Construction Traffic Management Plan for Battery Energy Storage System (BESS) and Associated Infrastructure.

Land North of Rayleigh Spur Roundabout, Basildon.

On behalf of Renewable Energy Systems Ltd.

Date: June 2025 | Pegasus Ref: P24-3044-R002v2 CTMP

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Document Management.

Version	Date	Author	Checked/ Approved by:	Reason for revision
0	June 2025	AJ	JK/KE	First Draft
1	June 2025	AJ	JK/KE	Client Comment
2	June 2025	AJ	JK/KE	Client Comment

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1. Introduction

1.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of RES (the Applicant) to accompany an application for the installation of a battery-energy storage system (BESS) on land north of Rayleigh Spur Roundabout, Basildon. The description of development proposal is as follows:

"Installation of an energy storage facility including battery enclosures, power conversion units, transformers, substations, grid connection infrastructure, vehicular access and associated works."

1.2. This CTMP considers and addresses, where appropriate, the traffic and transportation matters associated with the construction and operation of the Battery Energy Storage System (BESS). BESS are devices that enable energy excess to be stored and then released when the power is needed most, rather than being lost.

1.3. The application site comprises of approximately 18.27 hectares of predominantly agricultural land. The Local Highway Authority (LHA) is Essex County Council (ECC). The site location is provided in the submitted Location Plan (Drawing ref: 05560-RES-MAP-DR-XX-001 Rev 1) provided in **Appendix A**, and an aerial image of the site location is shown in **Plate 1.1**.

Plate 1.1 – Site Location Plan

Source: Google Maps (annotated by Pegasus Group)

1.4. The development comprises three phases:

- Construction and installation
- Operation and ongoing maintenance
- Decommissioning and removal of equipment and obsolete infrastructure.

1.5. The construction phase is considered to have the greatest impact in terms of transport.

1.6. This first phase includes and enabling highway access construction and/or modification works. Plant and bulk materials will be transported to site and has the potential to increase traffic on the construction traffic route. It should be noted however the construction effects are short lived and will be managed to limit the potential for local disruption.

1.7. The operational phase of the BESS is expected to last for up to 40 years. After this period, all components of the development will be removed, and the site will be decommissioned and restored following a decommissioning strategy (phase 3).

1.8. Access to the BESS site during the construction phase is proposed to be taken from the existing agricultural access located on the A1245 slip road onto Southern Arterial Road, A127. Construction vehicles will operate a one-way system leaving the site to the south onto the A1245, or the A130 or to the west onto the A127.

1.9. The operational and maintenance phase is restricted to infrequent maintenance operations which generate very low volumes of traffic that are not considered to be in excess of daily traffic variation levels on the surrounding highway network.

1.10. Operational access for infrequent small vehicles is proposed to be provided from the same retained agricultural access with egress proposed to the west via the internal track and the existing access to the A127 which also serves the neighbouring properties, circa 95m west of the A130 overbridge.

1.11. This CTMP is advised following a detailed desk study and a site visit undertaken on 13 March 2025, and supports the proposal for the construction and, to a lesser extent, the operation of a BESS and associated infrastructure.

Scoping

1.1. Pre-application advice has been sought from the Local Highway Authority, Essex County Council throughout 2025, commencing at the end of January. A meeting was undertaken with the Planning Authority and ECC Highways and then a second highways specific meeting with ECC Highways and including the Project Manager for the Fairglen Interchange Scheme, both on 10 February 2025.

1.2. It was agreed during the meetings that a CTMP would be the appropriate Transportation report to support the planning application.

1.3. The Fairglen Interchange Scheme is due to start on site in August 2025 and with a two-year construction period will be complete well in advance of the proposed development scheme scheduled for circa winter 2029.

1.4. It was agreed to share construction programmes and scheme details for Fairglen Interchange and for the developer to continue to collaborate and engage with ECC Highways as the development proposals evolve and the programme commences towards a start on site updating the CTMP accordingly as the overarching traffic management document.

1.5. At the time of writing, we continue to engage with ECC to develop and agree the final construction site egress option.

Report Structure

1.6. Following this introduction this CTMP describes the arrangements that are proposed for the period of construction activities at the site and sets out the following:

Section 2 – Site Characteristics

Section 3 – Development Proposals and Access

Section 4 – Construction Traffic Routing

Section 5 – Vehicle Trip Attraction

Section 6 – Proposed Mitigation Measures

Section 7 – Summary and Conclusion

1.7. It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines as appropriate, in relation to construction and construction traffic activities.

