

Little Crow Solar Park, Scunthorpe

ENVIRONMENTAL STATEMENT: TECHNICAL APPENDICES APPENDIX 9.2

OUTLINE CONSTRUCTION TRAFFIC MANAGEMENT PLAN

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INRG SOLAR (LITTLE CROW) LTD

In respect of

Little Crow Solar Park, Scunthorpe

Construction Traffic Management Plan



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A Works Details – Key Plan

1 INTRODUCTION

- 1.1 This Construction Traffic Management Plan (CTMP) has been prepared to address the transport elements associated with the construction of a renewable led energy scheme on land to the east of the British Steel site and to the west of the B1207, at Scunthorpe, North Lincolnshire, DN20 0BG. It describes the access and route arrangements that are proposed for the period of construction activities at the site.
- 1.2 The <u>Order Limits</u> comprises approximately 225 hectares of land located approximately 2.1 kilometres north of the village of Broughton. Junction 4 of the M180 is approximately 4.5 kilometres to the south.
- 1.3 The main element of the proposal is the construction, operation, maintenance and decommissioning of a ground mounted solar park with an intended design capacity of over 50MWp (megawatts peak) with associated development including a Battery Energy Storage System. The CTMP assumes that construction of the entire development will take place in a single phase. Further details of the proposal and the technology used together with the proposed site layout are included within the supporting documents, submitted separately as part of the DCO.
- 1.4 This CTMP has been produced further to a detailed site visit and sets out the proposed construction deliveries and mitigation measures for the route to the site.

Need for Secondary Consents

1.5 No traffic regulation orders, temporary traffic management, footway closures or parking suspensions are required as a result of the construction phase at the site.

Report Structure

- 1.6 This CTMP sets out the strategy for the following;
 - (i) construction traffic routing;
 - (ii) site access;
 - (iii) site compound and internal routing;
 - (iv) vehicle size, number and frequency; and
 - (v) proposed mitigation measures.
- 1.7 It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines as appropriate, in relation to construction and movement activities.

The site manager's details will be provided to the highway authority in advance of any work 1.8 being carried out.

2 SITE ACCESS

- 2.1 All construction vehicles will access the site via the existing farm access road from the B1207, as shown at Figure 2.1.
- 2.2 The width of the access junction where it meets the B1207 is approximately 17 metres and visibility splays of 2.4 x 215 metres can be achieved in both directions, as shown at Figure 2.1.
- 2.3 All construction vehicles will enter and exit the site in a forward gear. Banksmen will not direct general traffic, but will indicate to heavy and large construction vehicles when it is appropriate for them to enter and leave the site. Priority will always be given to the background traffic on the adjacent highway network.
- 2.4 Temporary signage will be erected in the vicinity of the site 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 located outside of the junction visibility splays and will be in place for the duration of the construction phase.

3 CONSTRUCTION TRAFFIC ROUTING

- 3.1 The designated route for all traffic associated with the construction is illustrated on Figure 3.1. Visitors, delivery drivers and contractors will be advised of the agreed route in advance of driving to the site.
- 3.2 It is proposed that construction traffic will arrive from the M180 junction 4, the A15, the A18, the B1208 and B1207 to the site access.

Details of the Route

- From the M180 junction 4 vehicles will use the A15 northbound to the Briggate Lodge Roundabout and then travel east along the A18 towards Brigg.
- 3.4 From the A18, vehicles will turn left onto the B1208. The B1208 measures between approximately 5.5 and six metres wide. Vehicles will travel along the B1208 to the junction with the B1207 and then continue straight ahead into the site access.
- 3.5 The B1207 south of the site access, towards the village of Broughton is subject to a 7.5 tonne weight restriction, except for loading, as shown on **Figure 3.1**. As such, no Heavy Goods Vehicles (HGVs) will be permitted to travel through the village.
- 3.6 The roads leading to the site already serve HGVs associated with the Steel Works, which is accessible from Dawes Lane to the north of the site, and are therefore subject to use by large vehicles. The proposed construction traffic route is therefore considered to be suitable for use by the relatively low number of HGVs that will be associated with the construction period. The likelihood of background traffic being delayed significantly is low.

