voltalia

Development of national significance in the renewable energy sector

Environmental Statement Non-Technical Summary

Penderi Solar Farm,
Land at Blaenhiraeth Farm,
Langennech, Llanelli, SA14 8PX

Articles 8 & 9 of Developments of National Significance (Procedure) (Wales) Order 2016

August 2019 | BRS.4254

Pegasus Group

PENDERI SOLAR FARM

ENVIRONMENTAL STATEMENT

NON-TECHNICAL SUMMARY

Pegasus Group

First Floor | South Wing | Equinox North | Great Park Road | Almondsbury | Bristol | BS32 4QL

T 01454 625945 | **F** 01454 618074 | **W** www.pegasusgroup.co.uk

Birmingham | Bracknell | Bristol | Cambridge | Cirencester | East Midlands | Leeds | Liverpool | London | Manchester

PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

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1. INTRODUCTION

1.1 This Environmental Statement Non-Technical Summary has been prepared on behalf of Voltalia UK Ltd [the applicant and developer] and forms part of a suite of documents supporting the statutory pre-application consultation for the construction, operation, management and decommissioning of a renewable energy scheme on land at Penderi, Blaenhiraeth Farm, Llangennech, Llanelli, SA14 8PX.

1.2 The main element of the scheme is the installation of ground mounted solar panels. There will also be electrical connection infrastructure and the point of connection into the local electricity grid is directly to the 132kv electrical overhead pylon which already runs through the farmstead and development site. By virtue of its potential generating capacity, which stands at 38MWp (Megawatts peak), this project constitutes a Development of National Significance ["DNS"]. Therefore, instead of applying to the Local Planning Authority for Planning Permission, the application must be made to the Welsh Government for determination.

1.3 This Environmental Statement is being published to accompany the pre-application public consultation for Penderi Solar farm carried out under Articles 8 and 9 of the Development of National Significance (Procedure) (Wales) Order 2016. The formal pre-application consultation runs from Wednesday 7 August 2019 to Friday 27 September 2019. Any comments over this document must be submitted to Pegasus Group before 5pm Friday 27 September 2019 to: -

Email: Penderi@pegasusgroup.co.uk

Postal: Pegasus Group, First Floor, South Wing, Equinox North, Great Park Road, Bristol, BS32 4QL

Online: www.penderisolarfarm.co.uk

Legislative Context

1.4 Part 5 of the Planning (Wales) Act 2015 established a new category of development named DNS. Provision in the Act came into force in March 2016 which requires the Welsh Minister to determine DNS projects, with applications being made directly to them. The process for applying for a Development of National Significance is set out by the Development of National Significance (Procedure) (Wales) Order 2016 and subsequent Regulations. The DNS application process is managed by Planning

Inspectorate Wales on behalf of the Welsh Government. Decisions are made in the context of the Welsh Government's national planning policy and Carmarthenshire's Local Development Plan. Prior to submitting the application to PINS Wales, the applicant must publicise and consult on the proposed application for a period of at least six weeks. Following the formal pre-application consultation, applications are submitted to the Planning Inspectorate Wales for consideration by an appointed Planning Inspector.

What is Environmental Impact Assessment (EIA) and Environmental Statement

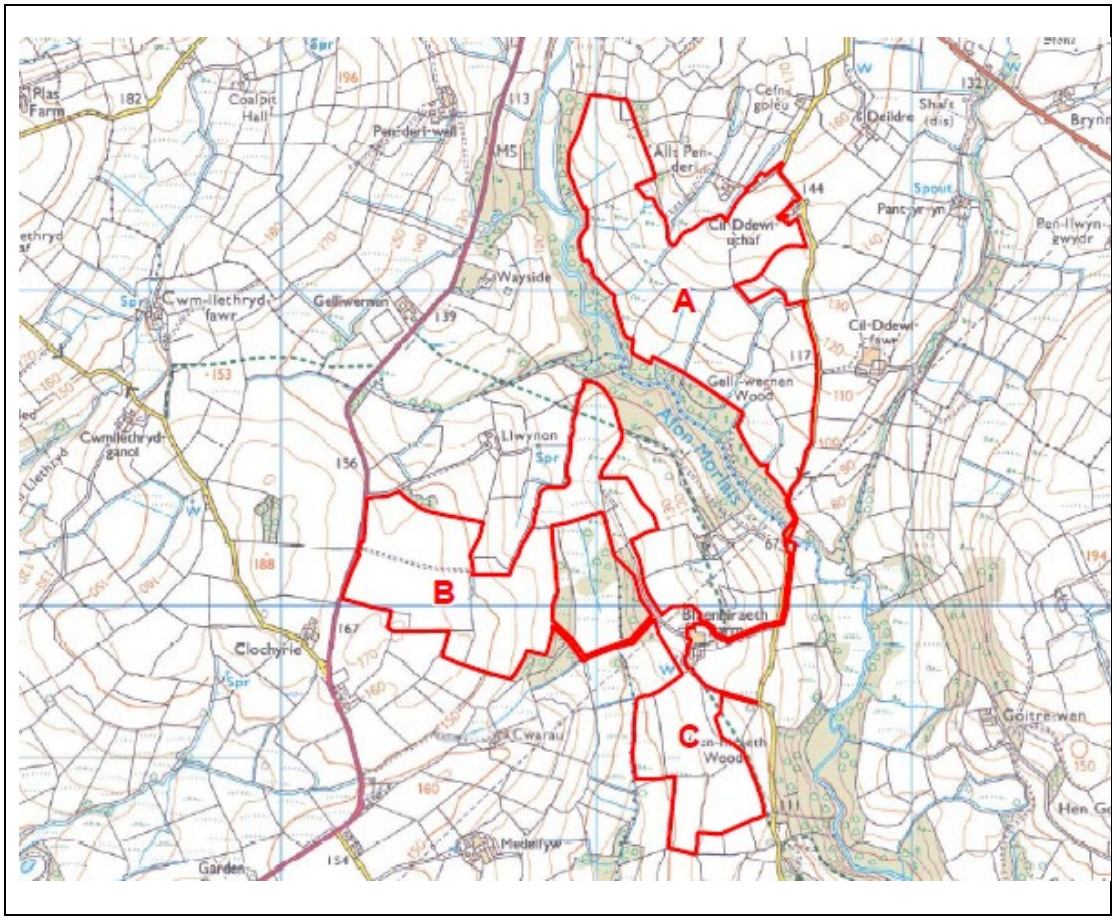
1.5 An Environmental Statement is a document that sets out the findings of an Environmental Impact Assessment ["EIA"]. An EIA is a process for identifying the likely significance of environmental effects (beneficial or adverse) arising from a Proposed Development, by comparing the existing environmental conditions prior to development (the baseline) with the environmental conditions during/following the construction, operational and decommissioning phases of a development should it proceed. The EIA has been carried out prior to the submission of a planning application.