1.8. The appointed contractors will be provided with a copy of this CTMP and will adhere to it as part of the consent. The CTMP will form part of the information provided as part of the construction personnel's on-site induction processes. The contact details of the contractor and those of the highway department at ECC will be exchanged before commencement of the works on the site.

2. Site Characteristics

Location and Site Context

2.1. The application site covers approximately 17.9 hectares of existing agricultural land and is located on lands east of Basildon, Essex. The site is bound by roads forming part of the UK's Major Road Network, with the A127 located to the north, the A1245 to the east and south and the A130 to the west.

2.2. The site location in context to the local highway network is shown on **Plate 2.1** below.

Plate 2.1 – Development Site, Local Highway Context

Source: Google Maps (annotated by Pegasus Group)

Local Highway Network

A1245

2.3. Access to the site is taken from the A1245 slip road to the A127 at Fairglen Roundabout, via the existing agricultural access to be retained.

2.4. The A1245 borders the eastern frontage and extends approximately 5.8 kilometers (km) northward from Rayleigh Spur to Rettendon Roundabout, connecting the A127/A130 Fairglen Interchange with the A130 near Rettendon.

2.5. This route is dual carriageway outside the site and north to Rawreth, continuing as single carriageway. It crosses the Great Eastern Main Line (London to Southend) railway, and bypasses Battlesbridge before culminating at the Rettendon Roundabout.

2.6. To the north, the road forms the 'Fairglen roundabout Interchange' junction with the A127 before continuing north towards Rawreth and Battlesbridge. To the south, the A1245 forms the Rayleigh Spur Roundabout junction with the A130. The A1245 is subject to national speed limit of 70mph, with the exception of the left-hand slip road joining onto the A127 which is subject to a 50mph speed restriction.

A127

2.7. The A127 is a dual carriageway bordering the site's northern frontage and travels in an east to west direction. To the east, the road provides access onto the A1245 via the Fairglen Interchange and continues on towards Southend-on-Sea. To the west, the A127 provides access to the A12 and M25. The road is subject to a 50mph speed restriction

2.8. There is a shared footway/cycleway located to the south of the carriageway in the vicinity of the development site.

A130

2.9. The A130 runs roughly north to south, connecting Basildon in the south with Chelmsford and the A12 to the north. The A130 passes through and over the site and runs along the western frontage of the main parcels of land in which the BESS scheme is proposed to be situated.

2.10. The A130 is a dual carriageway which is mostly bounded by agricultural fields along its length.

Highway Safety

2.11. A highway safety review has been undertaken using Personal Injury Collision (PIC) data obtained from ECC's Online Collisions Map, with the most recent data publication at the time of writing being on 01/04/2025.

2.12. Collision data has been interrogated for the most recent available period from 01/03/2020 to 28/02/2025. While this does not constitute a full five-year dataset, it represents the complete extent of data currently available. Nonetheless, the timeframe is considered sufficient to identify any existing trends or patterns in recorded collisions.

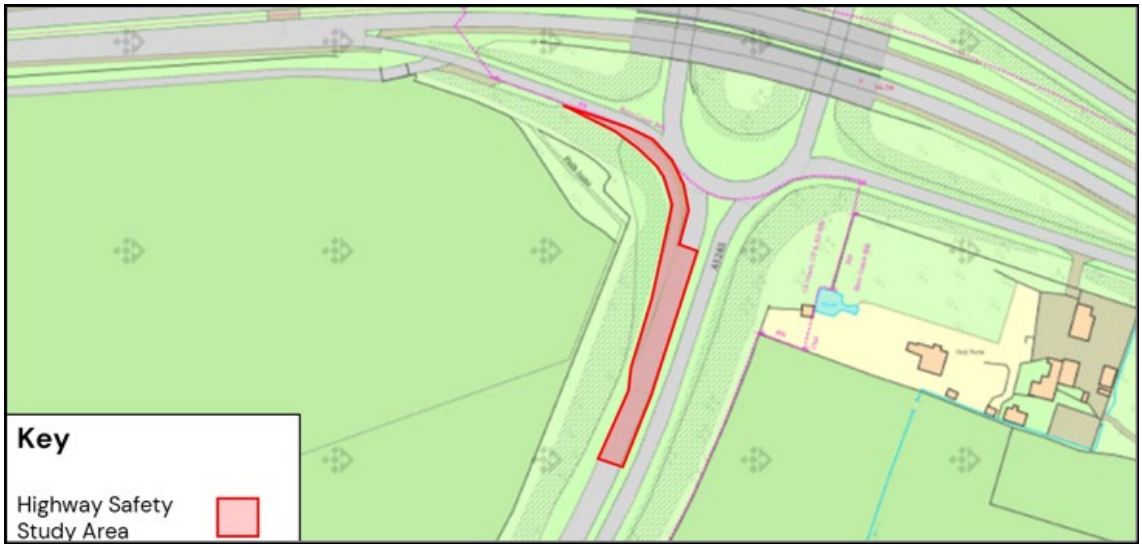
2.13. The study area is split into four key areas:

- The nearby vicinity of the site ingress from the existing agricultural access, located on the A1245 left lane slip road onto the A127;
- The area surrounding the northern site egress option onto the A127;
- The area surrounding the southwestern site egress option egress onto the A130 left slip; and
- The area surrounding the southeastern egress option onto the A1245 .

Site Ingress - A1245 left lane slip road onto the A127

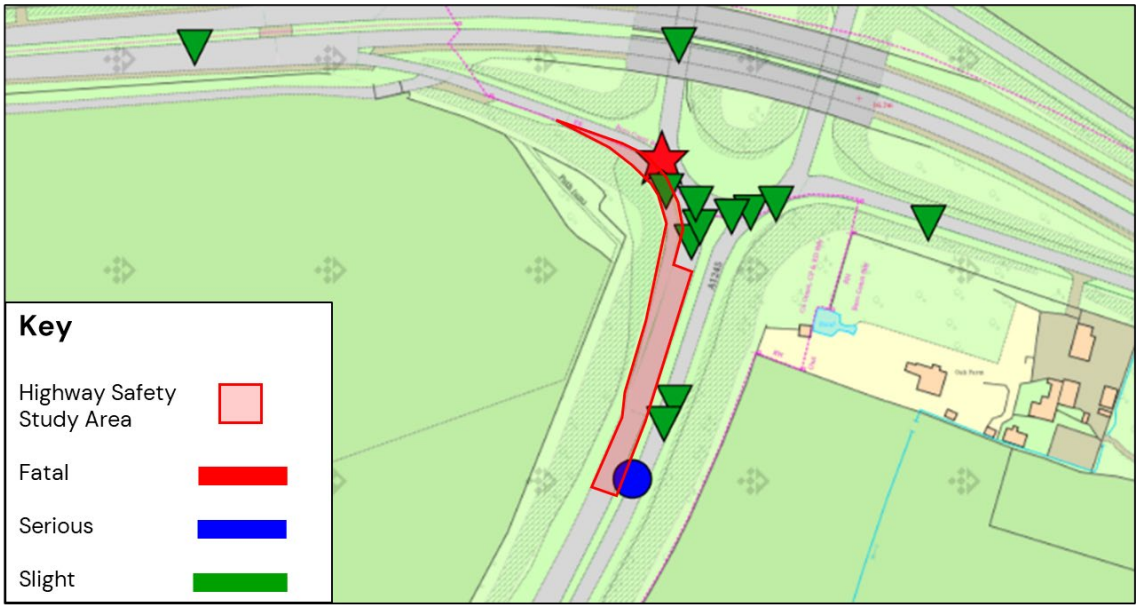
2.14. As the Site ingress is taken from the A1245's left lane slip road, it is considered that only this slip road is relevant for the highway safety review and the study area is therefore illustrated in **Plate 2.2** with the results shown in **Plate 2.3** below.

Plate 2.2 – Site Ingress Highway Safety Study Area



Source: Extract of ECC's Collision Map[1] (14/04/2025)

Plate 2.3 – Site Ingress PIC Location Plan



Source: Extract of ECC's Collision Map[2] (14/04/2025)

[1] ECC's Interactive Collision Map – Displaying Collisions between 28/02/2021 and 28/02/2025, Collision data published 01/04/2025.

[2 and 3] ECC's Interactive Collision Map – Displaying Collisions between 28/02/2021 and 28/02/2025, Collision data published 01/04/2025

2.15. **Plate 2.3** shows that there were only two collisions recorded within the study area over the entire five-year period assessed.

