

PROPOSED BATTERY STORAGE AND SOLAR FARM
LAND OFF ING ROAD, BICKER, LINCOLNSHIRE

Transport Statement

Prepared on behalf of:

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ANALYSIS – OPERATIONAL PHASE)**

1.0 INTRODUCTION

1.1 Purpose of This Report

- 1.1.1 AXIS have been appointed by AGR Group (hereafter referred to as 'the applicant') to provide highways and transport advice to accompany a planning application for a battery storage and solar farm, including grid connection and associated infrastructure on land to the west of Bicker and the north of Donington, Lincolnshire.
- 1.1.2 The purpose of this report is to inform the relevant Local Planning Authorities (LPA's), Boston Borough Council (BBC), South Holland District Council (SHDC), and the Local Highway Authority (LHA) Lincolnshire County Council (LCC), of the anticipated highways and transportation matters associated with the proposed scheme.
- 1.1.3 The proposed development would be partially located within Boston, and partly within South Holland. As such, this report has been submitted separately to the two LHA's which govern these areas BBC and SHDC.

1.2 Pre-Application Discussions

- 1.2.1 Screening letters were issued to BBC and SHDC on the 2nd and 3rd September respectively
- 1.2.2 In respect to Transportation / Access the response from BBC was as follows:
- The peak use of the highway would result from the construction stage,
 - Given the size of the site the impact would be spread between a number of routes leading from the main highway,
 - Through careful management the volume and type of vehicles would dissipate over a large area to coincide with the phasing,
 - There will be an inevitable rise in highway use during the construction, but this would decrease during the operational period, and would not be significantly different to the flow of agricultural vehicles associated with the current land use,
 - The full impact of the traffic generation associated with the development is likely to be absorbed into the existing road network, and
 - It is considered that the highway implications would not warrant an EIA.
- 1.2.3 The response from SHDC was that following assessment under the Town and Country (Environmental Impact Assessment) Regulations 2017, and from the

information submitted it is not considered that any impacts that may occur would be as significant as to require an Environmental Impact Assessment to be undertaken.

- 1.2.4 In summary the proposals are considered by SHDC as being fully reversible and being able to return to agricultural use in the future.
- 1.2.5 LCC Highway submitted a response in parallel with that received from SHDC which identified that the proposed solar farm would be acceptable in highway terms, should agreement be reached from National Grid, (the owners of the Wind Farm haul road leading to Ing Drove), to use this to access Cowbridge Road from the A52 Donnington Road. At the time of works being undertaken to the National Grid Bicker Fen sub-station (Adjacent to the Wind Farm) improvement works were also undertake to Ing Drove and Cowbridge Road. Whilst these works have rendered Cowbridge Drove almost back to pre-commencement standards it is nevertheless wide enough for two-way vehicle movements.
- 1.2.6 LCC concluded that the proposed Solar Farm is considered to be acceptable in highway terms however a dilapidation survey would need to be undertaken along Ing Drove and Cowbridge Road to establish their pre-commencement condition and a commitment to maintain and restore those roads to their pre-commencement condition both during and after the construction phase.
- 1.2.7 As an alternative option, LCC considered that the private access road from the A52 Donington by-pass that has been constructed to facilitate the Viking Link project might be used to access the site. However, the applicant has not been able to secure an agreement to use this route and all access will be from an entrance off Cowbridge Road, with a crossing of Hammond beck included in the application.
- 1.2.8 This Transport Statement (TS) has therefore been prepared in accordance with the EIA consultation response comments received from BBC, SHDC and LCC, as well as National Planning Policy Guidance (NPPG).

1.3 Report Structure

- 1.3.1 Following this introductory section, the structure of this TS is as follows:
- **Chapter 2** describes the existing conditions on and around the site, including reference to the local highway network, and a review of the accident record,

- **Chapter 3** sets out the development proposals, including a description of the site access arrangements,
- **Chapter 4** sets out the anticipated trip generating potential of the scheme on the local highway network, and
- **Chapter 5** provides the summary and conclusions.

2.0 EXISTING CONDITIONS

2.1 Introduction

2.1.1 This section of the TS describes the existing conditions on and around the development site, focussing on the site location, its existing use, access arrangements and the local highway network including its accident record.

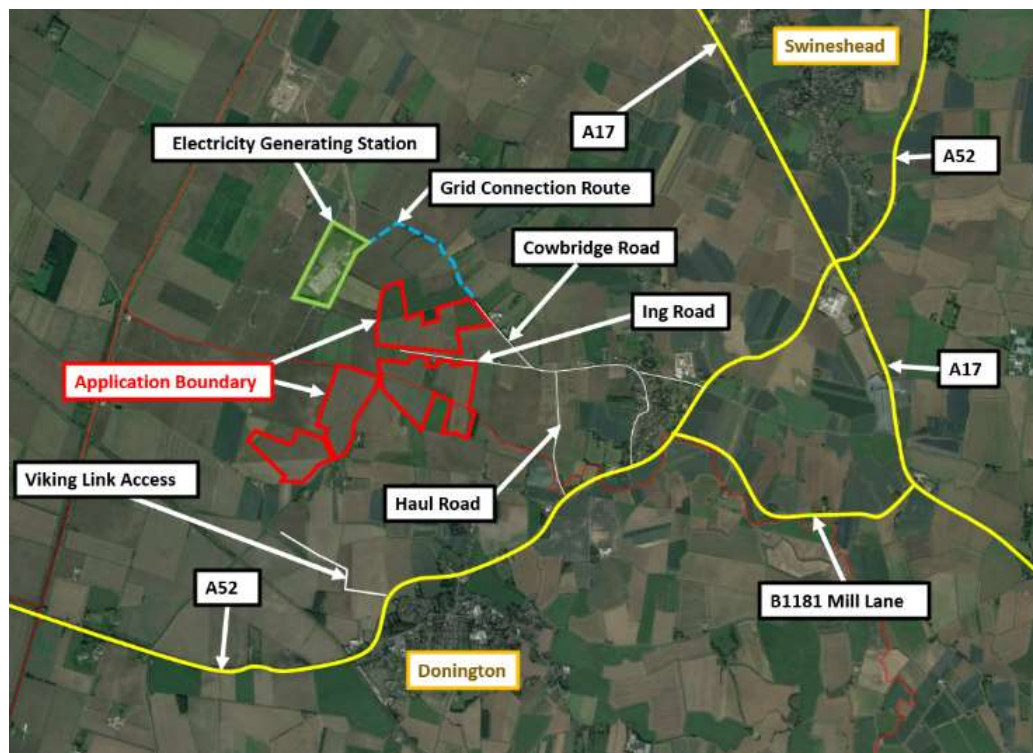
2.2 Site Location and Existing Use

2.2.1 The application site is located approximately 1.5km to the west of Bicker village, and approximately 1.5km north of Donington Village in South Holland, Lincolnshire.

2.2.2 The site is circa 92 hectares (ha) in size and comprises four parcels of land, located to the north and south of Ing Road and to the north-east and south-west of Middle Fen Drove. All parcels of land currently comprise a number of arable fields, which are sub-divided by ditches and broken hedgerows.

2.2.3 The location of the site is shown on **Plan 2.1**.

Plan 2.1 – Site Location



2.3 Existing Access Arrangements

- 2.3.1 The site is located in the middle of an agricultural area and agricultural access into each parcel of land is available directly from Ing Road, North Fen Drove, Cowbridge Road, Middle Fen Drove and North Ing Drove. It is proposed that these accesses will ultimately be utilised to serve as the vehicular accesses to the solar farm.
- 2.3.2 Access to the Site would be provided from the A52 via the National Grid haul road to Ing Drove and Cowbridge Road

2.4 Local Highway Network

Ing Drove / Cowbridge Road

- 2.4.1 Ing Drove links to Ing Road and Cowbridge Road. Ing Drove is a predominantly single-track rural road which runs in a roughly east / west alignment in the vicinity of the site. The road runs west from the settlement of Bicker Bar for approximately 700m as far as the Ing Road / Cowbridge Road / Ing Drove priority-controlled junction, although construction traffic would only use Ing Drove for a distance of approximately 230m as far as the National Grid Haul Road.
- 2.4.2 At the Ing Road / Cowbridge Road / Ing Drove junction, Ing Drove bends to the north-west and the road name becomes Cowbridge Road. Construction traffic would continue north along Cowbridge Road for approximately 730m as far as the site access junction.
- 2.4.3 In the vicinity of the site Ing Drove and Cowbridge Road feature a circa 4.0m carriageway width and are subject to the national speed limit (60mph).
- 2.4.4 The western arm of the Ing Road / Cowbridge Road / Ing Drove junction is formed by Ing Road. Ing Road would not be used for construction access.

