

Entrust Services

Proposed I I 0kV Substation Great Island, County Wexford Traffic Management Plan

December 2023

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December 2023

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LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

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PROPOSED 110KV SUBSTATION GREAT ISLAND, COUNTY WEXFORD TRAFFIC MANAGEMENT PLAN

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I. INTRODUCTION

I.I Background

- 1.1.1 Local Transport Projects Ltd (LTP) has been commissioned to produce a Traffic Management Plan (TMP) in support of a planning application for a proposed 110kV electrical substation and 110kV underground grid connection (UGC) on land at the townland of Great Island in County Wexford.
- 1.1.2 The local planning and roads authority for the site is Wexford County Council (WCC).

I.2 Scope

- 1.2.1 The scope of this report has been agreed with the Client and discussed with WCC Roads (David Murphy), outlined below:
 - Local road assessment Consideration of the local roads, such as posted speed limits, road restrictions, geometry, on-street parking restrictions and any other relevant features of the surrounding road network;
 - Proposed construction programme Summary of the expected stages of the
 proposed construction and the type of vehicles that are likely to access the site
 throughout construction, with an outline of the projected construction traffic
 generation associated with the development;
 - Site access consideration Assessment of the suitability of the proposed access
 route for the site, to include testing the access in terms of swept path analysis and
 visibility splays;
 - *Wider route consideration* Swept path analysis of key sections of the route to/from the regional road network;
 - Road works Consideration of the road works expected to be required in order to accommodate construction traffic movements to/from the site;
 - *Traffic impact assessment* Assessment of the potential impact of the proposed development, based on the proposed construction programme, site access and transportation route;
 - *Traffic management measures* Outline of appropriate traffic management measures to be implemented at the site during construction; and
 - **Conclusions** Conclusions on the likely impact and suitability of the proposed scheme in transport terms.
- 1.2.2 This TMP has been informed by on-site observations by LTP in September 2023, including a review of the access junction/route.



2. SITE LOCATION & DEVELOPMENT DETAILS

2.1 Site Location

2.1.1 The proposed development site covers 2.58 hectares in the Great Island townland. The greenfield site is bound by the Rosslare-Wexford railway line to the north, a private access track to the east (the site would not connect with this access track), with the under construction Greenlink UK-Ireland Interconnector (see Section 2.3) to the south, and the wider Great Island Power Station site to the west. The River Barrow Estuary is located a short distance further to the west of the site. The boundary of the site is shown in Appendix 1.

2.2 Development Proposals & Access Arrangements

- 2.2.1 The proposed development comprises a 110kV tail-fed electrical substation to support the import and export of power, with an UGC (Underground Grid Connection). The proposed substation is to connect to an existing 110kV Eirgrid substation within the wider SSE Power Station at Great Island. The substation proposals include elements such as transformers and a generator. The proposals represent Strategic Infrastructure Development (SID) and is therefore to be submitted directly to An Bord Pleanála (ABP).
- 2.2.2 A site plan for the scheme is attached as Appendix 1.
- 2.2.3 A separate planning application (Ref: 20231294) was submitted to WCC in October 2023 for a 38kV substation and BESS (Battery Energy Storage System) on adjacent land that would share the same vehicular access. A separate TMP was produced for the 38kV scheme (LTP, 2023), although this TMP for the 110kV substation is very similar, with the main difference being the requirement to deliver abnormal loads for the 110kV substation, as assessed in this TMP.
- 2.2.4 The temporary construction compound serving the full development would be located on the site, accessed via an existing 6m wide private access road to the west of the site, which forms a connection with the L4033. The temporary compound would be removed after construction of the scheme. This existing access currently serves the adjacent Greenlink Interconnector facility to the south of the site, which is under construction currently and is discussed further in Section 2.3, with a spur to the Greenlink Interconnector private access road proposed to serve the proposed scheme. The routing for deliveries is outlined in Section 3.2.