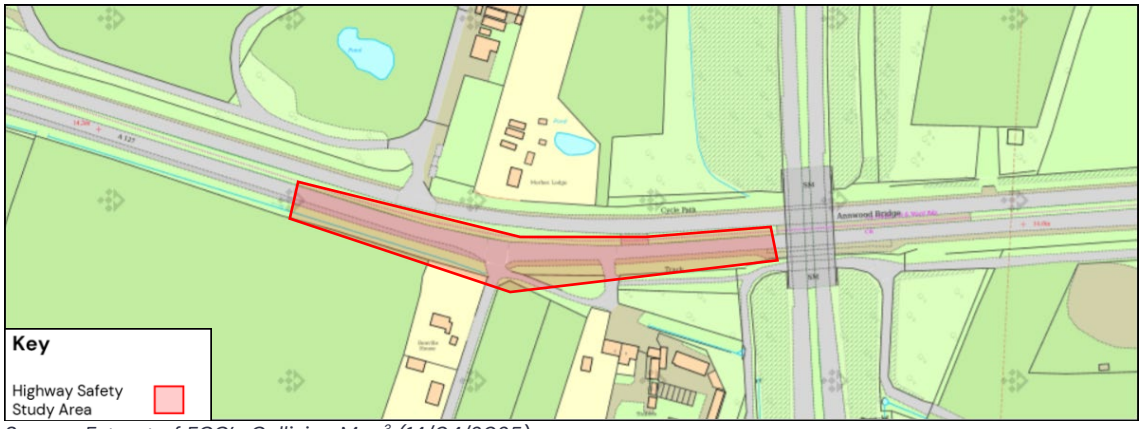
2.16. It should be noted that other identified incidents were located on the wider local highway network and not located in areas that could otherwise be potentially impacted by construction traffic associated with the scheme.

2.17. There was a fatal incident recorded in July of 2023 and a second slight incident which occurred in January 2025, 49 metres from the end of the slip road where it joins onto the A127. The incident involved two vehicles and resulted in one casualty. No further information is provided.

Northern Site Egress onto A127

2.18. The northern site egress option forms a junction with the A127, therefore as part of the highway safety assessment, an area either side of this junction on the westbound lane of the dual carriageway has been considered for assessment, with this area being shown on **Plate 2.4** below.

Plate 2.4 – Northern Site Egress Highway Safety Study Area



Source: Extract of ECC's Collision Map[3] (14/04/2025)

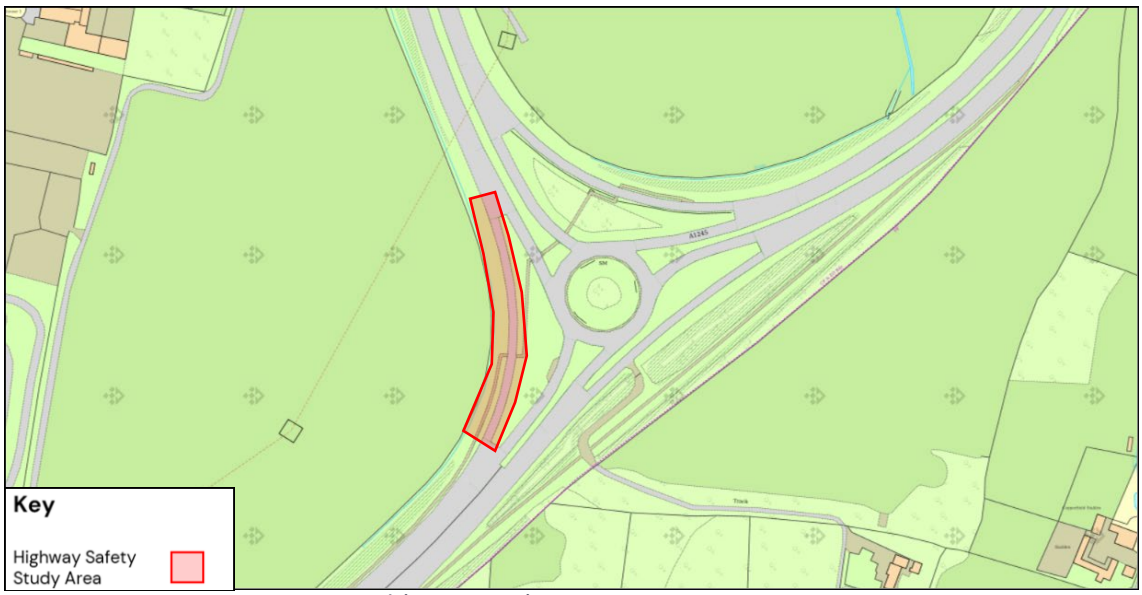
2.19. There have been no recorded incidents within the study area for the most recent five years of data available.