Management of Deliveries

- 3.7 Advisory signs will be provided along the construction traffic route, as shown on **Figure 3.2** with the exact positions to be agreed with North Lincolnshire Council (NLC) officers. The signs will be compliant with Chapter 8 of the Traffic Signs Manual, where applicable, and will be in place for the duration of the construction phase at the site.
- 3.8 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 and background traffic will always be given priority on the B1207.
- 3.9 No traffic regulation orders, temporary traffic management, footway closures or parking suspensions are required as a result of the construction phase at the site.

- 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 HGVs will be required to call ahead, either whilst stopped or using their hands-free. Drivers will be advised to stop at either the A18 eastbound or the A15 northbound layby areas located approximately 1.5 kilometres east of the roundabout junction between the A15 and the A18 and 250 metres north of Junction 4 of the M180 respectively. This will allow enough time for banksmen to prepare at the site access. Similarly, when the HGVs are egressing the site, the driver will notify the Site Manager in order to allow banksmen to prepare to assist with existing vehicles.
- 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 they reach the A18 layby;
- The banksmen are mobilised and will go to position at the site access;
- Driver will be informed the operators are in place and it is appropriate to travel to the site via the agreed route;
- Each of the operatives will have a 'walkie-talkie' and will be able to communicate with each other, the site manager and the HGV drivers, as necessary;
- Banksmen will assist HGVs to manoeuvre at the site access junction, but will not direct general traffic.
- 3.12 The contractor will employ qualified banksmen who are experienced at traffic management.
- 3.13 The following procedure will be initiated when HGVs are leaving the site:

Procedure for Leaving the Site

- Before drivers depart the site the site manager will be notified. They will then mobilise the banksmen at the site access;
- Drivers will be advised when the banksmen and operatives are in place and will leave the site:
- Banksmen will guide the drivers exiting the site access.

Summary

- 3.14 The proposed construction traffic route is considered to provide a direct route from the highway network to the site. It is of a consistent width and considered appropriate to accommodate HGV traffic associated with the construction phase, as set out in **Chapter 5**.
- 3.15 The route is currently also used by HGV traffic generated by the local Steel Works and therefore is suitable for traffic generated during the construction phase of the development.
- 3.16 The use of any other roads other than the designated and signposted route shall not be permitted and this shall be enforced through the agreement of the CTMP.

3.17 Appropriate mitigation measures will be provided throughout the construction phase in order to manage the arrival and departures of HGVs are the site, as set out further in Chapter 6.

4 SITE COMPOUND AND INTERNAL ROUTING

Contractor's Compound

- 4.1 A contractor's compound is proposed to be located at the end of the access track where all vehicles will be able to turn. All construction vehicles will therefore enter and exit the site in forward gear. The location of the construction compound is shown on the Works Details Whole Site Plan (Document Ref 2.10 LC DRW), included at **Appendix A**.
- 4.2 The Compound will include for up to 50 parking spaces for construction workers and visitors as well as a staff office, storage and staff welfare facilities.
- 4.3 No parking by contractors, visitors or delivery vehicles will be permitted on the B1207 or the access track 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 up to four times per day.
- 4.4 The construction works will be wholly contained within the site and as such no diversion of pedestrian routes, parking suspensions or closure of lanes are required. Vehicle passing bays will be provided.