Photo 1: Existing Site Access

- 2.2.5 It is understood that the site will also accommodate a temporary on-site car park for staff/operatives during construction. A wheel-wash within the compound has also been included. Further details are outlined in the Construction Environment Management Plan (CEMP) submitted in support of the application.
- 2.2.6 During the lifetime of the development, it is expected that site would only be visited a small number of times a year for maintenance purposes. These trips are expected to be single trips by cars or small vans (Light Commercial Vehicles LCVs). Therefore, the proposed long-term use of the site would be expected to generate a negligible number of trips, as discussed further in Section 4.3.
- 2.2.7 The design and implications of the grid connection/cabling for the proposed scheme are not considered within this TMP and instead are covered by the work of other specialists within the Applicant's design team. That said, it is understood that all of the proposed cabling would be on private land across the wider Great Island Power Station site, not via public roads.

2.3 Planning History

2.3.1 As discussed, in Section 2.2, a separate planning application (Ref: 20231294) was submitted to WCC in October 2023 for a 38kV substation and BESS (Battery Energy Storage System) on adjacent land that would share the same vehicular access. A similar BESS and substation scheme was previously approved by WCC on that site in July 2018 (Ref: 20180506), subject to planning conditions, including for a contribution to local road improvements:



- "6. The Developer shall pay to Wexford County Council a contribution in respect of works, consisting of the provision or improvement of the public roads in the functional area of the Planning Authority. The contribution shall be payable at the time of commencement of development and the amount shall be thirty four thousand, five hundred euro (\leq 34500) as stated in Appendix 1 of this document."
- 2.3.2 Access for the previously approved BESS scheme to the public road network is via the existing site access to the west, and the L4033 route to/from the R733. However, it is noted from the Environmental Report for the application (MER, 2018) that the wider route to/from the N25 and Rosslare Port utilises local roads that connect with the N25 at Ballinaboola, which is circa 10km east of the R733/N25 junction, as shown in Figure 1 below:



Figure 1: Previously Approved BESS Scheme HCV Routing

Source: MER, 2018

- 2.3.3 This wider route would not be utilised by the proposed development, although the site access and use of the L4033 to travel to/from the R733 is the same as this previously approved route, as discussed in Section 3.2.
- 2.3.4 A Greenlink Interconnector facility by Siemens that will provide an energy link between Ireland and the UK (at Pembrokeshire in Wales) was approved by ABP for the site to the south of the proposed development in June 2021 (Ref: 308906). This facility is currently under construction, and the proposed scheme would share the same vehicular site access that connects with the L4033 to the west.



2.3.5 The Environmental Impact Assessment Report (EIAR) (ARUP, 2020) for the submission states that "[i]t has been assumed that all construction traffic will access the site from the north as this is the only land access route. The volumes of traffic on the R733 at this location are relatively low, with the local road volumes lower again. The increases in the peak hours will be extremely low, relating primarily to deliveries and traffic associated with the cable route construction rather than construction worker arrivals and departures". The EIAR goes on to clarify the route, with the indicative HCV routing plan reproduced in Figure 2 below:

"Most of the material to be delivered to site will travel via the N25 from the wider motorway network (the M9 at Waterford or the M11/N11 at Wexford), from Belview Port or from Rosslare Harbour for specialist component parts. Some specialist components may be delivered via the Great Island CCGT temporary berth." (ARUP, 2020)

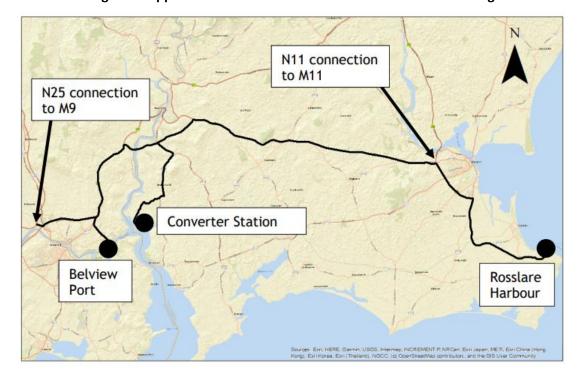


Figure 2: Approved Greenlink Interconnector Scheme HCV Routing

- 2.3.6 As is the case for the proposed 110kV substation, the Greenlink Interconnector scheme will require the transportation of abnormal loads, although unlike the proposed 110kV substation, these would not be transported by road, as outlined in the extract below:
 - "Several specialist component parts will require delivery to site. The largest individual pieces of equipment are expected to be the transformers, which will have maximum dimensions of $8.5m \times 5m \times 5m$, with a 5m height for transport. The transformers will be transported to site on specialist vehicles, either by road, or by sea." (ARUP, 2020)