Southwestern Site Egress Option onto A130

2.20. The southwestern site egress option forms a junction with the A130 left slip lane, therefore the study area for the highway safety review comprises an area either side of the proposed egress location on the left slip lane (which bypasses the Rayleigh Spur roundabout for left-turning A130 traffic), as shown on **Plate 2.5** below.

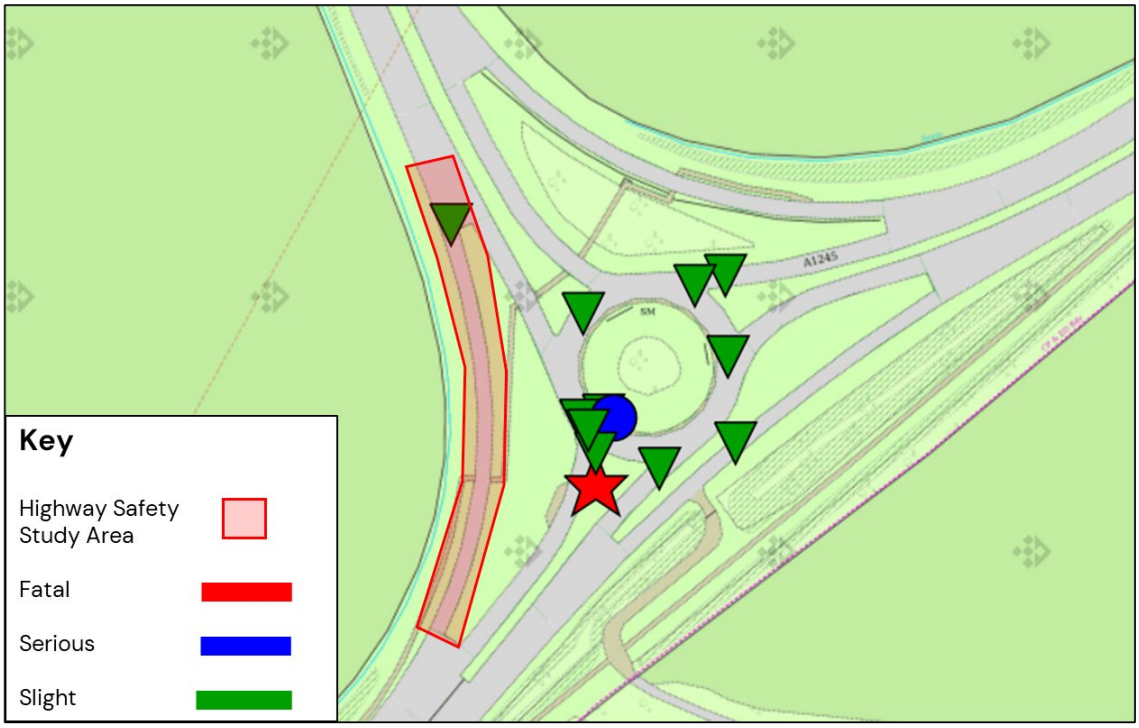
2.21. The resultant recorded PIC are shown on **Plate 2.6**.

Plate 2.5 – Southwestern Site Egress Highway Safety Study Area



Source: Extract of ECC's Collision Map[4] (19/06/2025)

Plate 2.6 – Southwestern Site Egress Option PIC Location Plan



Source: Extract of ECC's Collision Map[5] (19/06/2025)

[4 and 5] ECC's Interactive Collision Map – Displaying Collisions between 28/02/2021 and 28/02/2025, Collision data published 01/04/2025.

[5 and 5] ECC's Interactive Collision Map – Displaying Collisions between 28/02/2021 and 28/02/2025, Collision data published 01/04/2025.

2.22. **Plate 2.6** shows that there was only one collision recorded within the study area over the entire five-year period assessed.

2.23. The single incident was classified as slight and occurred in September 2023, at the point where the slip road joins onto the A130. The incident involved three vehicles and resulted in one casualty. No further information is provided.

2.24. It should be noted that other recorded incidents took place on the wider local highway network, outside the proposed construction route, and therefore are unlikely to be affected by construction traffic associated with the scheme.