National Grid Haul Road

- 2.4.5 The Haul Road off the A52 Bicker Road was built to provide access to the wind farm owned by National Grid.
- 2.4.6 A priority intersection is formed between the Haul Road and the A52 Bicker Road. Tapers are provided at the priority junction providing visibility splays of approximately 9m by 90m in either direction.

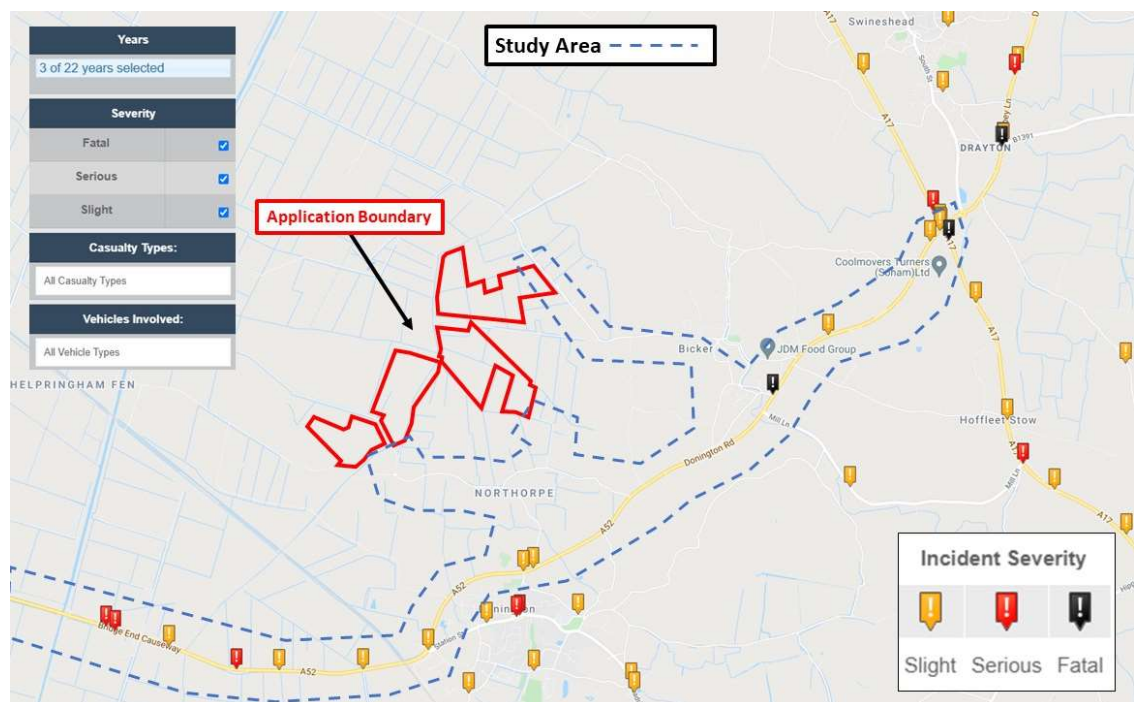
2.4.7 The carriageway narrows to a width of approximately 4.6m with passing places every 100-190m.

2.4.8 Where the Haul Road reaches Ing Drove, a priority junction is formed, providing visibility splays of approximately 5m by 50m-70m in either direction.

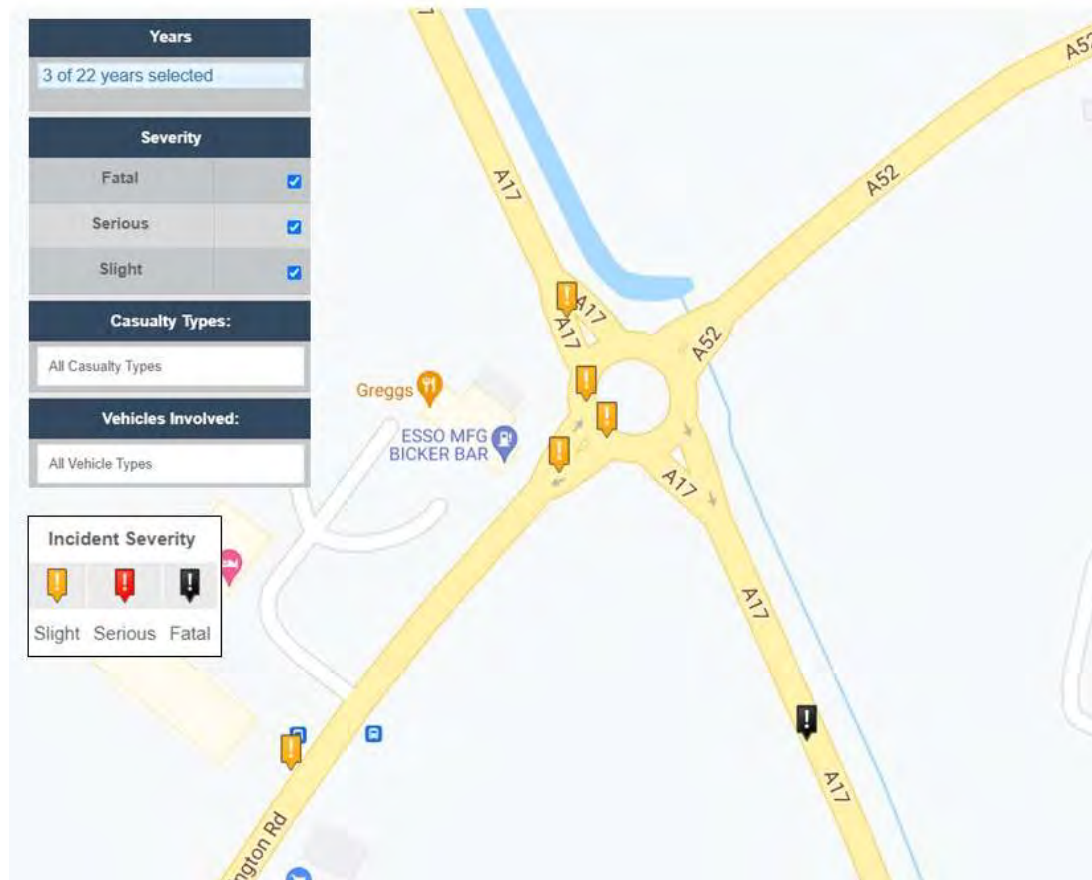
2.5 Highway Safety

2.5.1 Personal Injury Accident (PIA) data for the highway network adjacent to the site has been obtained from the online CrashMap resource (www.crashmap.co.uk). Data was extracted for the most recently available three-year period which is from 2017 to 2019 inclusive. The location and severity of the accidents are shown on **Plan 2.2**. The accident record of the nearby A17 / A52 roundabout is shown in a more local context on **Plan 2.3**.

Plan 2.2 – Personal Injury Accident (PIA) Search (Local Access to A52 & A17)



Plan 2.3 - Personal Injury Accident (PIA) Search (A17 / A52 roundabout)



2.5.2 No accidents occurred in the vicinity of the site. Those accidents identified, during the 3-year period of analysis, only took place upon the strategic highways network.

2.5.3 **Plan 2.2** illustrates that 17 accidents occurred on the A52 within the general vicinity of the site, 12 of which resulted in 'slight' injury, 3 of which resulted in 'serious' injury and 2 of which resulted in 'fatal' injury. When considered volumetrically this equates to approximately 6 accidents per year on average.

2.5.4 The circumstances surrounding the fatal accidents that occurred have been examined in greater detail.

A17 South-East of the A17 / A52 Roundabout

2.5.5 Local press reports of the accident indicate that the accident involved an elderly couple who collided with a HGV. The coroner reported that the car was being driven erratically before the fatal crash.

- 2.5.6 It is therefore considered that the crash was most likely the result of driver error and not the result of any pre-existing conditions on the A17 / A52 in this location.

Donington Road (A52)

- 2.5.7 Local press reports of the accident indicate that the accident involved a lorry which collided with a vehicle waiting to turn, and subsequently veered into the opposing lane, colliding with another approaching vehicle. A court case following the fatal accident found that the lorry driver was responsible due to careless driving.
- 2.5.8 It is therefore considered that the crash was the unfortunate result of a driver error and not the result of any pre-existing conditions or the geometry of Donington Road at this location.
- 2.5.9 With regards to the above, although it is regrettable that fatal accidents occur, this is not a result of the geometry or layout of the surrounding strategic road network. A review of the road geometries does not reveal anything which suggests any obvious departures from standards or poor visibility.
- 2.5.10 Notwithstanding the fatal accidents, the accident record is not considered to be unusually onerous, especially given the large size of the study area and that the A52 carries in the region of 6,000+ two-way movements per day (source: DfT traffic counts) at this location. Therefore, it is considered that the existing accident record does not present a material concern in the context of the proposed development.
- 2.5.11 The accident record within the vicinity of the application site does not therefore represent a cause for concern in the context of the proposed development.