1.6 The statutory requirements for carrying out an EIA, the contents of the Environmental Statement and the procedures for determining planning applications for 'EIA Development' are set out within the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. In order to determine the extent, or 'scope', of issues to be considered in the assessment and reported in the Environmental Statement, the Planning Inspectorate was asked for its formal opinion on the information to be supplied in the Environmental statement. The Environmental Statement has been prepared in line with the scoping direction.

1.7 This NTS covers all disciplines assessed in the Environmental Statement. The Environmental Statement has been coordinated and managed by Pegasus Group on behalf of Voltalia UK Ltd. The Environmental Impact Assessment upon which it has been based has been undertaken by Pegasus Group (coordination of EIA, general ES chapters, landscape and visual); Clarkson & Woods Ecological Consultants (ecology); and, Clive Onions Ltd and Integral (Hydrology and Ground conditions).

2. DEVELOPMENT SITE

2.1 The development site extends to 96.27 hectares of predominantly agricultural land located approximately 5km north of Llanelli in open countryside. The site lies to the east of the A476 and is split into three distinct land parcels (A, B and C) which form part of a wider single agricultural holding and is bisected by the River Morlais.



2.2 Site A is located within 9 no. medium scale geometric and irregular pastoral fields on the eastern slopes of the Afon Morlais Valley between Penderi and Cil Ddewi-uchaf to the north, Cil-Ddewi-fawr to the east, Gelliwernen Wood and Afon Morlais to the south west of the site. Site A roughly measures 1,400 metres from north-to-south with an average width of 300 metres east-to-west. Site A is located on moderate to gently sloping topography between 90m AOD to the south and 145m AOD to the north near Cil Ddewi-uchaf Farm. The contours generally follow the curvature of the river along the south west and towards the Afon Morlais Valley. Site A is potentially accessible from the unclassified lane near Cil Ddewi-uchaf Farm to the east of the site.

2.3 Site B is located within 5 no. medium to large scale geometric pastoral fields to the east of the A476 Llannon Road between Llwynon to the north, Afon Dafen to the east, Cwarau and Medelfyw to the south, and Clochyrie to the south west of the site. Site B is located on gentle to moderately sloping topography between 165m AOD to the west following the A476 and 119m AOD to the north east of the site within the Afon Dafen Valley to the west of Blaenhiraeth Farm. A small area of solar arrays are also proposed on the slopes to the north of Blaenhiraeth Farm between 135m AOD and the farm track descending into the valley at 124m AOD. An existing public footpath extends along the valley bottom to the north. Site B is potentially accessible from the A476 Llannon Road on higher ground to the west of the site or from the farm track extending to the north west of Blaenhiraeth Farm into the lower valley.

2.4 Site C is located within 4 no. medium to small scale geometric pastoral fields within a local north/south valley between Blaenhiraeth Farm to the north, Troserch Wood to the east, Allt-y-frain-fach to the south, and the Afon Dafen Valley to the east of the site. Site C is located on gently sloping topography between 117m AOD near Blaenhiraeth Farm to the north, and 96m AOD within the Afon Dafen Valley to the south west of the site. Site C is accessible from the farm access track directly to the south of Blaenhiraeth Farm.

3. DEVELOPMENT PROPOSAL

3.1 The main element of the proposal is the installation of a ground mounted solar park with a maximum design capacity of up to 38MWp (megawatts peak) to achieve a maximum export capacity value of 30MW. Full details of proposed layout are provided on the planning application drawings at Appendix 1.

3.2 The photovoltaic panels would be laid out in straight arrays set at an angle of c. 20 degrees from east to west across the various field enclosures. The top north edges of the panels is expected to be 2.44m above ground level. For the purpose of assessment, the top height will be set at 3m. The lower edges of the panels would be approximately 0.7 metres above ground level. The arrays would be static. The positioning of the arrays respond to existing physical features and separation distances are provided between such features, these include ditches, overshadowing, rights of way, existing infrastructure (overhead cables), biodiversity considerations and tree root protection areas.

3.3 The arrays would be set within a 2.0m high security fence. The distance between the proposed fencing and existing hedges would vary across the site and at its minimum distance this would be circa 5m. The security measures that will accompany the scheme include 3m high CCTV poles.

3.4 There will also be electrical connection infrastructure and a substation compound would be centrally located within the site and positioned adjacent to the overhead pylon to the north west of the Blaenhiraeth Farm outbuildings. The point of connection to the local electricity grid would be directly to the existing overhead pylon. The cabling connecting the arrays from land parcels A, B and C to the substation would be concealed in trenches. The proposed cable run between land Parcel A and the substation includes the laying of cables through the Grade II Listed Masonry Cilddewi Bridge.

3.5 The cables linking all the arrays to the inverter / transformers and then the substation would be concealed in trenches up to 1m deep. The inverters / transformers and substation will be laid on slab / concrete foundations.

Operational Lifespan

3.6 The development would export renewable energy to the grid for a minimum of 35 years.

Renewable Energy and Carbon Displacement

3.7 The solar farm would generate clean renewable energy for the equivalent of over 10,600 homes a year. The anticipated CO^2 displacement is 15,000 tonnes per annum.

Access

3.8 Sites B and C (Southern sites) will be accessed from the A476. Site C can be accessed from Site B via existing internal tracks and roadways of the farm. It is not proposed to route any construction vehicles to Site C via Penderi Lane. Plant and machinery will be off loaded at the compound in Site B and the transported via the internal site access roads to Site C. This will prevent further construction traffic accessing and impacting on the local road network.

3.9 Access to Site A (Northern area) is proposed from an existing access located from Penderi Lane approximately 750m from its junction with the B4306. The existing access is an existing track of loose (compacted) stone construction. Penderi Lane is a rural lane used to access a number of farms and predominantly used by agricultural vehicles. Penderi Lane is subject to the national speed limit. However in reality speeds and volumes of traffic are low due to the rural nature and alignment of the road.