2.3.7 The above referenced previously approved BESS scheme (Ref: 20180506) was accounted for as a committed development in the Greenlink Interconnector EIAR assessment of cumulative development (ARUP, 2020), and therefore it is reasonable to consider that the impact of a BESS scheme on the adjacent site alongside the Greenlink Interconnector has already been assessed and agreed. That said, it is recognised that construction of the Greenlink Interconnector, which is already underway, may be fully complete before the adjacent BESS scheme construction commences (if it is approved by WCC), in which case there would be no cumulative impact. Even if there is some overlap, then the low traffic generation of the schemes means that there is not expected to be a significant cumulative traffic impact.



3. CONSTRUCTION TRAFFIC ROUTE

3.1 Construction Vehicle Details

- 3.1.1 Parts of the construction process will require the movement of material and components to and from the compound using Heavy Commercial Vehicles (HCVs), including articulated lorries and standard rigid vehicles. However, abnormal loads are also expected to be transported to/from the site, therefore there is a requirement for movements by Abnormal Indivisible Load Vehicles (AILVs) associated with the proposed scheme construction.
- 3.1.2 In addition to the above, standard skip vehicles associated with the delivery/removal of materials and a number of smaller vehicles are expected to be used during the construction period. These are typically expected to be commercial vans and belong to members of the building trade (e.g. electrical/plumbing contractors).

3.2 Proposed Traffic Routing

- 3.2.1 As discussed with WCC Roads (David Murphy), all HCV and AILV movements associated with deliveries arriving and travelling to the site would access the site via N25 R733 L4033 Private Site Access.
- 3.2.2 All HCVs and AlLV movements associated with deliveries departing and travelling away the site would egress the site via the reverse route, via Private Site Access L4033 R733 N25.
- 3.2.3 The proposed construction traffic routing is highlighted in blue in Figure 3, with the approximate compound location indicated by a yellow star. All construction vehicle drivers are to be made aware of the identified access/egress route.

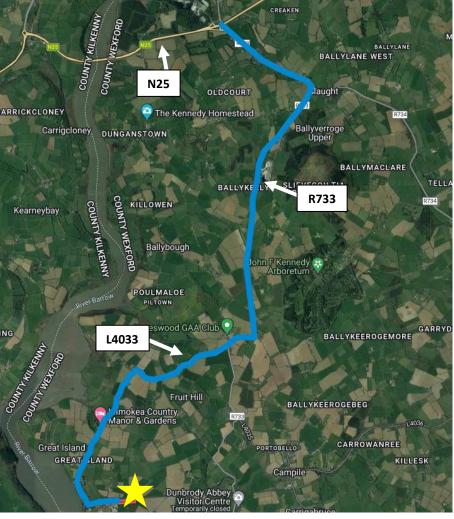


Figure 3: HCV & AILV Construction Traffic Routing

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- 3.2.4 There is no alternative route to/from the public road network for the site other than the L4033, and in turn, there is no alternative to using the L4033 to access the wider regional road network, via the R733 to the north-east of the site. However, it is acknowledged that this route has been an established route for many years serving small and large vehicles associated with Great Island Power Station, also with approval in more recent years to serve the adjacent Greenlink Interconnector and a previous BESS scheme on the site (Ref: 20180506), as discussed in Section 2.3. It is therefore considered that this proposed route is also suitable to serve the proposed development, particularly as the scheme would not generate any abnormal load movements.
- 3.2.5 It is acknowledged that there is not a requirement to reassess access junction visibility or HCV vehicle tracking along the access route, given that the access junction and wider HCV route were approved for the Greenlink Connector.