2.6 Baseline Traffic Data

A52

- 2.6.1 Manual count point (MCP) data has been obtained, along the A52 trunk road in the vicinity of the site, from Department for Transport (DfT) road traffic statistics.
- 2.6.2 DfT site number 46559 is located to the east of Donington, approximately 2km from the existing National Grid Haul Road access.
- 2.6.3 The following table presents the data obtained from the DfT count point:

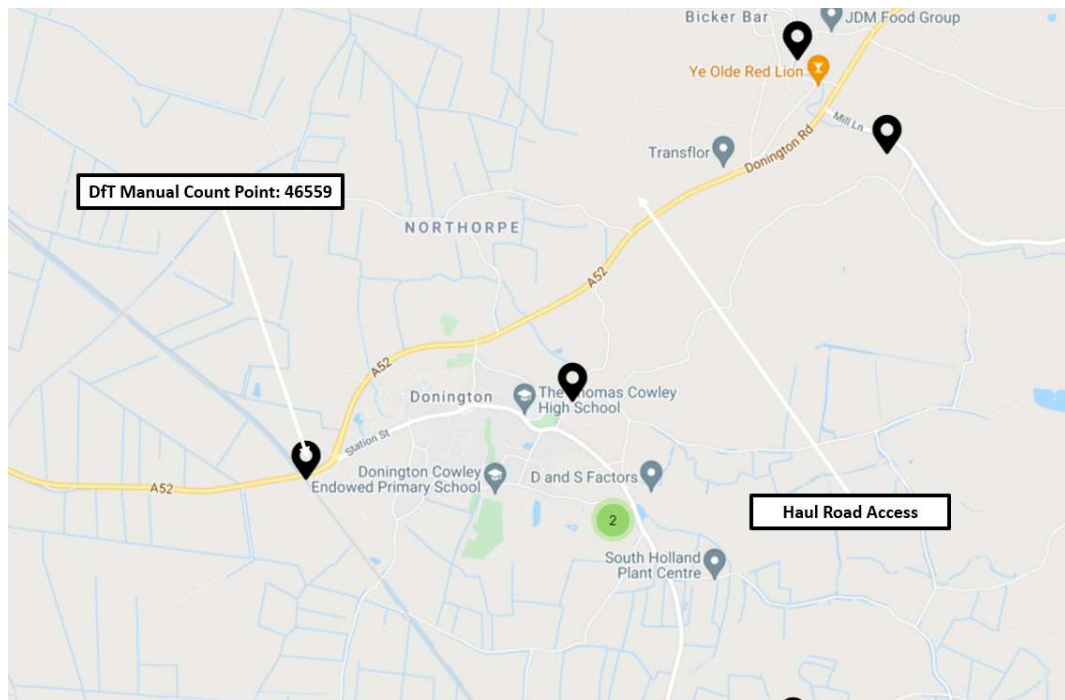
Table 2.1 – Annual Average Daily Traffic Flow (Source DfT site no: 46559)

Year	Count Method	Pedal Cycles	Two-wheeled Motor Vehicles	Cars & Taxis	Buses & Coaches	Light Goods Vehicles	Heavy Goods Vehicles	All motor vehicles*
2020	Estimated using previous year's AADF on this link	2	80	3559	4	981	519	5143
2019	Estimated using previous year's AADF on this link	2	108	4873	7	1146	578	6712
2018	Manual Count	2	101	4863	7	1150	575	6695

*Total number of vehicles both directions

2.6.4 The following plan presents the location of the MCP:

Plan 2.4 – Location of MCP 46559



2.6.5 Review of the data summarised in **Table 2.1** shows that, during 2018 the total number of two-way vehicles movements (all vehicles) totalled 6695, 4863 of which were cars and taxis, with 575 being Heavy Goods Vehicles (HGVs). The 2020 estimate shows a reduction in respective vehicle numbers which is considered consistent with reduced levels of travelling due to the Covid-19 pandemic.

3.0 PROPOSED DEVELOPMENT

3.1 General

3.1.1 The full planning application is for the development of a solar and battery storage farm with associated infrastructure including:

- Photovoltaic (PV) solar panels (up to 3m high) and associated support frames and cabling,
- Inverter & Transformer Stations,
- Battery Storage Containers,
- Control Building,
- Switchgear Building,
- Storage buildings,
- Access tracks,
- Security fencing,
- CCTV security cameras & supports, and
- Cable connection to substation.

3.1.2 The site layout plan is contained in **Appendix A**.

3.1.3 The proposed development would be for a time limited period of 40 years after which time the site would be decommissioned and restored back to full agricultural use.

3.2 Site Access Arrangements

3.2.1 During the construction period, the site would be accessed from the existing National Grid Haul Road, located off the A52 Donington Road.

3.2.2 At the point where the Haul Road joins Ing Drove, delivery vehicles will turn left at the priority junction accessing the solar farm via a single access off Cowbridge Road. The proposed access route is presented in greater detail on **drawing number 2920-01-ATR01 (Appendix B)**.

- 3.2.3 The A52 Donington Road provides a route to the wider strategic highway network connecting to the A1 to the west. The proposed access route will also be used for maintenance requirements.

Forecast Trip Generation of the Proposed Development

- 3.2.4 The trips associated with the construction period would be limited and temporary in nature. Trips to the site once the solar panels are fully operational would be strictly limited to the occasional LGV associated with maintenance requirements and would be de minimis in nature (see **Section 4**).

Baseline Traffic Flows

- 3.2.5 Based on the scale and nature of the surrounding land uses adjacent to the National Grid Haul Road, Ing Drove, Ing Road and Cowbridge Road it is anticipated that these routes are relatively lightly trafficked.
- 3.2.6 As discussed previously within this report at Section 2.6 the A52 Donington Road has a two-way Annual Average Daily Traffic flow of approximately 5143 total vehicles (of which 519 would be HGVs).

Highway Safety

- 3.2.7 The safety record within the vicinity of the site is exemplary, considering that no accidents occurred in the vicinity of the site. Those accidents identified, during the 3-year period of analysis, took place upon the strategic highways network according to CrashMap (see Section 2.5 earlier within this report and accompanying **Plans 2.2** and **2.3**).
- 3.2.8 With regards to the above, the proposed access arrangements from the National Grid Haul Road, Ing Drove and Cowbridge Road are considered to be sufficient when set in the context of the nature of the local highway network and the development proposals.

3.3 Visibility Splays

- 3.3.1 The A52 Donington Road is subject to the National Speed Limit (60mph), and if a strict interpretation of CD 109 of the Design Manual for Roads and Bridges (DMRB) is adopted, the stopping sight distance and junction visibility requirement for roads with a design speed of 62mph (100kph) is 2.4m x 215m.

- 3.3.2 The proposed site access will utilise the existing National Grid Haul Road. This was constructed in accordance with the relevant design standards set out in DMRB with regard to visibility splays at both the junction with the A52 at the southern end of the haul road, and the junction with Ing Drove at the northern end.
- 3.3.3 **Drawing Number 2920-01-D01 (Appendix C)** demonstrates that visibility splays of 2.4m x 200m and 2.4m x 185m are achievable to the south-east and north-west, respectively, from the proposed main site access, at its junction with Cowbridge Road.
- 3.3.4 The available visibility to the south is in line with the relevant design guidance set out in the DMRB. The available visibility to the north-east does not quite meet the DMRB desirable minimum standard but does exceed the DMRB absolute minimum visibility of 152m for a 60mph road. Given that traffic generation at the application site during the operational phase will equate to approximately 1 maintenance visit per month, the achievable visibility at this junction is therefore considered to be acceptable.
- 3.4 Swept Path Assessment**
- 3.4.1 In order to demonstrate that the site can be safely and satisfactorily accessed, swept path assessments have been undertaken using an 18m low loader and a 16.5m articulated lorry, which are the largest vehicles anticipated to require access to the site during the construction period.
- 3.4.2 **Drawing number 2920-01-ATR01**, contained in **Appendix B**, shows that the local highway network to the site can satisfactorily cater for construction-related vehicles requiring access to the site. Construction compounds will be provided within both parcels of the application site to allow construction traffic to turn round and exit the site in forward gear.
- 3.4.3 The swept path analysis illustrates that HGVs would be required to utilise the full width of Ing Drove and Cowbridge Road when approaching and exiting the site, with both roads being too narrow to permit two HGVs to pass in opposite directions. This would be addressed through traffic management solutions during peak construction activities
- 3.4.4 This is considered to be acceptable for the following reasons:

- The maximum trip generation associated with the proposed development would be 204 daily two-way movements (102 in and 102 out), including both delivery-related movements and staff trips (see **Section 4**). This level of movement would occur for just a small portion of the construction period and is therefore only temporary and limited in nature (only around 4 weeks out of the 36-week construction period),
- It is likely that the majority of staff trips would occur at the beginning and end of the working day and are unlikely to coincide with delivery-related movements. There will be a maximum of approximately 8 additional two-way HGV movements per hour throughout the working day, which equates to approximately 1 movement every 7 to 8 minutes. This frequency of activity means it is unlikely that two vehicles will meet in opposite directions along the routes, and
- HGV turning movements into and out of the site accesses will also be managed by a banksman to minimise conflict with other road users.