Routing

3.10 Construction and delivery vehicles can make use of the M4 and exit at either junction 48 (Llanelli) or 49 (End of motorway). From junction 48 they can access onto the A4138 towards Pontarddulais and then northbound onto the A48. After approximately 1km vehicles can turn onto Y Geibren to access northbound onto the B4306 towards Llannon. At Llannon vehicles will then turn southbound on the A476 towards Llanelli and the access for Site A and the site compound.

Biodiversity Enhancements

3.11 Land between and beneath the panels would be used for biodiversity enhancements and seasonal sheep grazing. Tree planting would be introduced to bolster screening.

3.12 The application proposal would also include a package of landscape, ecological and biodiversity benefits that could include the installation of bird nesting boxes, bee

hives, log piles and other hibernacula such as small buried rubble piles suitable for reptile species, amphibians and insect life.

Site Selection

3.13 One of the biggest constraints which has to be considered when developing renewable led energy scheme is gaining a viable point of access to the utilities network. The Western Power Distribution network has a 132kv overhead line circuit which traverses over the land at Blaenhiraeth Farm. The developer has accepted the grid offer from Western Power Distribution and secured the 30MW export capacity required for a project of this size. The grid offer accepted can only be used for the Penderi development and cannot be transferred to any other site, as this would be deemed by the District Network Operator as a significant alteration to the original application. The connection secured by the developer has taken the electricity network to its maximum fault level.

3.14 Having established the point of connection, the development site itself was selected through an extensive site sieving exercise based on a range of technical, environmental and economic factors. Whilst each issue is important on its own merits, each factor must be weighted and measured against other sustainability considerations including: Solar irradiation levels & shading; Flood risk; Landscape considerations; Topography; Proximity to sensitive human receptors; Agricultural land; Heritage; Biodiversity and geological conservation; and, Commercial agreement with the landowner.

Accidents or Disasters

3.15 The development is not considered likely to cause a significant accident or disaster risk during either the construction, operation and decommissioning phases. The risk both to construction workers and the general public is low and not significant during the construction and decommissioning phases. This would be regulated by the Health and Safety Regulations and the construction (Design and Management) Regulations 2015. The construction of the Development would be managed in accordance with the Health and Safety at Work Act 1974 and would comply with all other relevant Health and Safety Regulations, including the Construction (Health, Safety and Welfare) Regulations 1996 and Electricity Safety, Quality and Continuity Regulations 2002. When operational, the majority of the development comprises solar PV modules which are inert. Electrical infrastructure will be located

across the Development, in the form of inverters, transformers and cabling, all of which will be subject to routine maintenance such that it is not considered to pose a significant risk to creating an accident or disaster.

3.16 The substation compound will have a concentration of electrical infrastructure which will include the substation and transformers all of which will be adopted by the DNO and subject to their routine maintenance regime. Accordingly, it is not considered to pose a significant risk of creating an accident or disaster.

Climate Change

3.17 With regards to vulnerability to climate change, the solar modules are designed to capture the sun's energy and therefore built to withstand extreme climatic conditions and are purposefully located in open locations. The site is not located within a coastal location and as such is not at risk to any changes to the sea level. The framework holding the modules are driven into the ground at an appropriate depth which responds to site specific ground conditions and are designed to accommodate the predicted relatively small change in wind speed during the lifespan of the development.

Alternatives

3.18 In terms of comparative alternatives when considering agricultural land take, the production of energy from solar panels is far more efficient than alternative forms of energy production gained from cropping the land.

Alternative Design

3.19 Over the course of the design process, the project team have continuously refined the scheme's design to encompass Carmarthenshire County Council's and other stakeholders' feedback at numerous junctures. This has predominantly focused on the placement of the proposed arrays how they have been broken up to avoid localised sensitive areas, such as higher land within field enclosures, ecological sensitive receptors and hydrological considerations.

4. CLIMATE CHANGE, ENERGY, PLANNING POLICY & GUIDANCE

4.1 There is a plethora of Government legislation, guidance and policy which support the transition to a low carbon future and the continued roll out of renewables and low carbon energy and associated infrastructure. The UK is part of an international effort to combat climate change. The UK is a party to the United Nations Framework Convention on Climate Change (UNFCCC) and as such has signed up to international climate change obligations, such as the Kyoto Protocol and the Paris Agreement.

4.2 As part of its contributions to international efforts, the UK also has domestic legislation and policies in place to reduce greenhouse gas emissions. The Climate Change Act 2008 established long term statutory targets for the UK to achieve an 80% reduction in greenhouse gases by 2050 against a 1990 baseline. However, as identified by Jeremy Corbyn during his Environment and Climate Change debate on 1 May 2019, that at current trends the point of zero net emission would not be reached until the end of the century by which time *"our grandchildren will be fighting for survival on a dying planet"*. The opposition day debate was called in the wake of weeks of direct action by protesters, including school climate strikers and Extinction Rebellion sit-ins that closed roads and bridges around London. Parliament duly backed the call by the opposition Labour Leader and declared an Environmental and Climate Change Emergency for rapid and dramatic action to protect the environment for generations to come.

4.3 Corbyn was among MPs who met the teenage Swedish activist Greta Thunberg at Parliament in April 2019. The 16-year-old Swedish student, who sparked a global youth-based movement when she began a "climate strike" outside Sweden's parliament last year, gave a typically blunt speech. She told MPs: "This ongoing irresponsible behaviour will no doubt be remembered in history as one of the greatest failures of humankind.". Thunberg said there was still just about time to stop climate change: "I'm sure that the moment we start behaving as if we were in an emergency, we can avoid climate and ecological catastrophe. Humans are very adaptable. But the opportunity to do so will not last for long." She said the deciding factor for every new economic development must be the level of carbon emissions it will produce. "Every time we make a decision we should ask ourselves; how will this decision affect that [emissions] curve?".

4.4 On 12 June 2019, as a direct response to the Climate Change Emergency Declaration, the Prime Minister announced that the UK will eradicate its net contribution to climate change by 2050 and The Secretary of State for Business, Energy and Industrial Strategy, MP Greg Clark, tabled the draft affirmative statutory instrument to implement the changes, the Draft Climate Change Act 2008 (2050 target Amendment) Order 2019. The amendment in the Order changes the minimum percentage by which the net UK carbon account for the year 2050 must be lower than the 1990 baseline and is increased from 80% to 100%.