- 3.2.6 As agreed with WCC Roads (David Murphy), vehicles are to travel via the R733 in order to connect with the national road network via the N25 to the north, rather than the route that was agreed for the previous BESS consent (Ref: 20180506), which proposed to utilise the load roads to the north-east that connect with the N25 at Ballinaboola.
- 3.2.7 It is understood that there are not any signed restrictions (e.g. weight or height restrictions) which restrict construction vehicle movements on the identified route. As discussed with WCC Roads (David Murphy), it is acknowledged that there may be a structural weight limitation on the L4033 causeway to the north of the site, and although confirmation on the findings of a structural assessment from WCC are awaited at the time of writing, it is understood that any vehicles with less than 12 tonnes on each axle are expected to be accommodated without concern. Also, it is recognised that there is existing signing to advise HGV/HCV drivers to "give way to oncoming traffic already on causeway".
- 3.2.8 Effective management of delivery scheduling and holding of vehicles in the site compound is expected to sufficiently mitigate against conflicts of delivery vehicles arriving/departing at the site. All relevant parties involved in making deliveries to the site will be instructed on these restrictions. Additional traffic management is identified within Section 5 which should be implemented to further reduce potential conflicts with vehicles associated with the development.

3.3 Swept Path Analysis

- 3.3.1 Swept path analysis of the AILV has been undertaken at locations where the existing road layout is more constrained between the proposed site compound location and the R733, see Appendix 2, utilising scaled aerial imagery in order to assess the viability of the route.
- 3.3.2 Deliveries to/from the site are expected to be mainly made by articulated HCVs. Whilst the exact size of delivery vehicles to be used during the site's construction are currently unknown, based on previous experience of similar solar PV array sites, it is anticipated that the largest vehicle to access the site would measure approximately 16.5m in length. As discussed in Section 3.1, there would also be a small number of AILV deliveries to the site, therefore the movements of AILVs along the construction route has been tested.
- 3.3.3 The swept path analysis shows that the largest vehicles to access/egress the site can do so via the proposed construction traffic route, without any overrun beyond the extents of the carriageway.
- 3.3.4 The swept path analysis considers the movements of vehicles on the public roads, and at the proposed access junction. It is acknowledged that the detailed design of the internal access tracks for the site (i.e. off the public roads) will ensure that the largest vehicles can manoeuvre along the private tracks (where required) without overrunning beyond the extents of the track.



3.4 L4033

3.4.1 The only part of the route between the site compound and the regional road network that utilises the local road network is via the L4033, which is a two-way single carriageway that generally can accommodate two-way passing vehicles. The L4033 connects with the regional road network via a simple priority T-junction with the R733 approximately 5km north-east of the site access.



Photo 2: L4033

3.5 R733

3.5.1 The R733 is a regional road that forms a two-way single carriageway that can accommodate two-way vehicle movements. The R77 connects with the national road network via the N25 (south of New Ross) circa 7.4km north of the L4033 junction.



Photo 3: R733 (adjacent to the L4033 junction)



4. TRAFFIC MOVEMENTS

4.1 Construction Programme

- 4.1.1 It is understood that the planned construction works would be undertaken over a continuous period, split into three main phases:
 - · Preparation;
 - Construction/installation; and
 - Cabling, commissioning and testing.
- 4.1.2 During these periods, there would be trips associated with the arrival and departure of construction staff, as well as the delivery of parts and construction materials.

4.2 Volume of Construction Vehicle Movements

- 4.2.1 The volume of construction traffic movements at the site is currently unknown, although the proposals are not expected to have a significant traffic impact on the public roads, particularly in the context of the larger traffic generation associated with the approved Greenlink Interconnector (Ref: 308906).
- 4.2.2 The proposed delivery scheduling and vehicle holding strategy to be implemented at the site would act to reduce the frequency of HCV movements, and deliveries are to be restricted so not to occur during local road network peak periods (see Section 5.2). It is also noted that any trips generated during the construction phase are temporary and would cease upon completion of works at the site.
- 4.2.3 Car sharing amongst staff is also to be promoted at the site and is expected to form a realistic travel mode for those staff employed by the same company and therefore the number of staff vehicle movements is expected to be significantly lower than the number of operatives on-site.
- 4.2.4 Staff vehicle movements would typically occur at the start and end of the working day and generally not coincide with the movement of large vehicles. In addition, staff vehicle movements are expected to be tidal (i.e. towards the site in the morning, away from the site in the afternoon).