3.4.5 If necessary, a construction management plan (CMP) can be designed and implemented to ensure that any impacts that may arise from construction-related traffic are adequately identified, managed and mitigated against. The requirement to provide a CMP could be set out in a suitably worded planning condition attached to any grant of planning permission.

3.4.6 It should also be noted that any damage that is caused to the carriageways and/or verges along the Haul Road, Ing Drove or Cowbridge Road as a result of large vehicles travelling via these routes would be made good by the developer. Again, this could be secured by a suitably worded planning condition to ensure that the condition of the route is recorded both before / after the installation period and that nil detriment occurs to the local highway network.

3.4.7 During the operational phase, the largest vehicle to require access to the site would be an LGV for maintenance purposes and would therefore be sufficiently accommodated in light of the above.

3.4.8 A number of turning heads will be provided internally within the site to cater for maintenance vehicles requiring access to the site. **Drawing numbers 2920-01-ATR02 and ATR03 (Appendix D)** shows the ability of a 3.5T van to adequately access, manoeuvre and egress the site in a forward gear.

4.0 TRAFFIC GENERATION

4.1 Introduction

4.1.1 The anticipated trip generation associated with the development proposals have been derived based on experience of having promoted other solar farm facilities nationally and from information supplied by the applicant.

4.1.2 The traffic generation forecasts relate to the construction period only. Trips to the site once the solar farm is fully operational would be limited to the occasional LGV associated with maintenance requirements and would be de minimis in nature.

4.2 Trip Generation during the Construction Period

4.2.1 In total, the construction schedule of the development proposals is expected to last for 24 weeks. Construction activities would take place 7 days per week, during the following hours:

- Monday to Friday 07:30 – 18:00, and
- Saturday - Sunday 08:30 – 18:00.

4.2.2 Deliveries and noise generating activities would only take place from Monday – Saturday (inclusive) within the following hours:

- Monday to Friday 07:30 – 18:00,
- Saturday 07:30 – 13:00, and
- No deliveries on Sundays with the exception of one-off abnormal loads or large vehicles such as cranes.

4.2.3 This construction period would allow for the following key construction-related works to be undertaken, which also includes for the setting up and decommissioning of site compound areas:

- Establishment of site compounds and entrance point,
- Erection of deer fencing and gates to site perimeter (including ditch culverts for crossings),
- Hedgerow planting (subject to time of year),

- Construction of site access tracks and temporary crane hard standings at inverter locations (including ditch culverts for crossings),
- Installation of CCTV poles and cameras,
- Installation of solar panels and frames,
- Installation of inverters and storage buildings,
- Installation of control building and switchgear buildings, and
- Grid connection and transformer station.

4.2.4 **Table 4.1** summarises the number and type of deliveries that are anticipated to be generated during the 24-week construction period. A compressed construction period has been used to provide a worst-case scenario with actual construction anticipated to take 24-36 weeks to complete.

Table 4.1 – Anticipated Trip Generation during the Construction Period

Description of Temporary / Ancillary Works and Equipment	Details of Load	Number of Loads
Welfare Delivery	HGV	10
Welfare Collection	HGV	10
Welfare Servicing (diesel, water & waste)	HGV	72
Construction Support		92
PV panels	HGV	211
Metal frames	HGV	100
Cabling	HGV	25
Inverters and transformers	HGV	11
Fencing	Pick up	7
Aggregate for roadways	Tipper truck	919
PV Equipment / Components		1,273
TOTAL (one-way deliveries)		1,365

4.2.5 As summarised in **Table 4.1**, it is anticipated that the total number of deliveries requiring access to the development site would be some 1,365 one-way trips (2,730 two-way trips) across the compressed 24-week construction period.

4.2.6 In addition to the above, there will also be approximately 50 staff requiring access to the site per day, on average. During peak activities, the number of construction-related staff may rise to 120.

4.2.7 The following subsections of this report set out the ‘first principles’ assumptions and trip generation forecasts of the delivery and staff movements that might be expected to occur on a daily basis.

Deliveries

- 4.2.8 As set out in **Table 4.1**, the largest single component of the construction schedule would relate to the delivery of aggregate (919 one-way (1,836 two-way) deliveries) for the construction of site compounds and internal access tracks.
- 4.2.9 In order to establish these foundational components for the commencement of the full construction schedule, it is anticipated that all aggregate would be brought to the site within the first 4-6 weeks of the construction period. For robustness, it is assumed that this would take place within a compressed 4-week (22 day) period.
- 4.2.10 For the remainder of the construction period (20 weeks), there would be a total of 436 one-way (872 two-way) deliveries (i.e. all remaining deliveries that are not associated with aggregate).
- 4.2.11 With regards to the above, **Table 4.2** sets out the 'first principles' assumptions and associated trip generation forecasts for the construction-related deliveries (excluding staff).

Table 4.2 – 'First Principles' Assumptions and Trip Generation Forecasts for Deliveries

Deliveries Week 1-4	
Within the first 4 weeks of the construction period, there will be:	1836 two-way delivery-related movements, in total
This equates to:	459 two-way delivery-related movements per week
Assuming deliveries take place 5.5 days per week, this equals:	22 delivery days in total
This therefore equates to:	84 two-way (42 in / 42 out) delivery-related movements per day, on average
Deliveries Weeks 5-20	
For the remaining 20 weeks, there will be:	892 two-way delivery-related movements, in total
This equates to:	45 two-way delivery-related movements per week
Assuming deliveries take place 5.5 days per week, this equals:	110 delivery days remaining
This therefore equates to:	8 two-way (4 in / 4 out) delivery-related movements per day, on average

- 4.2.12 As set out in **Table 4.2**, within the first 4 weeks of the construction period, there would be a total of 84 daily two-way delivery-related movements to the site, on average.

- 4.2.13 In reality, aggregate may be delivered over a 6-week period and so the actual trip generation during this period could be less than what is indicated in **Table 4.2**. The assessment is therefore considered to be robust.
- 4.2.14 The delivery-related movements associated with the remaining 20 weeks are significantly lower than the initial 4-week period and would be largely imperceptible and temporary in nature. On average, there would be 8 two-way delivery-related movements per day. This level of trip generation is considered to be insignificant.

Construction Staff Trips

- 4.2.15 In addition to trips associated with deliveries, and as mentioned earlier, there will also be a number of movements associated with staff trips. The 'first principles' assumptions and associated trip generation relating to construction staff are set out in **Table 4.3**.

Table 4.3 – 'First Principles' Assumptions and Trip Generation Forecasts for Staff

Staff Trips	
On average there will be:	50 construction staff on site per day
During peak activities this could rise to:	120 construction staff on site per day
Assuming a total car occupancy rate of:	2 people per vehicle
This equates to:	50-two-way (25 in / 25 out) staff trips per day on average
Or:	120 two-way (60 in / 60 out) staff trips per day during peak activities
Assuming that construction activities take place 7 days per week, this would equate to:	350 (175 in / 175 out) two-way staff movements per week, on average
During peak activities, this could rise to:	840 (420 in / 420 out) two-way staff movements per week

- 4.2.16 As set out in **Table 4.3**, approximately 50 construction-related staff will require access to the site per day on average and a maximum of 120 staff during peak activities. It is anticipated that a significant number of construction staff will partake in a car share, thereby reducing the number of trips to the site accordingly.
- 4.2.17 For robustness, it is assumed that the average vehicle occupancy rate per vehicle would be a minimum of 2 and so the number of trips made by staff per day would be

some 25 one-way trips or 50 two-way trips on average, and a maximum of 60 one-way or 120 two-way staff trips during peak activities.

- 4.2.18 In reality, it is anticipated that the level of car occupancy could be higher than this, i.e. perhaps 3 people per vehicle or more, and therefore adding a further layer of robustness to the assessment.