Internal Roads

- 4.5 The solar farm layout will include permanent four metre wide access tracks throughout the site allowing for the movement of construction and maintenance vehicles.
- 4.6 It is proposed that these access tracks are completed during the initial stages of construction so temporary haul routes are not necessary.
- 4.7 The tracks will provide ground protection and enable it to support the loading of HGVs and plant and reduce the propensity of debris being taken on to the adjacent access track and highway. Internal access tracks will be constructed of graded stone on top of permeable matting.
- 4.8 If ground conditions dictate, wheel washing facilities will be provided at a contractor's compound, or at the end of the access track, to ensure no mud is taken onto the local highway network and a road sweeper will be deployed by the applicant, should this become necessary.
- 4.9 Wheel wash facilities will be provided in the form of a portable automated high pressure washer with motion sensors to conserve water. All construction vehicles will therefore have to exit through the wheel wash area and as such will reduce the spread of mud and dirt onto the local highway network.

5 VEHICLE TRIP ATTRACTION

Construction Phase

- The applicant has advised that the construction period will take approximately 11 months (up to 47 weeks). Construction activities will be carried out Monday to Friday 07:00-18:00 and between 08:00 and 13:30 on Saturdays. Where possible, construction deliveries will be coordinated to avoid HGV movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00).
- 5.2 The construction phase for the solar farm includes the preparation of the site, installing the access tracks, erection of security fencing, assembly and erection of the PV strings, installation of the inverters/transformers and grid connection.
- 5.3 The construction of the battery energy storage system will include the preparation of the site, installation of the access roads, erection of security fencing, assembly of the battery system, and installation of the switch room and grid connection.
- 5.4 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. It should be noted that unlike wind farms, the construction of a solar park and battery energy storage system does not require equipment to be delivered by abnormal loads (i.e. vehicles over 16.5m in length).
- 5.5 Deliveries to the site shall be reported to the site manager and will be made on the smallest possible vehicles for that particular item of plant or material, to ensure that vehicles can manoeuvre safely.

Solar Park

- 5.6 The components which are required to construct the solar Park will arrive in 40ft containers by 15.4m long articulated vehicles. The candidate PV design includes 356,670 modules. Based on experience elsewhere, the applicant has confirmed that around 1,903 deliveries will be required. Assuming all deliveries arrive within a 47 week period on Monday to Saturday, this equates to, on average, around seven deliveries (14 movements) per day by the largest vehicle for this component of the construction.
- 5.7 Inverter stations will be delivered to the site through the construction period. These are likely to be up to 11m in length. The proposed solar farm will have a total of 48 inverters. It is assumed that the inverters will be transported individually due to their weight and as such this would equate to a total of 48 deliveries.
- 5.8 In addition, the substation buildings will be brick built to house the switchgear to facilitate the connection of the solar farm to the underground grid connection cable which forms part of the

distribution network. The internal equipment housed within the substation buildings will be delivered on 3No. 10m rigid lorries. The majority of the external equipment located within the 132kV substation compound will be delivered on 6No. 10m rigid lorries with the exception being the 132kV transformer unit which will be delivered on a 15.4m articulated vehicle.

- 5.9 It is likely that the material required for the access tracks will arrive by 10m rigid vehicles. The precise number will depend on the type and the amount of material required, but for the purpose of this assessment we have assumed that one delivery is required per five acres, resulting in a total of 104 deliveries.
- 5.10 A number of front end JCBs will also be required to transport equipment around the site, and to distribute stone as necessary. This is a similar size to a tractor and will either be transported to the site or be driven to the site.
- 5.11 A maximum of between 80 and 100 construction workers are anticipated to be on site during peak times during the construction period. A temporary construction compound will be provided and will provide storage, parking for contractors and turning for HGVs.
- 5.12 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.
- 5.13 In summary, the following heavy goods movements could be associated with the construction period of the solar farm, as set out in **Table 5.1**.