4.5 At a local level, Carmarthenshire County Council Dorset Council made its own Climate Change Emergency Declaration during its full council meeting on 20 February 2019.

5. LANDSCAPE AND VISUAL

5.1 The likely effects of the development on landscape character, landscape feature and elements within and in the immediate vicinity of the development have been assessed.

Effects on Landscape Elements

5.2 The landscape elements that constitute the landscape character of Sites A, B and C would remain largely unaffected by the proposed development. Site topography, field pattern and enclosure, woodlands, hedgerows and trees would generally remain physically intact with the solar arrays and supporting infrastructure in place. Enhancements to landscape elements would be made in terms of the maintenance and infilling of hedgerows to enhance visual screening. In particular, new hedgerows are proposed to the north of Site A, to the north and east of Site B, to the north east of Site C and to enclose the grid connection to the north of Blaenhireath Farm. This would result in an overall net gain of the site's hedgerow resource. The existing hedgerows would be managed to improve the visual screening of the solar panels and security fencing and to enhance the landscape character and biodiversity of the site. Owing to the ease of removal of all the above ground structures, ground fixings and associated infrastructure, any effects upon landscape elements resulting from the proposed development are reversible with the land being returnable to the agricultural land use on decommissioning.

Effects on Landscape Character

5.3 The landscape elements that constitutes the character of the LANDMAP geological, habitats, historic or cultural aspect areas within Sites A, B and C would generally remain physically unaffected by the proposed development. The effects on landscape character would therefore result from the visual influence of the solar arrays on the LANDMAP visual and sensory aspects including the Llanelli Hills and the Swiss Valley and Morlais Valley. Due to the limited visibility of Sites A, B and C within the 5km of the sites, the landscape character of the LANDMAP aspect areas would generally prevail outside of the site with the proposed development in place.

Effects on Visual Amenity

5.4 Glimpse views of the security fencing and upper solar panels above hedgerows would be perceptible when travelling along the unclassified lane between the

B4306, Cil-Ddwe-uchaf, Blaenhiraeth Farm and Troserch Wood directly to the east of Site A and C; on the unclassified lane between Porth Dafen, Carn-Hywel-isaf and the A476 Llannon Road to the south of Site C; and when travelling along the elevated A476 Llannon Road to the west of Site B. These glimpse views would be further screened through proposed hedgerow reinforcements to improve visual screening.

5.5 Close proximity views of the solar arrays would be apparent from the public footpath 33/54 between Troserch Wood, Blaenhiraeth Wood and Gelliwernen Wood within the Afon Morlais Valley between Sites A, B and C. However, this public footpath is very infrequently used and no longer visible on the ground in the surroundings of Blaenhiraeth Farm.

5.6 Sites A, B and C would not be visible from the settlements of Hendy, Llangennech, Swiss Valley or Horeb. Distant glimpse views of the solar arrays within Site A would be barely perceptible from Llannon located 1.6km to the north. Due to the undulating landform, hedgerows and woodland many views of the solar panels would generally be restricted to glimpses from upper floor windows from the isolated farms and residential properties directly surrounding the sites. However, the proposed development would maintain privacy and would not appear overbearing. A separate Residential Visual Amenity Assessment (RVAA) is currently being undertaken to consider the significance of effects of the proposed development on private views from the surrounding residential properties.

5.7 There are no large scale solar PV developments within the immediate surroundings of Sites A, B and C therefore the scope for any in combination, sequential or in succession cumulative effects are limited.

Summary

5.8 The proposed solar PV development would result in a degree of harm to the landscape character and visual amenity of the land at Blaenhireath Farm, Llanelli. However, the landscape and visual effects would be localised owing to the sloping landform of the valley, surrounding woodland and the limited receptors or opportunities to observe the proposed development in the wider landscape from publicly accessible viewpoints.

6. ECOLOGY AND NATURE CONSERVATION

6.1 The likely effects of the development on ecology have been assessed. Ecological impacts cannot be confirmed for decommissioning as the ecological constraints at the point of decommissioning are extremely difficult to predict at this stage. The salient points are identified below.

6.2 The ecological survey identified a range of habitats on/immediately adjacent to the site, however, many of these habitats were of low ecological value. The habitats within and adjacent to the site were assessed as being suitable for a variety of notable and protected species. Bury Inlet SPA/Ramsar, Carmarthen Bay and Estuaries SAC and Rhos Cefn Bryn Wildlife Trust Reserve were situated near to the site and the SAC and SPA/Ramsar were considered within the zone of influence.

6.3 A total of 15 "Important Ecological Features" (IEFs) were identified: Bury Inlet SPA/Ramsar, Carmarthenshire Bay and Estuaries SAC, hedgerow, semi-improved grassland, fen, streams/rivers, woodland, bats, dormice, otter, breeding birds of open habitats, breeding birds of boundary habitats, wintering birds of open habitats. Mitigation for badgers and reptiles has also been included due to a requirement for legal compliance.

6.4 Impacts were considered at both the construction and operational phases of the project. Key sources of impacts during construction were identified to be habitat loss, fragmentation, disturbance of species through noise and vibration, degradation of habitats by pollution or dust deposition and the incidental mortality of species during construction. Fewer operational phase effects were noted as post construction activity at the site would be minimal. However the loss or modification of the habitat during operation which will occur during the construction phase will persist for certain species throughout the operational phase, potentially having long-term adverse effects. Conversely for other species and habitats the long-term operation of the site is anticipated to be beneficial, even within the implementation of mitigation and enhancement measures.

6.5 The key effects likely to result in significant adverse effects were mainly associated with habitat loss (as a result of construction activities), impacts on species through removal of small sections of hedge bank, incidental mortality of animals during construction, degradation of habitats resulting from dust/runoff/collision and disturbance of species utilising adjacent habitats.

6.6 Operational phase effects were considered to be generally neutral although uncertainty in the conclusions was noted, in particular with respect to the adverse effects of the development on ground nesting birds. Beneficial effects have been identified through creation of native, species-rich hedgerows on site which will improve connectivity as well as foraging and nesting/ sheltering habitat for a range of species.

6.7 A Landscape and Ecological Management Plan has been prepared in order to outline how the site will be managed post construction in order to maximise its ecological value. This includes conservation management of grassland to increase its species richness and management of hedgerows to maximise their value for wildlife. Other enhancements for the site include the creation of tussocky grassland at the field margins to attract a variety of invertebrates, small mammals, reptiles, amphibians, bats and birds.