Total Construction-Related Trip Generation

- 4.2.19 In total, there will be a maximum of approximately 204 two-way movements (102 in / 102 out) per day on average during peak activities within the first 4 weeks. This is inclusive of delivery-related movements and staff trips.
- 4.2.20 For the remainder of the construction period (20 weeks), there would be a maximum of approximately 128 two-way movements (64 in / 64 out) per day on average during peak activities, again inclusive of delivery-related movements and staff trips. This equates to an average of 12 additional 2-way movements per hour throughout the working day, or approximately one additional vehicle movement every 5 minutes. This level of trip generation is therefore considered to be negligible.
- 4.2.21 Daily construction-related movements (inclusive of staff trips) would be spread throughout the day. It should also be reiterated here that this level of trip generation is temporary in nature (mainly concentrated in only around 4 weeks out of the 24-week construction period) and any trips to the site, once operational, will be limited to the occasional LGV for maintenance purposes and de minimus in nature. Furthermore, the local highway network is currently very lightly trafficked and would continue to be with the inclusion of the temporary construction-related trips.
- 4.2.22 Even during the initial 4-week construction period, the impact of construction traffic on the local highway network would be minimal, equating to an increase in the average two-way daily flow along the A52, during the working day of approximately 3.0%. As such the assessment of any additional junctions and the need to provide any off-site highway improvements works are considered to be unnecessary in the context of the development proposals.

4.3 Construction Traffic Routing

- 4.3.1 Construction-related traffic would access the site to / from Ing Drove and the National Grid Haul Road. This would be accessed via the A52 and surrounding strategic road network.

5.0 SUMMARY AND CONCLUSIONS

- 5.1.1 AXIS have been appointed by AGR 4 Solar Limited to provide highways and transport advice to accompany a planning application for the Bicker Fen Solar Array, located on land to the north of Northorpe, near Boston, Lincolnshire.
- 5.1.2 The site is circa 92 hectares in size and comprises a number of fields which currently comprise a number of arable fields, which are sub-divided by ditches and broken hedgerows.
- 5.1.3 Analysis of accident data indicates that no accidents have been recorded on the local highway network in the vicinity of the site within the most recently available 3-year period. Therefore, the existing accident record does not present a material concern in the context of the proposed development.
- 5.1.4 The proposals comprise the installation of photovoltaic solar panels and associated infrastructure.
- 5.1.5 Access to the site would be from Cowbridge Road and Ing Drove. Given the relatively lightly trafficked nature of the local highway network, and the that most trips will be of a limited and temporary nature, the site access arrangements are considered to be appropriate for the scale and nature of the development. Access to the wider highway network will be via the National Grid Haul Road and the A52, which connects to the wider strategic network of 'A' roads.
- 5.1.6 This TS assesses the traffic generation of the construction phase only, and has used a 24-week period for robustness. Once operational, trips to the site would be limited to the occasional LGV accessing the site for maintenance purposes and would be de minimis in nature.
- 5.1.7 The trip generation of the construction period has been forecast using a 'first principles' approach based on experience of promoting other solar farms nationally.
- 5.1.8 In total, there will be a maximum of approximately 204 two-way movements per day during peak activities within the first 4 weeks of construction. This is inclusive of delivery-related movements and staff trips.

5.1.9 For the remainder of the construction period (20 weeks), there would be a maximum of approximately 128 two-way movements per day on average, inclusive of delivery-related movements and staff trips.

5.1.10 This level of trip generation is not considered to be significant and would only take place over a limited and temporary time period.

5.2 Conclusion

5.2.1 Having regard to the above, it is therefore concluded that there can be no highway or transport reasons to withhold planning permission for the scheme.

APPENDIX A – SITE LAYOUT PLAN



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Revision History		Date
D	Battery storage layout updated	26-07-22
E	Access tracks and red line updated	04-08-22

Application Boundary

Photovoltaic Panels

Deer / Stock Fence 2.1m

Acoustic Fence 5m

Solar Inverter / Transformer Station

Solar Storage Building

Solar Control Building

Solar Switchgears Building

Battery Storage Container

Inverter / Transformer Station

Control Building

Switchgears Building

Access Track

Low Maintenance Pasture

Species Rich Grassland

Hedgerow

Woodland Shelterbelt

Existing ditch retained and enhanced

Existing public right of way

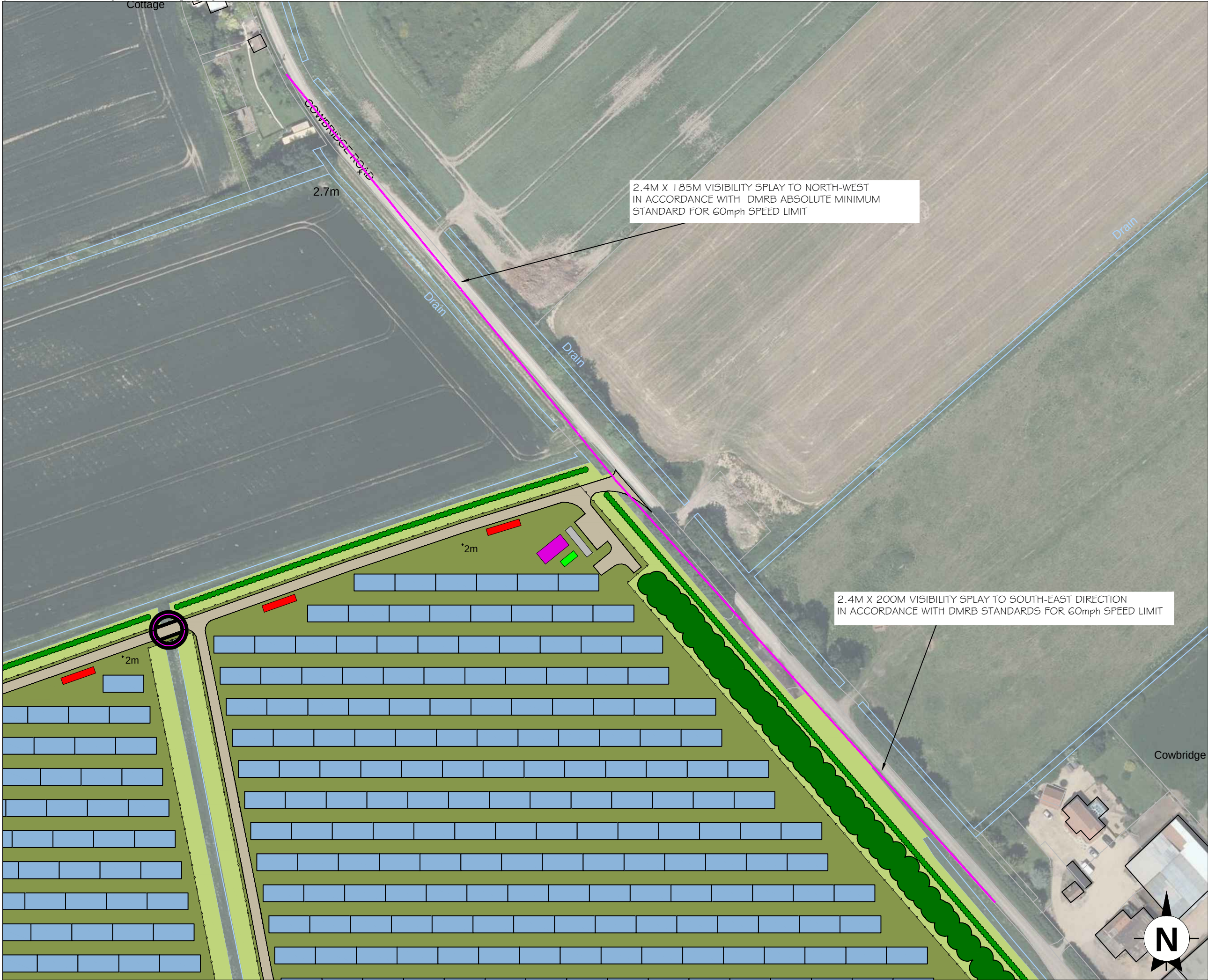
Existing pylon

Proposed ditch crossing

Chester Office Well House Barns Bretton Chester CH4 8DH		South Manchester Office Camilla House 76 Water Lane Wilmslow SK9 5BB	axis
0844 8700 007 - www.axisped.co.uk			
client: AGR			
project: BICKER FEN SOLAR FARM			
drawing title: GENERAL ARRANGEMENT FULL LAYOUT			
date: FEBRUARY 2022		drawn by:	checked:
drawing number: 2920-01-03		TR	PR
scale(s): 1:5,000@A2		status:	
		rev:	E
planning environment design			