Table 5.1 Heavy Goods Vehicle Movements – Construction Period

Activity	Type of Vehicle	Total Number of Deliveries 1,903 (3,806 two-way movements)	
Solar Modules & Mounting Structures	15.4m Articulated		
Inverters	11m Rigid	48 (96 two-way movements)	
DNO Substation and Buildings	10m Rigid and 15.4m Articulated	10 (20 two-way movements)	
Access Tracks	10m Rigid	104 (208 two-way movements)	
General	Front End JCB by low loader	4 (8 two-way movements)	
	TOTAL	2,069 deliveries (average of 8 deliveries per day or 16 two way movements per day)*	
	5% Buffer	2,172 deliveries (average of 8 deliveries per day or 16 two way movements per day)*	

5.14 **Table 5.1** confirms that a maximum of **2,069** deliveries (**4,138** two-way movements) could be made by HGVs associated with the construction of the solar farm, at an average of around **eight** deliveries, or **16** two-way movements per day. If a 5% buffer is added to traffic flows to

represent a worst case, the number of deliveries will still be approximately eight per day (16 two-way movements).

- In addition to the HGV movements identified in **Table 5.1**, there will also be a small number of construction movements associated with smaller vehicles such as the collection of skips for waste management and the transportation of construction workers and sub-contractors. It is likely that that there could be up to 10-14 LGV movements per day. This includes minibuses transporting construction workers.
- 5.16 As stated and where possible, construction deliveries will be coordinated to avoid HGV 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 (07:00-19:00), construction worker travel will occur outside of the peak hours.

Battery Energy Storage System

- 5.17 Components which are required to construct the battery energy storage system will arrive in 40ft and 53ft containers. The storage containers will arrive by 16.5m long articulated vehicles. It is forecast that there will be a total of 18 deliveries of these containers with 16 No. 53ft containers and 2 No. 40ft containers.
- 5.18 Each of the battery energy storage containers will also require two Transformer and Inverter units measuring up to 6.1m x 2.4m each. Two units will therefore arrive per battery storage container. The Transformer and Inverter units could be delivered in pairs on a 16.5m long articulated vehicles or separately on a 10m long rigid vehicle.
- 5.19 In summary, it is proposed that the following heavy goods vehicle movements could be associated with the construction phase of the development 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 Energy Storage Containers (up to 90 MW)	16.5m Articulated	18 (36 two-way movements)	
General Deliveries (cables, fencing, TRADO/Inverters etc.)	16.5m Articulated or 10m Rigid 65 (130 two-way movement		
Contractor's Compound	16.5m Articulated	10 (20 two-way movements)	
Total	93 deliveries (average of less than one delivery per day or up to two two-way movements)		
* Based upon a 47 week construction phase i.e. 282 days			

Operational Phase

There are anticipated to be around four visits to the site a year (one per quarter) for additional equipment maintenance. These would typically be made by light van or 4x4 type vehicles. Whilst the contractor's compound will have been removed, space will remain within the site on the access tracks for such a vehicle to turn around to ensure that reversing will not occur onto the highway

Summary

5.21 Based on the above, it is expected that there will be around eight HGVs accessing the site (16 movements) per day over the 47-week period when deliveries will occur. There will also be construction workers arriving at the site first thing in the morning and departing in the evening, although the numbers involved are forecast to be relatively low on a day-to-day basis. The level of traffic during the temporary construction phase is not considered to be material and it is considered that this will not have an impact on the safety or operation of the local highway network.

