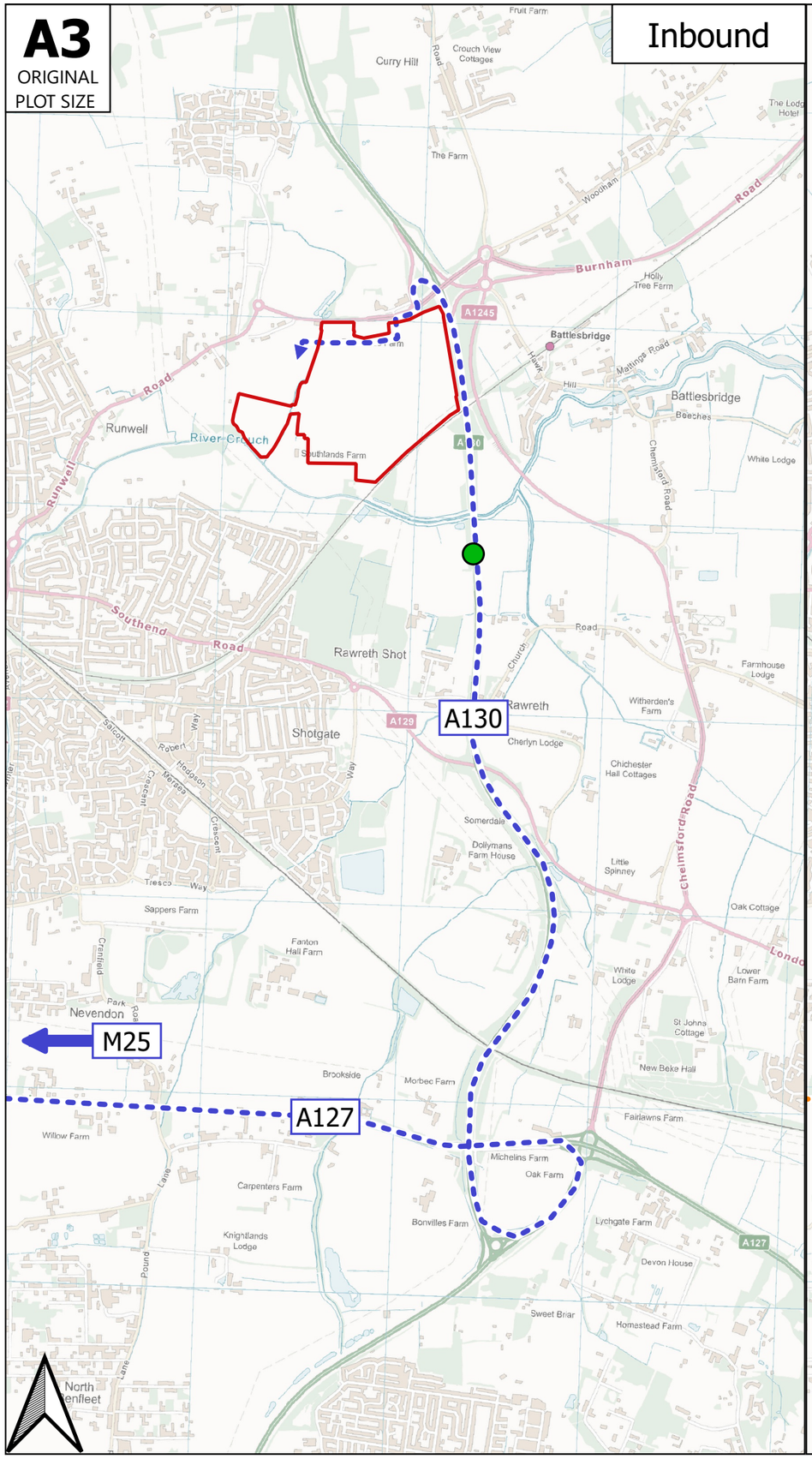
STATUS:
FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
NTS	31/08/22	AC	RR	JD