4.3 Post-Construction

4.3.1 Once the development is operational it is anticipated that the development would be visited only a small number of times a year for maintenance purposes. These trips will be typically made by cars or small vans. While the temporary construction compound will be removed following construction completion, space will be retained on-site for LCVs to turn around, ensuring vehicles can enter and exit in a forward gear. No staff directly associated with the development will be based at the site.



5. TRAFFIC MANAGEMENT MEASURES

5.1 Introduction

5.1.1 The expected vehicle trip generation is expected to be relatively low (as identified in Section 4), although a number of traffic management measures are proposed to reduce the impact during the construction period, as outlined below.

5.2 Measures to Reduce Peak Period Traffic Movements

5.2.1 The time of deliveries to the site are to be limited in order to ensure that construction activities at the site do not adversely impact on network operation during peak periods. Limiting the time of site deliveries will also protect residential amenity for people living in properties close to the site.

5.3 Measures to Reduce Conflict & Cumulative Impact

- 5.3.1 A banksman will be available on-site at all times of construction to coordinate the movement of vehicles. This will ensure that two large vehicles do not attempt to use the site access at the same time and therefore ensure that safety on the public roads is not compromised. A daily delivery sheet will also be used to coordinate deliveries to the site, in order to avoid vehicles arriving simultaneously, and the schedule is to be provided on a weekly basis to the construction supply chain so to mitigate against conflicting construction vehicle movements along the proposed delivery route, with vehicles also held at the site if required.
- 5.3.2 The project promoters are and have been in regular correspondence with the Greenlink/Siemens construction team, including regular meetings with Mr James Treanor (Siemens site manager), as there is a shared access road between both projects. A detailed coordination protocol is in place to avoid overlapping of over sized or heavy trafficked periods on the shared access and local road networks. It is also the promoters' understanding that the majority of the heavy vehicle traffic associated with regards the Greenlink/Siemens construction works will be completed by Q1 2024. The proposed development is not due to commence construction until Q2/Q3 2024 therefore, no major overlapping is envisaged at this point.

5.4 Parking Arrangements & Manoeuvring Facilities

- 5.4.1 Staff are likely to travel to the site in cars or small vans and these trips would typically occur at the start and end of the working day and therefore not coincide with the movement of large vehicles. As previously outlined, car sharing amongst staff is to be promoted at the site and expected to form a realistic travel mode for those staff employed by the same company.
- 5.4.2 It is expected that adequate parking provision will be provided in order to accommodate all operatives on-site. As such, an adverse impact on the operation of the surrounding road network is not envisaged. As previously mentioned, further details regarding the proposed parking arrangements are outlined in the CEMP also submitted in support of the application.



5.4.3 It is also anticipated that the internal compound area is to be arranged in such a way that all delivery vehicles will be able to suitably enter and exit the site, with adequate driver visibility provided at all times.

5.5 Measures to Protect Pedestrians

5.5.1 The rural location of the site means that the construction is unlikely to impact pedestrians, however temporary signing/barriers will be provided to safeguard pedestrians where necessary. Furthermore, and as previously outlined, a banksman will direct large vehicles in and out of the site and therefore ensure that pedestrians are adequately protected within the vicinity of the access. Local roads within the immediate vicinity of the site will also receive regular sweeping to ensure that any debris is cleared.

5.6 Storage of Materials

5.6.1 All plant and construction materials are to be securely stored within the site compound when not in use and therefore will not adversely affect the operation of public roads. As much waste as possible is to be recycled and where possible vehicles delivering materials to the site will leave with waste.

5.7 Cleansing Methodology

5.7.1 A suitable cleaning methodology, such as wheel wash facilities, is to be employed at the site to reduce the risk of mud/dust/dirt being transported to public roads, with further details on the wheel wash equipment provided in the CEMP.

5.8 Traffic Signing Strategy

- 5.8.1 It is recommended that a suitable temporary signing strategy be implemented to facilitate safe access to/from the site for heavy vehicles associated with the development. It is also recommended that suitable temporary signing is provided in advance of the site accesses in order to warn other road users of the likely presence of construction vehicles making turning movements in the vicinity of the development.
- 5.8.2 The temporary signing strategy would be subject to WCC Roads approval and be installed prior to the commencement of works at the sites and maintained as necessary for the duration of the works. All signing will be in accordance with Ireland's 'Traffic Signs Manual Chapter 8: Temporary Traffic Measures and Signs for Roadworks' (DfTTS, 2019).