6 PROPOSED MITIGATION MEASURES

- 6.1 The Construction Company will introduce measures to minimise the impact resulting from construction activities. These will be managed by the Project Manager and Site Supervisor.
- 6.2 The Site Manager will assume responsibility for the operation of the site. The details of the Site Manager will be provided to the highway authority in advance of any works being carried out:
- 6.3 Mitigation measures will include:
 - (i) signs to direct construction vehicles associated with the development will be installed along the 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.
 - advisory signs informing contractors and visitors that parking is not permitted on-(ii) street on the B1207 or on the site access track.
 - (iii) all signage and barriers on the agreed haulage route will be inspected twice daily by the site manager (once in the morning and once at lunchtime), to ensure they are kept in a well maintained condition and located in safe and appropriate locations.
 - (iv) a compound area for contractors will be set up on-site including appropriate parking spaces. 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.
 - a wheel wash will provided which hoses down vehicles so that no construction (v) vehicles exiting the site compound will take mud or debris onto the local highway network.
 - (vi) a road sweeper will be provided for surrounding local roads along the construction traffic route to alleviate any residual debris generated during the construction phase.
 - the site will be secured at all times with Heras fencing. (vii)
 - (viii) a requirement for engines to be switched off on-site when not in use.
 - (ix) spraying of areas with water supplied as and when conditions dictate to prevent dust.
 - (x) vehicles carrying waste material off-site to be sheeted.
 - turning areas will be provided to ensure vehicles can exit the site in a forward gear. (xi)
 - (xii) 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; and
 - all residents of Brigg Road, along the construction traffic route, will be provided with (xiii) contact details of the Site Manager, which will also be provided on a site-board at the entrance to the site.