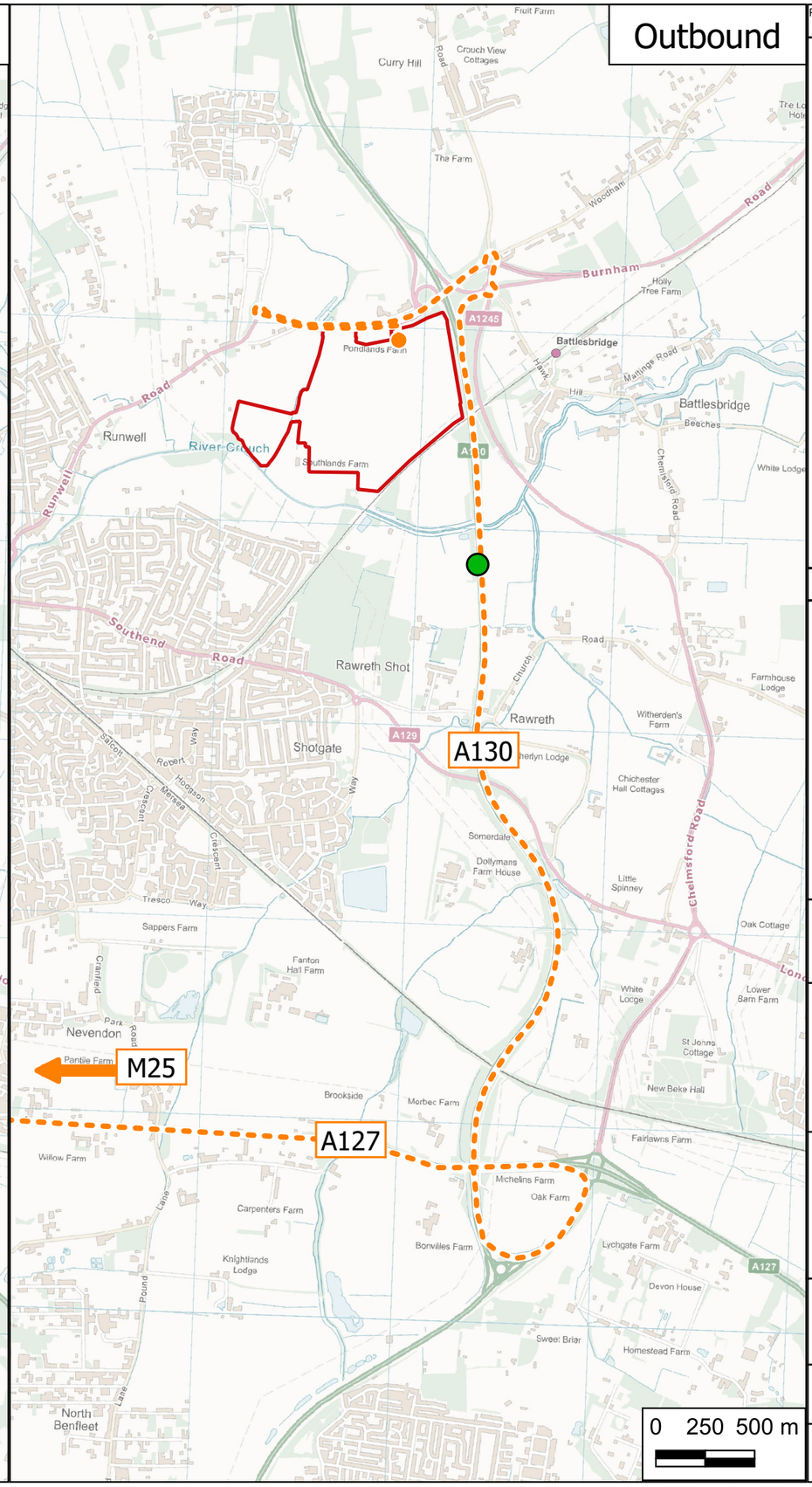
JOB NO:	DRAWING NO:	REVISION:
2201-018	Figure 1.1	A

A3
ORIGINAL
PLOT SIZE

Inbound



Outbound



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Key

- Site Boundary
- Construction Traffic Route
- Construct Traffic Route Outbound
- Layby

Rev	Date	Details	Drawn by	Checked by	Approved by
A	10.10.12	Updated Red Line Boundary, and inclusion of layby location	SG	RR	JD

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CLIENT:
Enso Green Holdings J Ltd