**APPENDIX B – DRAWING NUMBER 2920-01-ATR01 (SWEPT PATH ANALYSIS
– CONSTRUCTION PHASE)**

**APPENDIX C – DRAWING NUMBER 2920-01-D01 (JUNCTION VISIBILITY
SPLAYS)**



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Ø	Revision History	Ø	Date

Chester Office: Well House Street Chester CH4 8DH		South Manchester Office: Carnegie House 76 Water Lane Wilmslow SK9 5BB	axis
0844 8700 007 - www.axisped.co.uk			
client: AGR			
project: BICKER FEN SOLAR			
drawing title: VISIBILITY SPLAYS			
date: AUGUST 2022	drawn by: DC	checked: CZ	
drawing number: 2920-01-DO1	status: Prelim		
scale(s): 1:1250@A3	rev: A		
planning environment design			

**APPENDIX D – DRAWING NUMBER 2920-01-ATR02 AND 2920-01-ATR03
(SWEPT PATH ANALYSIS – OPERATIONAL PHASE)**

0:\2021\2920\2920-01-Bicke Fen Solar Farm\Drawings\2920-01-ATRO2.dwg, Rev A, 17 Aug

VIEWPORT 1 - SITE OVERVIEW
(SCALE 1:5,000@A1)

VIEWPORT 5

VIEWPORT 3

VIEWPORT 4

VIEWPORT 2

VIEWPORT 5 (SCALE 1:500@A1)

VIEWPORT 2 (SCALE 1:1,000@A1)

VIEWPORT 3 (SCALE 1:1,000@A1)

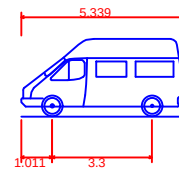
VIEWPORT 4 (SCALE 1:1,000@A1)

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Ø	Revision History	Ø	Date

VEHICLE USED:



3.5t Panel Van
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to lock time
Kerb to Kerb Turning Radius

5.339m
1.985m
2.565m
0.338m
1.985m
4.00s
6.400m

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client: AGR				
project: BICKE FEN SOLAR				
drawing title: SWEEP PATH ASSESSMENT - OPERATIONAL PHASE (SITE NORTH)				
date: AUGUST 2022	drawn by: DC		checked: CZ	
drawing number: 2920-01-ATRO2	status: Prelim			
scale(s): A5 STATED@A1	rev: A			

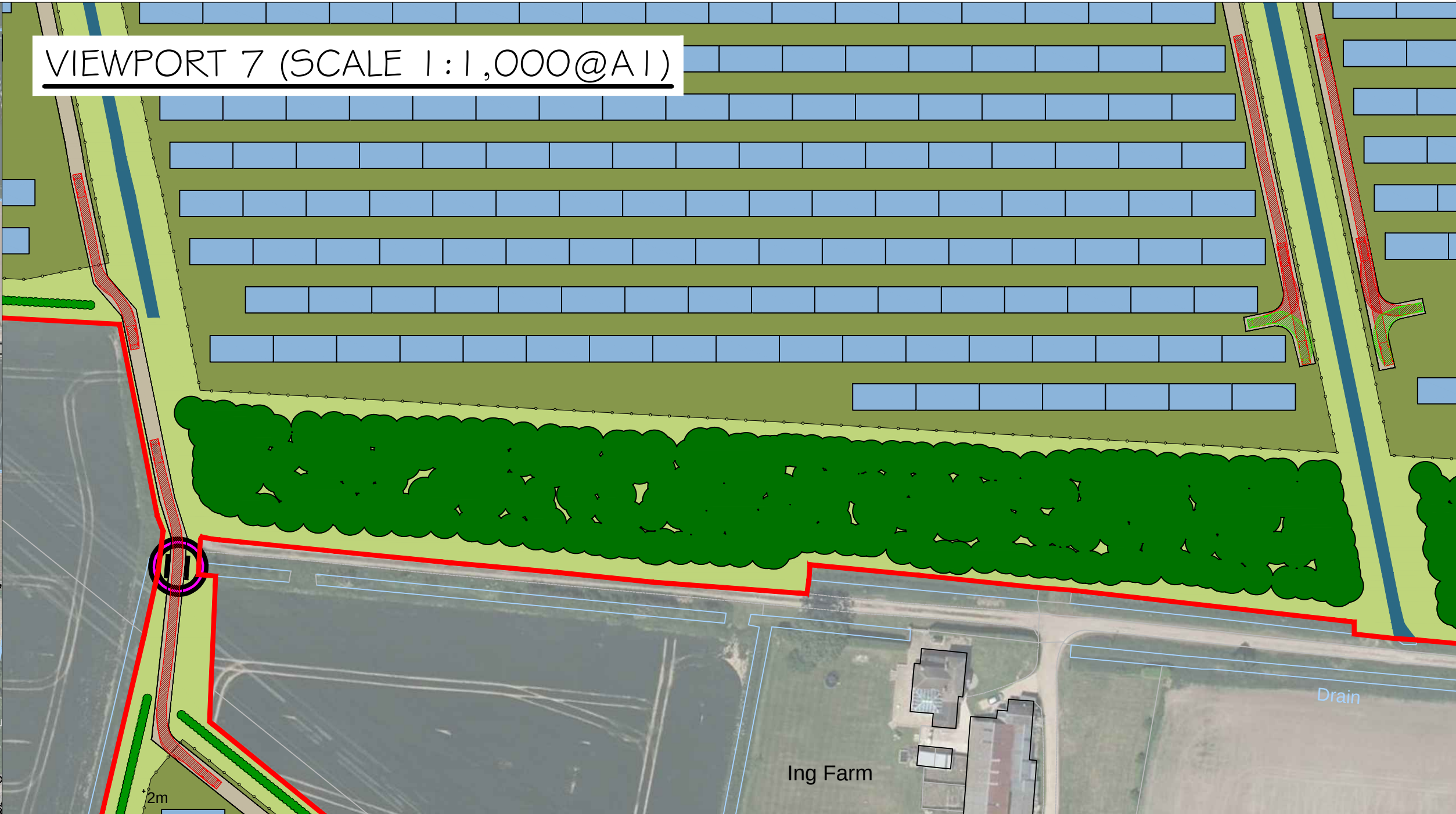
planning environment design

0:\2021\2020\2021-01\Baker Plot Solar Farm\Drawings\2021-01-ATRO3-Rev A.dwg

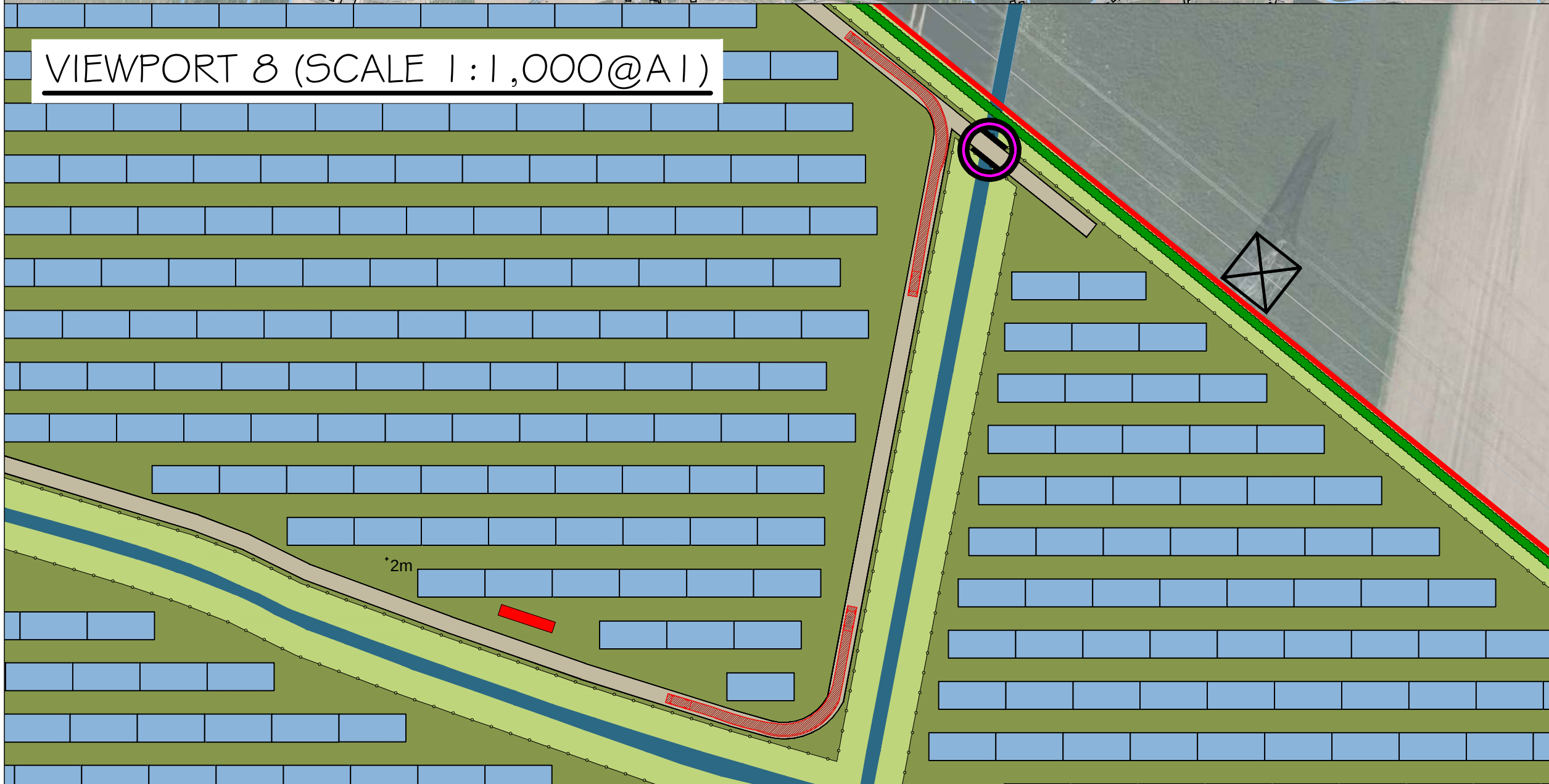
VIEWPORT 6 - SITE OVERVIEW
(SCALE 1:10,000@A1)