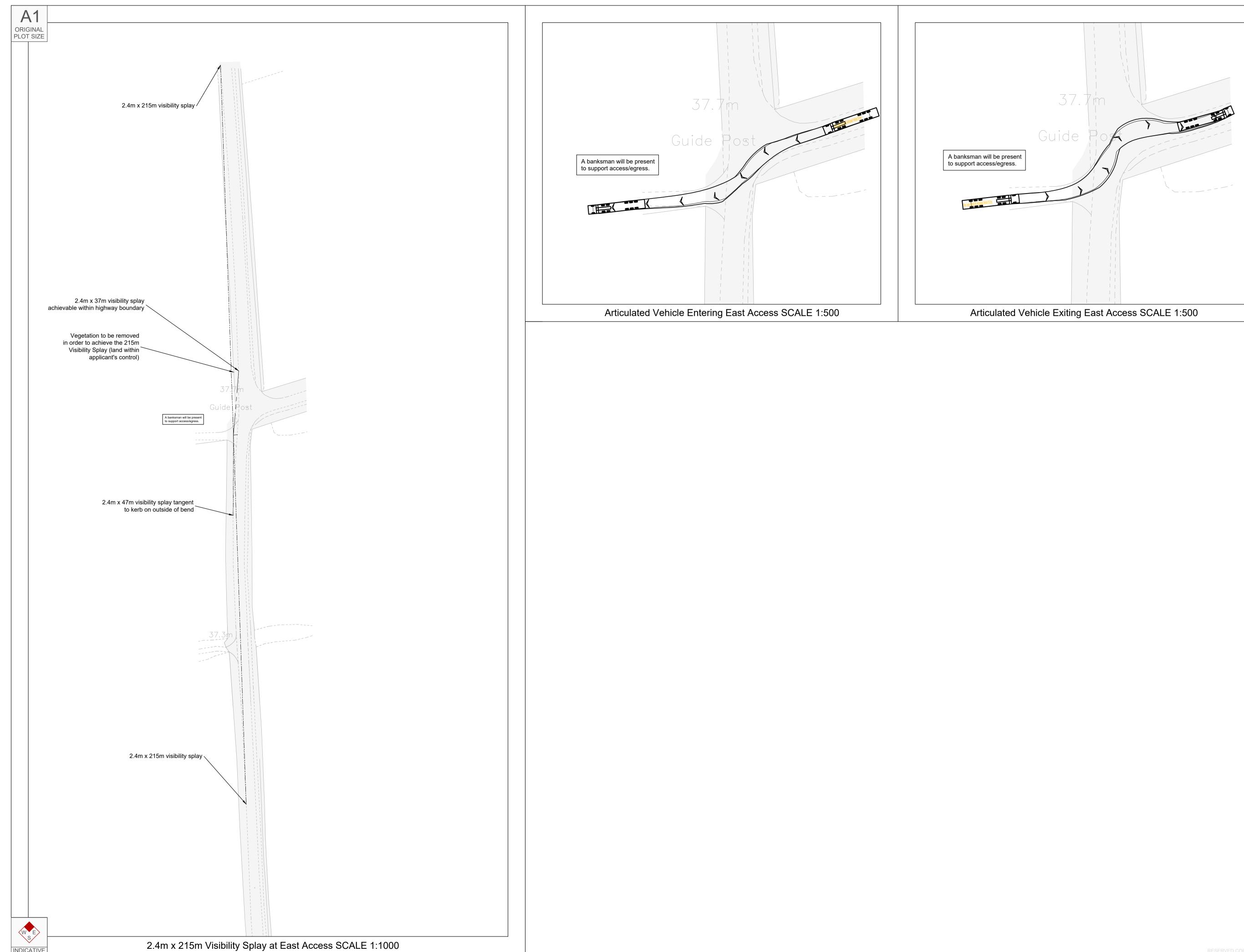
Mitigation in Local Villages

- 6.4 In addition to the above measure which will be provided on site and along the identified construction traffic route, mitigation measures are proposed along roads within local villages to reduce the impact of the construction phase on local residents and businesses.
- 6.5 These mitigation measures will be focussed on reducing existing vehicle speeds within the villages of Appleby, Broughton and Wressle.
- 6.6 These measure include:
 - (i) Installation of temporary Vehicle Activated Signs (VAS) at key locations in the area. The purpose of the VAS will be to increase driver awareness of their speeds and to seek to reduce the speeds of vehicles, particularly HGVs, in these locations.
 - (ii) No HGVs will be permitted to access the site via routes through the villages of Broughton or Appleby.
 - (iii) Newsletters will be delivered to local residents and a website will be made available to provide information on construction phases and events throughout the construction period
 - (iv) Broughton Primary School is located approximately one kilometre west of the B1208 Brigg Road. As such, much of the school's catchment area is located away from the proposed construction route. It is therefore not anticipated that construction traffic would conflict with daily school activities and routines. However, construction traffic activities will be arranged to avoid coinciding with the morning and afternoon school peak hours, where possible.

7 CONDITION SURVEYS

- 7.1 A pre-commencement Walk-Over condition survey on the local highway network will be carried out and agreed with highway officers at NLC, in order to assess the baseline condition of the adopted highway.
- 7.2 The extent of the survey will be agreed with highway officers and is anticipated to include the B1207 in the vicinity of the site access only. The wider road network, including the B1208, is already used by HGVs and as such any damage caused would not be able to be attributed to the construction of this site.
- 7.3 The survey will incorporate a photographic record as appropriate. This would be followed by a further condition survey with highway officers with a further photographic record covering the same extents at the end of construction activities, in order to identify and agree any remedial works reasonably attributable to construction activities.

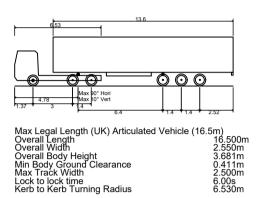
FIGURES



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1. The extend of adopted highway has been taken from a scale 1:5000 ordinance survey based highway plan received from North Lincolnshire Council on 10.08.17 and is only indicative.

Highway Boundary



Bristol Cambridge London Manchester Oxford Welwyn Garden City 25 King Street Bristol BS1 4PB 0117 925 9400