6.8 With the successful implementation of the mitigation measures adverse impacts upon the ecological features identified can largely be reduced to a non-significant level.

7. HYDROLOGY AND GROUND CONDITIONS

7.1 We have undertaken an assessment of the likely effects of the development upon hydrology and ground conditions, particularly related to potential impact on the receiving watercourses and their habitats. The salient points are set out below.

7.2 The site comprises arable and cattle grazing farmland drained by ditches and watercourses to main rivers. The arable farming involves the normal farming activities such as harvesting followed by periods of bare earth when soil erosion can occur during wet weather. Cattle can also cause trampled areas which result in silt runoff into the receiving watercourses.

7.3 The likely significant effects of the completed solar farm are beneficial and include a reduction in the risk of silt runoff, improved (ie more uniform) flow characteristics in the receiving watercourses and improved runoff quality. The risk of silt runoff is high during construction, when the vegetation and soils can be damaged by traffic resulting in the potential for silt runoff. This is exacerbated if works are undertaken during wet weather.

7.4 The Contractor will be required to prepare a CEMP which will be reviewed and approved.

7.5 The CEMP must include measure to prepare for and implement, which will reduce the risk of silt and waste entering the receiving watercourses during construction and until the vegetation has established.

7.6 Preparation, seeding and protection to encourage early vegetation will be included in the contract.

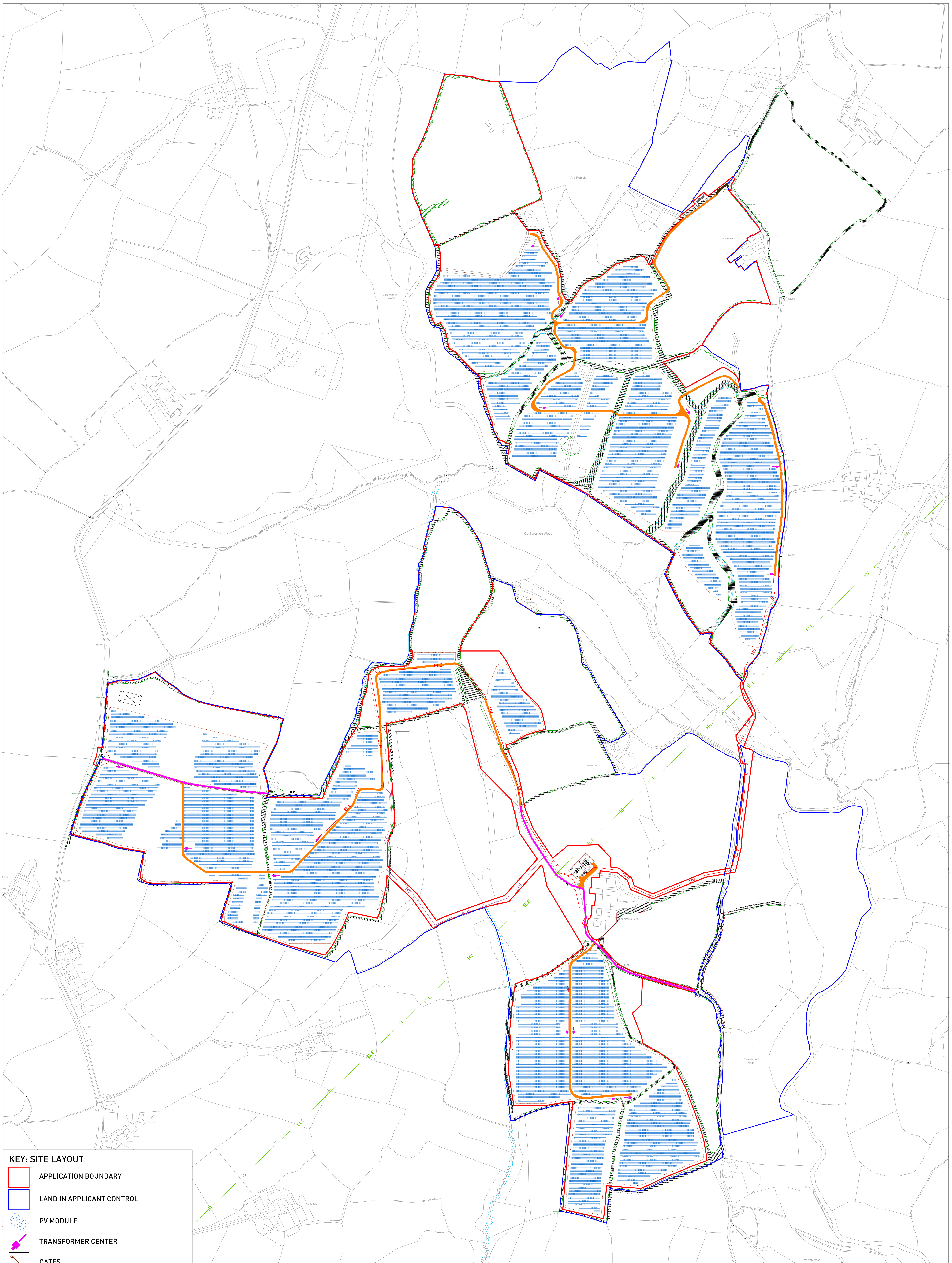
7.7 These measures will protect the receiving watercourses from being adversely affected by the works, and on completion will result in improved conditions in the receiving watercourses.

7.8 The consequence of the development, with the mitigation measures incorporated to reduce silt and debris mobilisation during the construction and until the vegetation has established, will be to deliver improved conditions in the receiving watercourses, and improved conditions for the designated sites and the habitat for otters.

7.9 The completed solar farm will become a haven for wildlife and enhance biodiversity in the area and downstream, as has been demonstrated on other solar farms delivering moderate beneficial improvements.