6. REFERENCES

ARUP (Ove Arup & Partners Ireland Ltd), 2020. Environmental Impact Assessment Report – Ireland: Onshore.

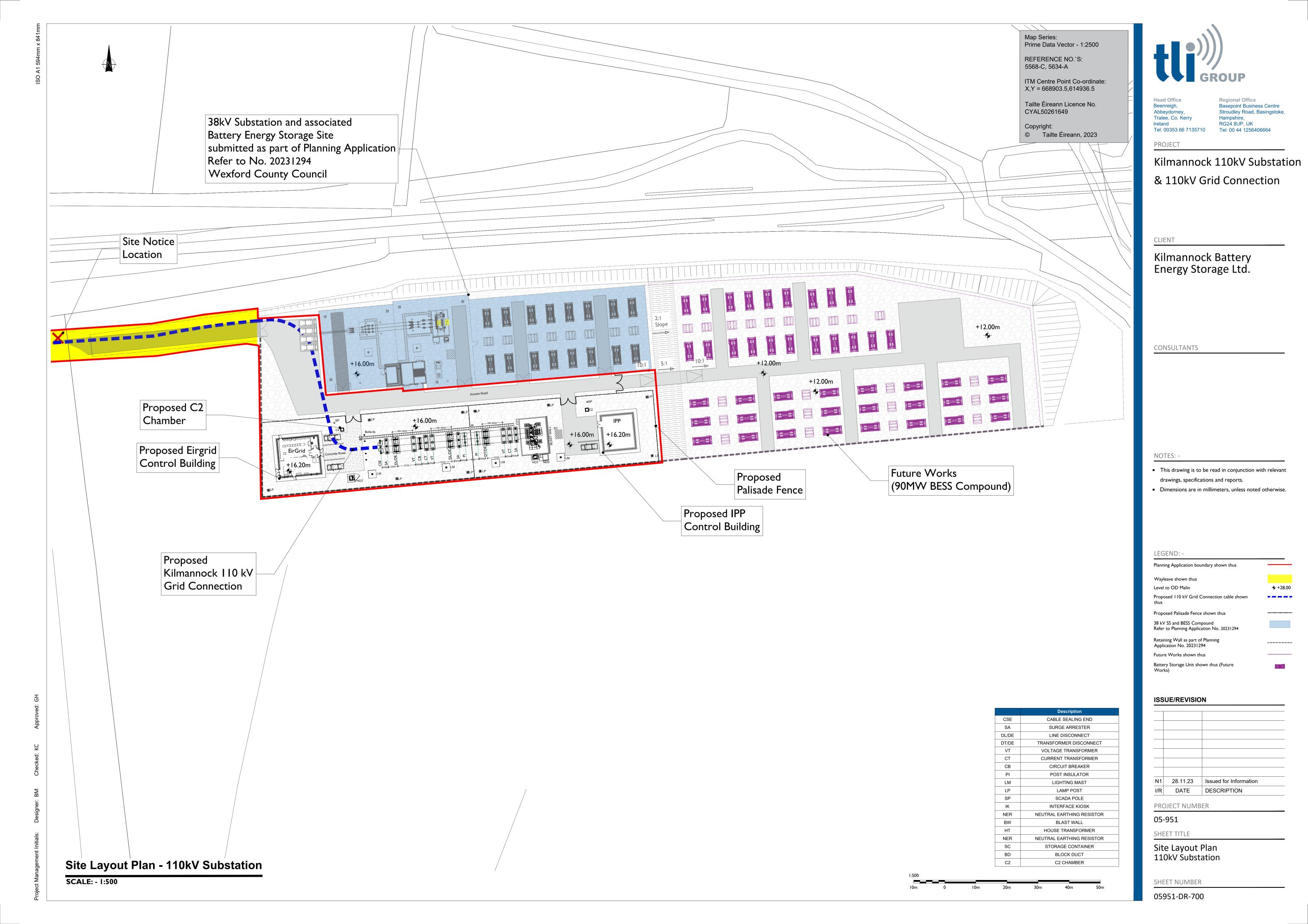
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