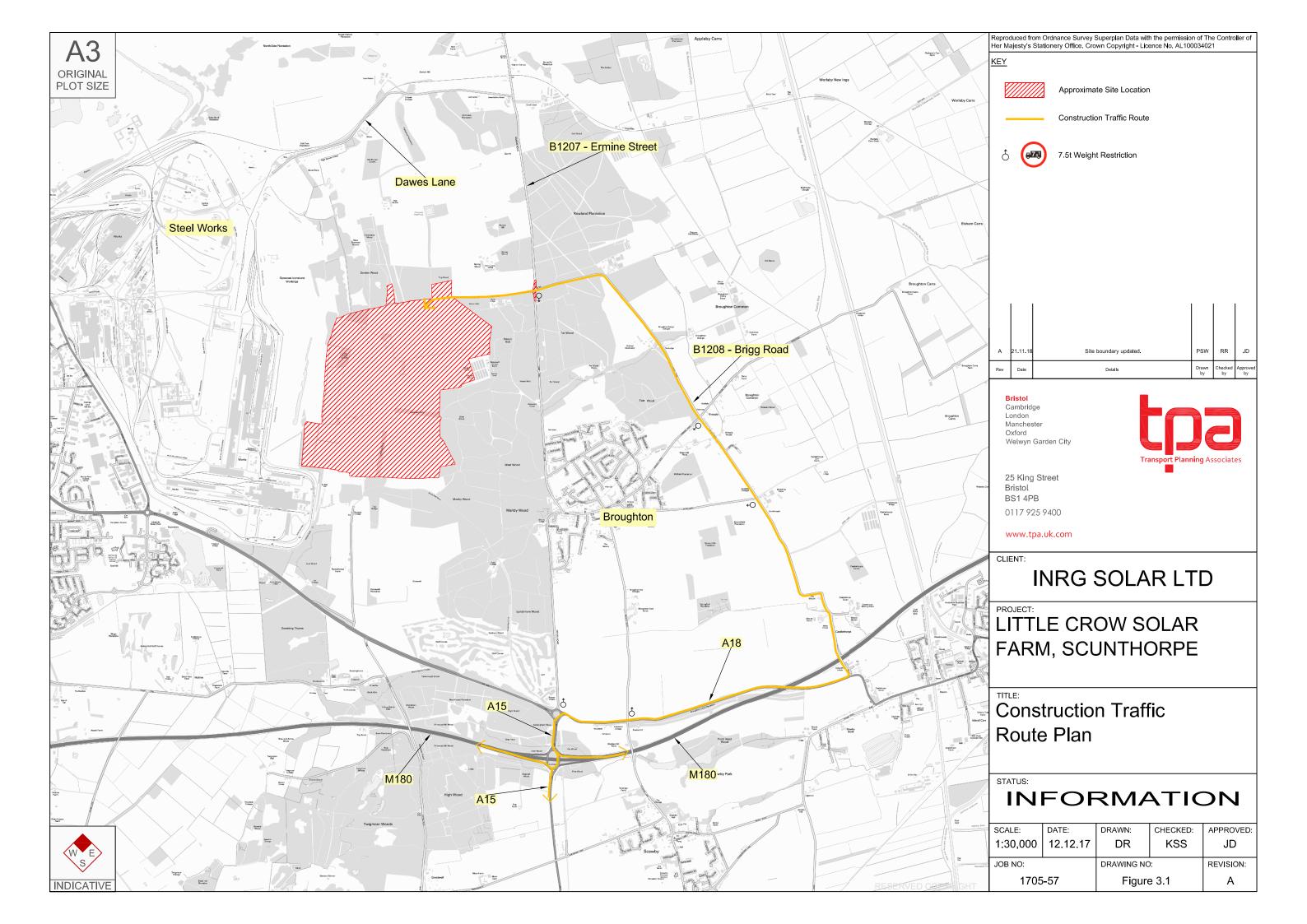
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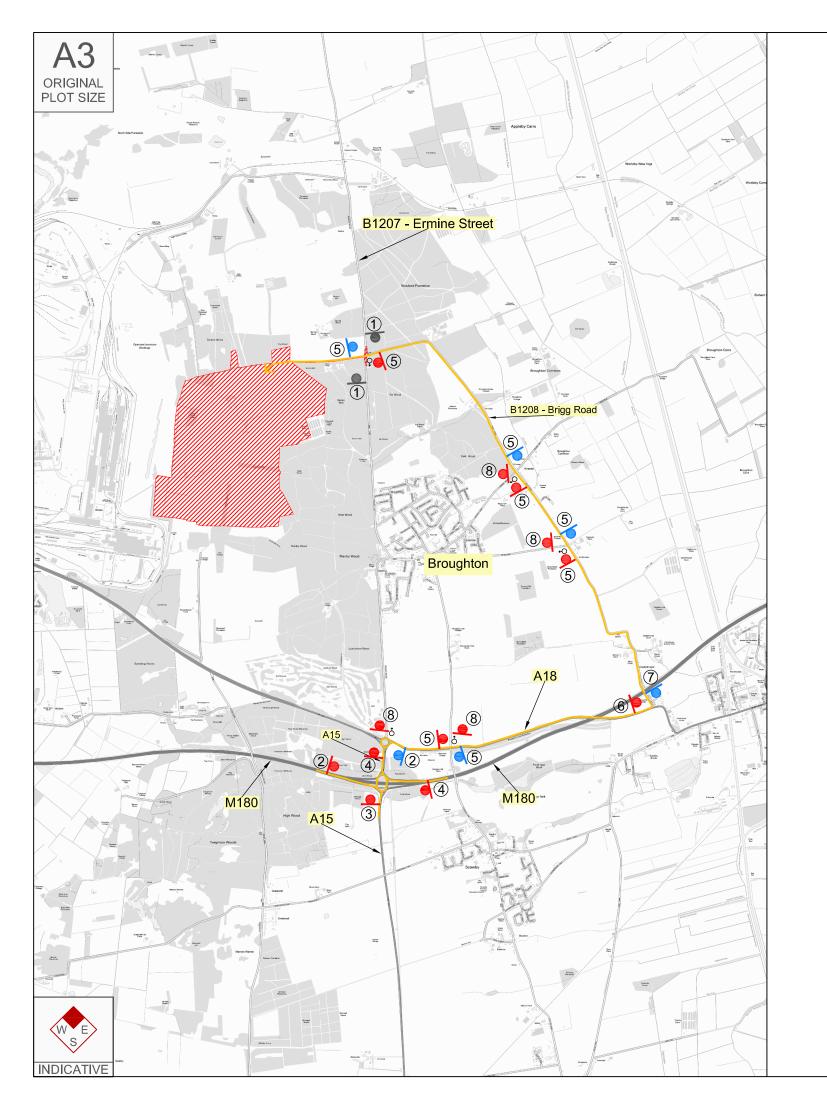
PROJECT: LITTLE CROW SOLAR FARM, SCUNTHORPE