APPENDIX 1

PROPOSED LAYOUT



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KEY: SITE LAYOUT

- APPLICATION BOUNDARY
- LAND IN APPLICANT CONTROL
- PV MODULE
- TRANSFORMER CENTER
- GATES
- FENCE
- PROPOSED UNDERGROUND CABLE ROUTE (ELECTRIC)
- PROPOSED UNDERGROUND CABLE ROUTE (ELECTRIC) OPTION 2
- ACCESS TRACK
- PROPOSED SUBSTATION YARD
- MAIN CONTRACTOR COMPOUND
- CCTV
- EXISTING OVERHEAD CABLE ROUTE (ELECTRIC)
- EXISTING TRACK
- EXISTING VEGETATION

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PENDERI SOLAR FARM - **PROPOSED SITE LAYOUT**

Pegasus Design

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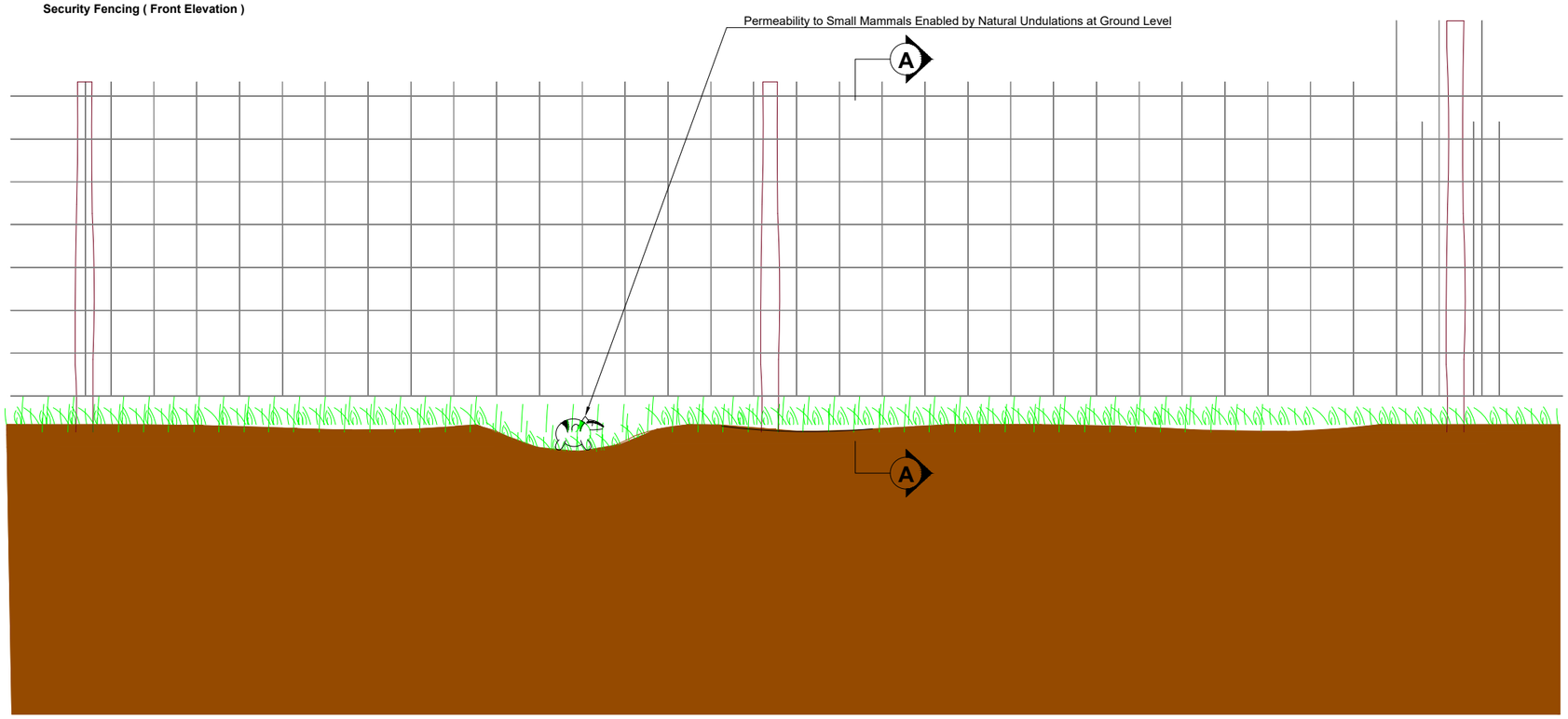
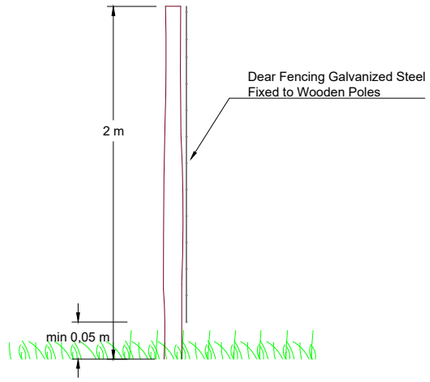
| www.pegasusgroup.co.uk | TEAM/DRAWN BY: RIT | APPROVED BY: GR | DATE: 11/07/19 | SCALE: 1:3000 @ A0 | DRWG: **BRS.4254**_33 SHEET NO: __ REV: _ | CLIENT: **VOLTALIA** |

Security Fencing (Front Elevation)



Security Fencing (Secction A´A)



Security Fencing (Sample Images)

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VERSION	PURPOSE	DRAWN	VERIFIED	DATE
00	Initial version	Carla Bastos	Gonçalo Oliveira	02.04.2019

CLIENT:	-	**DRAWN:**	Carla Bastos	**SERVICE:**	Electrical
PROJECT:	PENDERI SOLAR FARM	**VERIFIED:**	Gonçalo Oliveira	**STAGE:**	Development
		DATE:	02.04.2019	**RELEASED BY:**	GED
SITE:		**SCALE:**	1:50	**VOLTALIA**	
DRAWING DESIGNATION:	Fence Details	**PROJECT Nº:**	SOF01	84 boulevard de Sébastopol	
		FORMAT:	A3	75003 PARIS, France	
		DRAWING Nº:	SOF01_DV_CS_103_00	Tel: +33 1 81 70 37 00	

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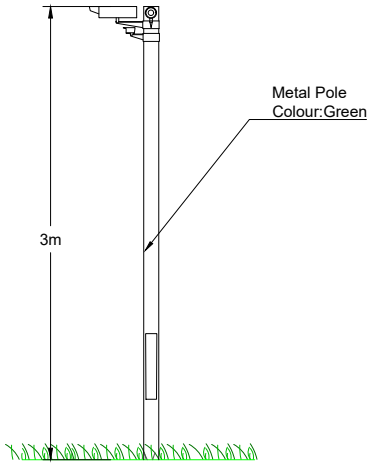
CCTV Camara (Elevation)