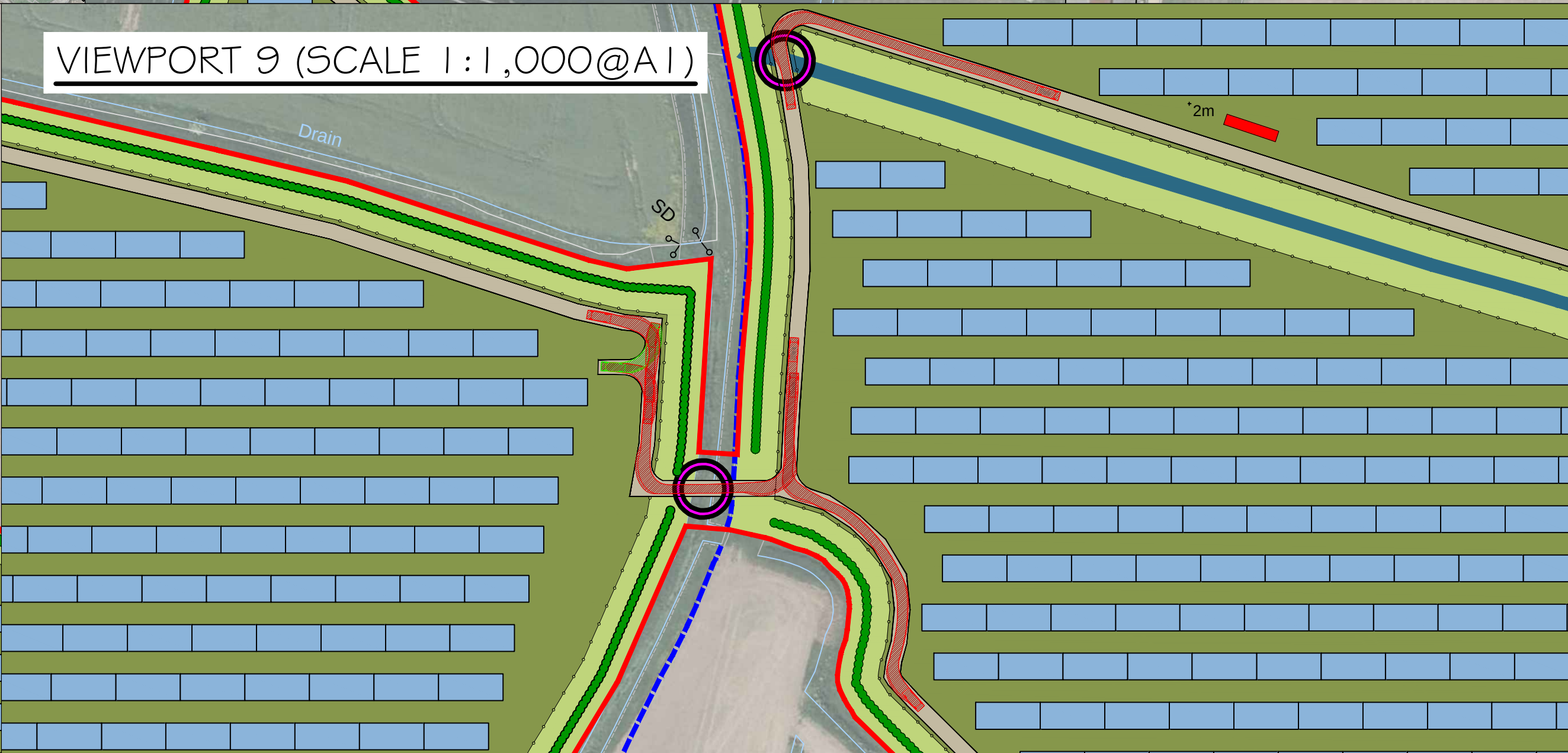
VIEWPORT 7 (SCALE 1:1,000@A1)



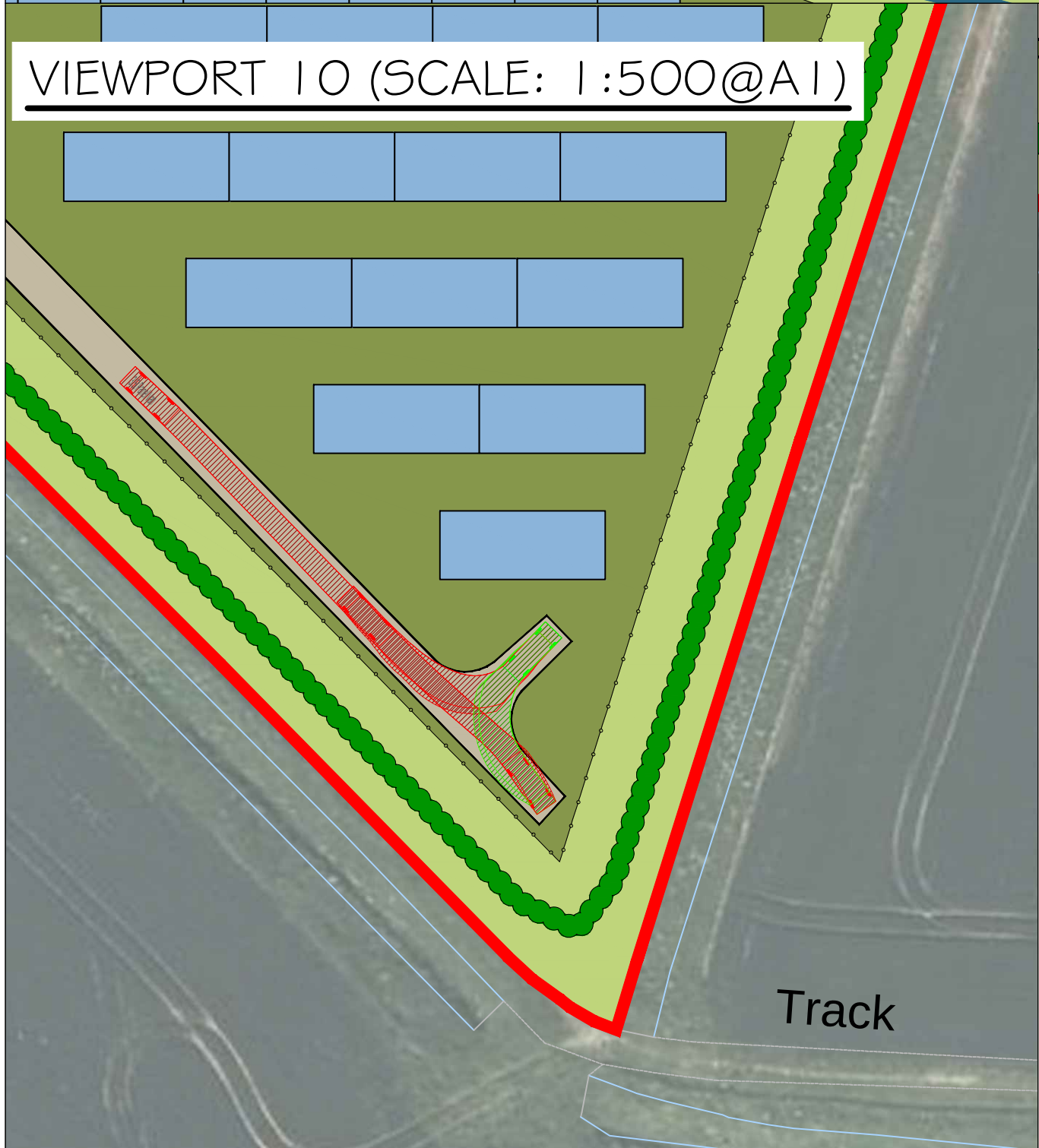
VIEWPORT 8 (SCALE 1:1,000@A1)