PROJECT:
Southlands Solar Farm

TITLE:
Construction Vehicle Route Plan

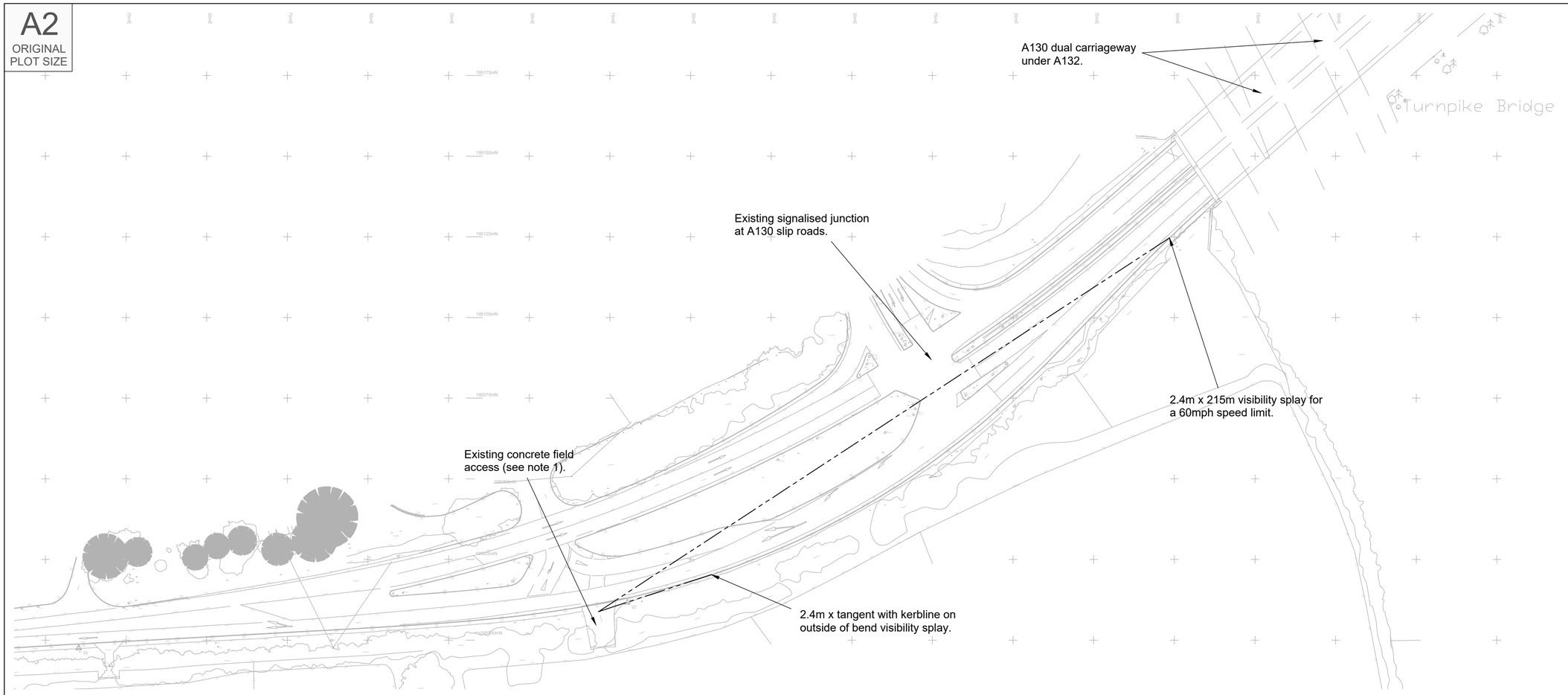
STATUS:
FOR INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
NTS	26/08/22	AC	RR	JD

JOB NO:	DRAWING NO:	REVISION:
2201-018	Figure 3.1	A

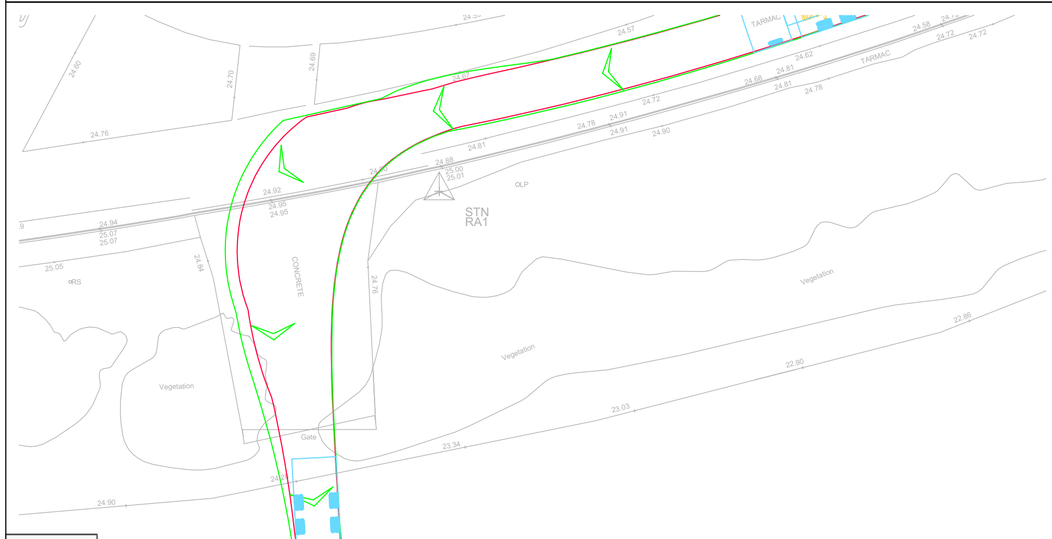
APPENDIX A

A2
ORIGINAL
PLOT SIZE



Existing Site Access Arrangement On A132 (Runwell Road)

Scale 1:1,000



16.5m Articulated HGV Turning Left Into Access

Scale 1:250

16.5m Articulated HGV Turning Left Out Of Access

Scale 1:250

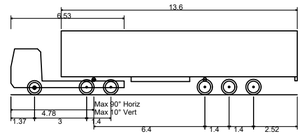
W E S

INDICATIVE

NOTES:

1. The access will operate as a left in/left out access only.

2. The existing posted speed limit is National Speed Limit.



Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev	Date	Details	Drawn by	Checked by	Approved by
A	30.08.22	Drawing updated with topographical survey. Visibility splays redrawn and vehicle swept paths rerun to suit.	PSW	RR	JD

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CLIENT:
ENSO GREEN HOLDINGS J LIMITED

PROJECT:
SOUTHLANDS SOLAR FARM

TITLE:
Proposed Site Access Arrangement On A132 At Existing Field Access

STATUS:
INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
As Shown	22.07.22	PSW	RR	JD

JOB NO:	DRAWING NO:	REVISION:
2201-018	SK01	A