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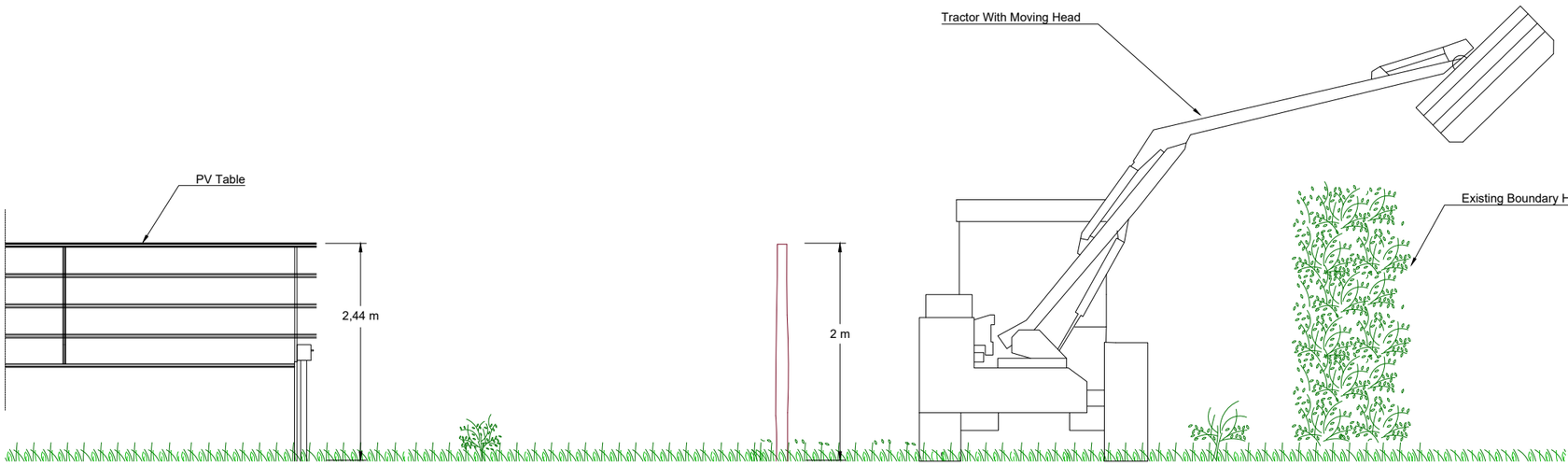
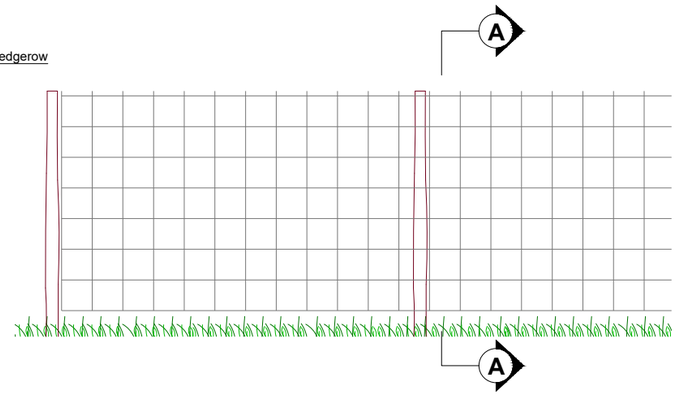
VERSION	PURPOSE	DRAWN	VERIFIED	DATE
00	Initial version	Carla Bastos	Gonçalo Oliveira	12.04.2019

CLIENT:	-	**DRAWN:**	Carla Bastos	**SERVICE:**	Electrical
PROJECT:	PENDERI SOLAR FARM	**VERIFIED:**	Gonçalo Oliveira	**STAGE:**	Development
		DATE:	12.04.2019	**RELEASED BY:**	GED
SITE:		**SCALE:**	1:50	**VOLTALIA**	
DRAWING DESIGNATION:	Security System Pole Layout	**PROJECT Nº:**	SOF01	84 boulevard de Sébastopol	
		FORMAT:	A4	75003 PARIS, France	
		DRAWING Nº:	SOF01_DV_SEC_410_00	Tel: +33 1 81 70 37 00	

Fence e Maintenance Access



Fence Details (Front Elevation)



Section A´A

Scale Bar 1:50

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VERSION	PURPOSE	DRAWN	VERIFIED	DATE
00	Initial version	Carla Bastos	Gonçalo Oliveira	02.04.2019

CLIENT:	-	**DRAWN:**	Carla Bastos	**SERVICE:**	Electrical
PROJECT:	PENDERI SOLAR FARM	**VERIFIED:**	Gonçalo Oliveira	**STAGE:**	Development
		DATE:	02.04.2019	**RELEASED BY:**	GED
SITE:		**SCALE:**	1:50	**VOLTALIA**	
DRAWING DESIGNATION:	Fence Details	**PROJECT Nº:**	SOF01	84 boulevard de Sébastopol	
		FORMAT:	A3	75003 PARIS, France	
		DRAWING Nº:	SOF01_DV_CS_103_00	Tel: +33 1 81 70 37 00	

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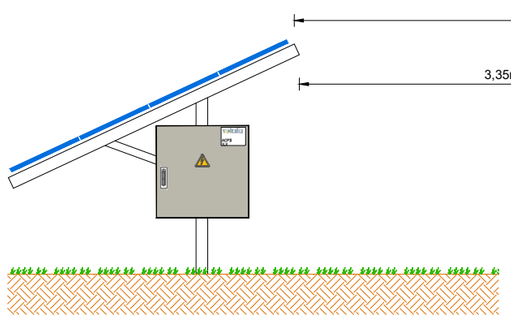
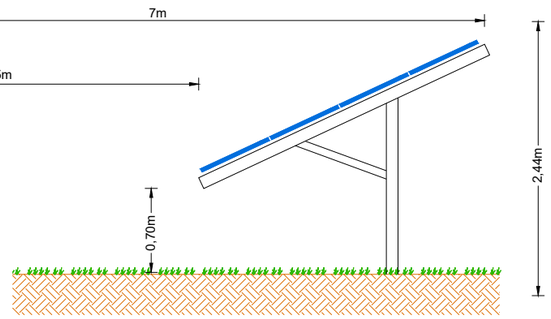
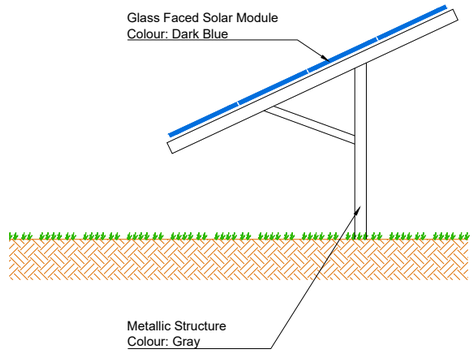
Sections (Typical Table end With Collector Box)