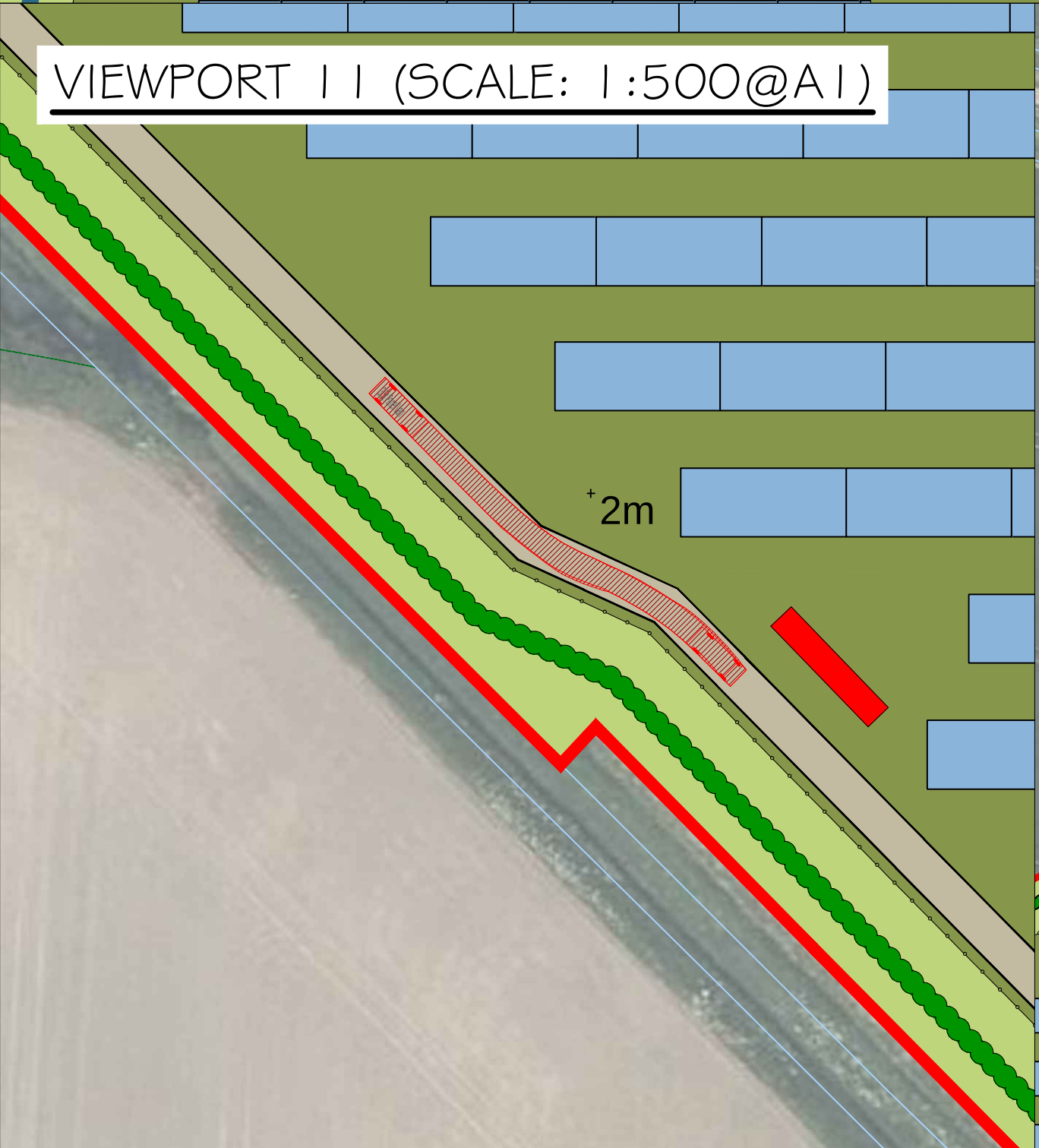
VIEWPORT 9 (SCALE 1:1,000@A1)



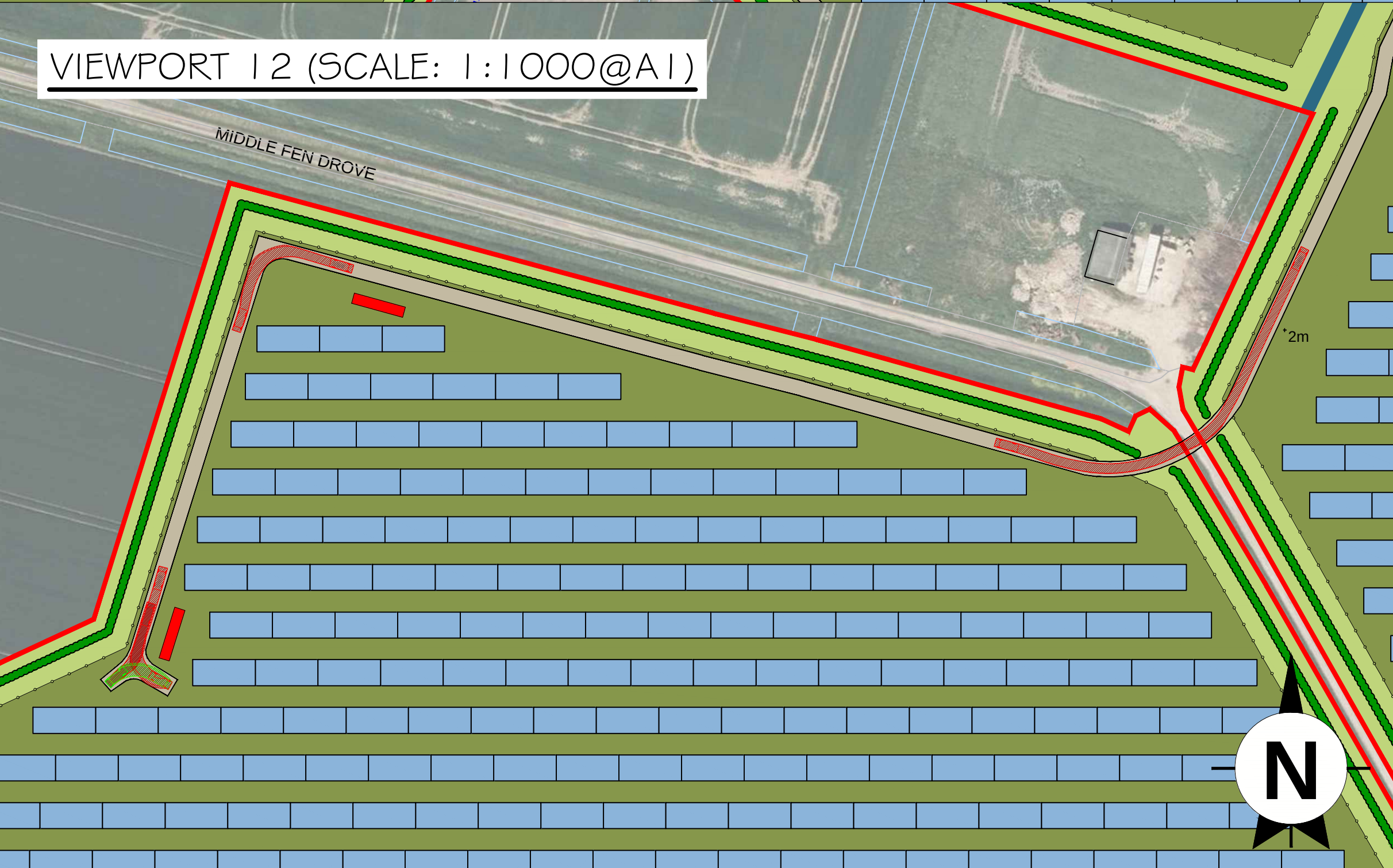
VIEWPORT 10 (SCALE: 1:500@A1)



VIEWPORT 11 (SCALE: 1:500@A1)



VIEWPORT 12 (SCALE: 1:1000@A1)

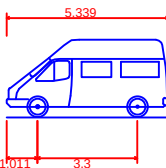


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Rev	Revision History	Date

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Kerb to Kerb Turning Radius

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6.400m

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client: AGR				
project: BICKER FEN SOLAR				
drawing title: SWEPT PATH ASSESSMENT - OPERATIONAL PHASE (SITE SOUTH)				
date: AUGUST 2022	drawn by: DC		checked: CZ	status: Prelim
drawing number: 2920-01-ATRO3				
scale(s): AS STATED@A1			rev: A	