Visibility Splay and Swept Path Analysis At Site Access

INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
As shown	12.12.17	DR	KSS	JD
JOB NO:		DRAWING NO:		REVISION:
1705-57		Figure 2.1		С





(1) = SIGN 1 (see note 1)

WORKS TRAFFIC LARGE VEHICLES TURNING

(2) =SIGN 2 (see note 2)



(3) =SIGN 3 (see note 2)



(4) =SIGN 4 (see note 2)



(5) =SIGN 5 (see note 2)



(6) =SIGN 6 (see note 2)



(7) = SIGN 7 (see note 2)

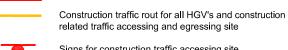


(8) = SIGN 8 (see note 1)

NO ACCESS TO SOLAR PARK

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- 1. The diagram 7301 'WORKS TRAFFIC' in the Traffic Signs Regulations Directions (TSRGD)
- 2. The diagram 2701.1 'Oak Farm Estate' in the Traffic Signs Regulations and General Directions (TSRGD)



Approximate Site Location



Signs for construction traffic accessing site



Signs for construction traffic egressing site



Signs for general traffic 7.5t Weight Restriction



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LITTLE CROW SOLAR PARK, SCUNTHORPE

Proposed Signage For Construction Route

INFORMATION

SCALE:	DATE:	DRAWN:	CHECKED:	APPROVED:
1:40,000	12.12.17	DR	KSS	JD
JOB NO:		DRAWING NO:		REVISION:
1705-57		Figure 3.2		В

APPENDIX A