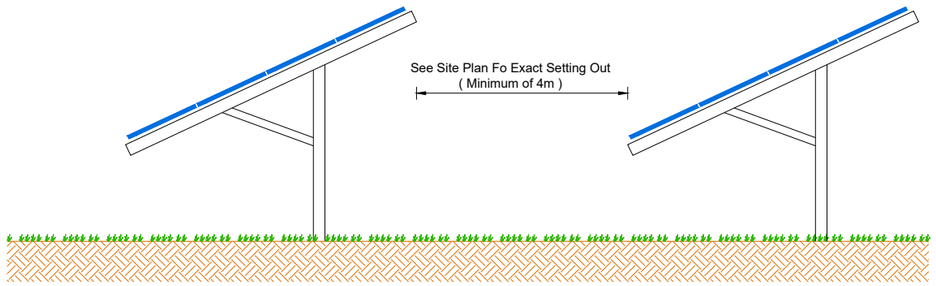
Sections (Typical Intermediate Table)



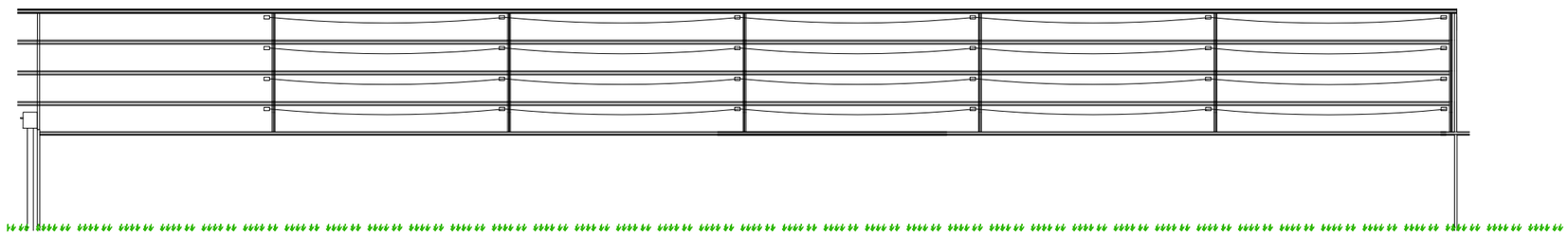
Sections (Typical Table end Without Colector Box)



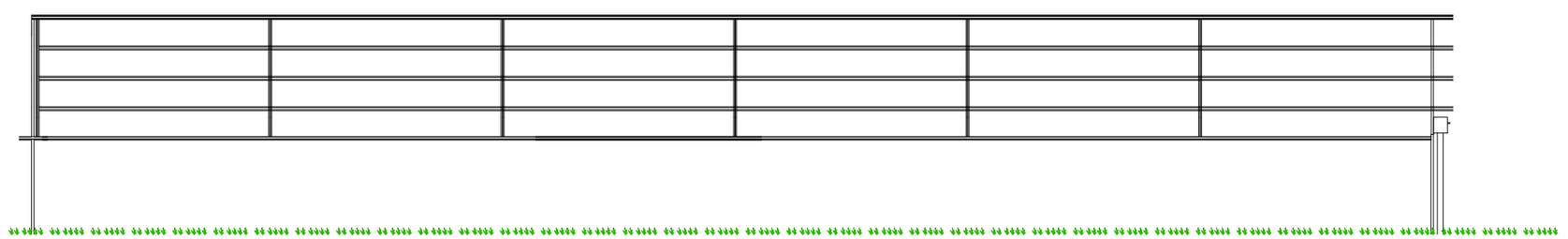
Typical Sections Out



Front Elevation



Rear Elevation



Scale Bar 1:50

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VERSION	PURPOSE	DRAWN	VERIFIED	DATE
00	Initial version	Carla Bastos	Gonçalo Oliveira	02.04.2019

CLIENT:	-	**DRAWN:**	Carla Bastos	**SERVICE:**	Electrical
PROJECT:	PENDERI SOLAR FARM	**VERIFIED:**	Gonçalo Oliveira	**STAGE:**	Development
		DATE:	02.04.2019	**RELEASED BY:**	GED
SITE:		**SCALE:**	1:50	**VOLTALIA**	
DRAWING DESIGNATION:	Mounting Structure	**PROJECT Nº:**	SOF01	84 boulevard de Sébastopol	
		FORMAT:	A3	75003 PARIS, France	
		DRAWING Nº:	SOF01_DV_CS_604_00	Tel: +33 1 81 70 37 00	

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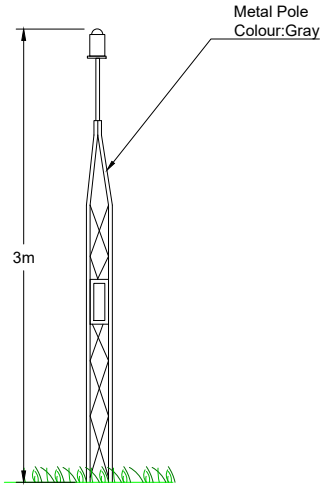
Meteo Station (Elevation)



Scale Bar 1:50

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VERSION	PURPOSE	DRAWN	VERIFIED	DATE
00	Initial version	Carla Bastos	Gonçalo Oliveira	02.04.2019

CLIENT:	-	**DRAWN:**	Carla Bastos	**SERVICE:**	Electrical
PROJECT:	PENDERI SOLAR FARM	**VERIFIED:**	Gonçalo Oliveira	**STAGE:**	Development
		DATE:	02.04.2019	**RELEASED BY:**	GED
SITE:		**SCALE:**	1:50	**VOLTALIA**	
DRAWING DESIGNATION:	Weather Station Layout	**PROJECT Nº:**	SOF01	84 boulevard de Sébastopol	
		FORMAT:	A4	75003 PARIS, France	
		DRAWING Nº:	SOF01_DV_MON_401_00	Tel: +33 1 81 70 37 00	

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