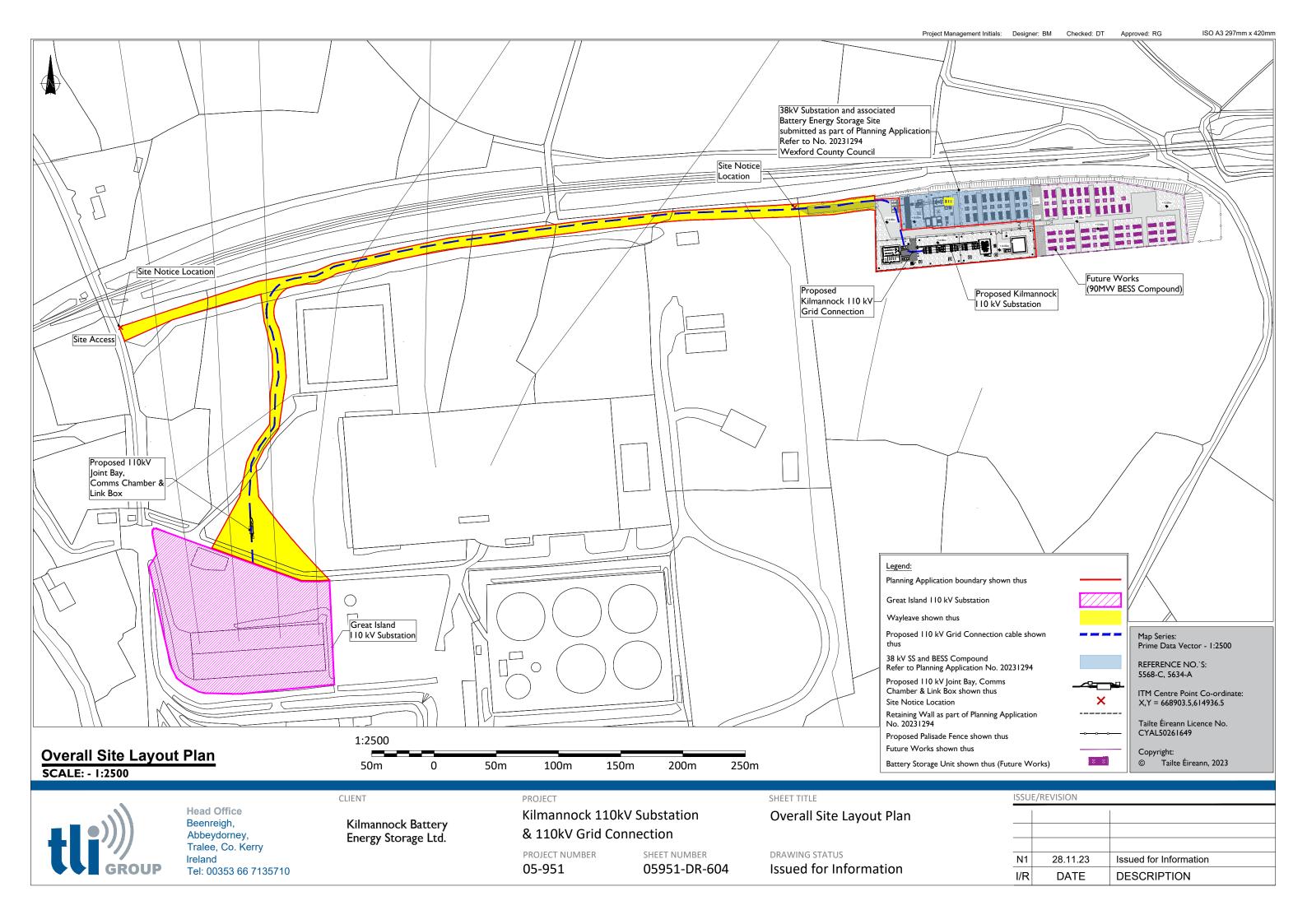
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Appendix I – Proposed Site Layout Plan







Appendix 2 – Swept Path Analysis