Southeastern Site Egress Option onto A1245

2.25. The southeastern site egress option forms a junction with the A1245, therefore the study area for the highway safety review comprises an area either side of the proposed egress location on to the northbound lane of the dual carriageway, as shown on **Plate 2.7** below.

Plate 2.7 – Southeastern Site Egress Highway Safety Study Area

Source: Extract of ECC's Collision Map[6] (19/06/2025)

2.26. There have been no recorded incidents within the study area for the most recent five years of data available.

Summary

2.27. Across the four study areas, the data recorded highlights that there were only three incidents in total; one fatal incident and two slight incidents.

2.28. The identified incidents occurred in different years (2023 and 2025) and across different locations, therefore highlighting the infrequency of accidents across the study

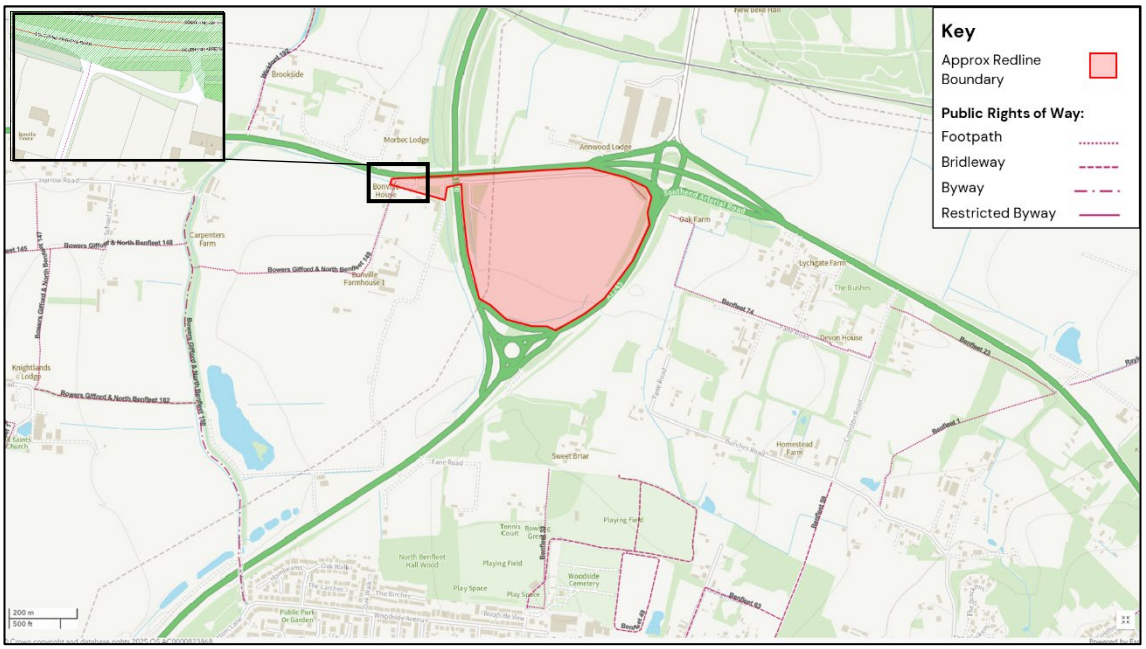
areas.

2.29. In view of the very infrequent incident rate, the data does not indicate any inherent highway safety concerns likely to be exacerbated by the development proposals.

Public Rights of Way (PRoW)

2.30. **Plate 2.8** below illustrates the public rights of way (ProW) in the vicinity of the site. The majority of the PRoW are located well away from the site with only the 'Bowers Gifford & North Benfleet 149' and 'Bowers Gifford & North Benfleet 218' footpaths being located within the overall site boundary.

Plate 2.8 - Public Rights of Way Map



Source: Extract of ECC's Public Right of Way Map7

Bowers Gifford & North Benfleet Footpath 149

2.31. During the proposed construction phase, vehicle trips may impact Bowers Gifford & North Benfleet Footpath 149, which routes across part of the potential access corridor along the northern boundary of the site, if the northern egress option is approved as the preferred egress option during construction.

2.32. This footpath currently routes north to south along Bonvilles Cottages (a private road) from the A127. At the junction with the A127 the PRoW will coincide with the northern construction phase egress option, as shown in the inset on **Plate 2.8**.

2.33. However, based on site observations, it has been determined that Bonvilles Cottages is a long-established shared surface, used to access several commercial properties by all

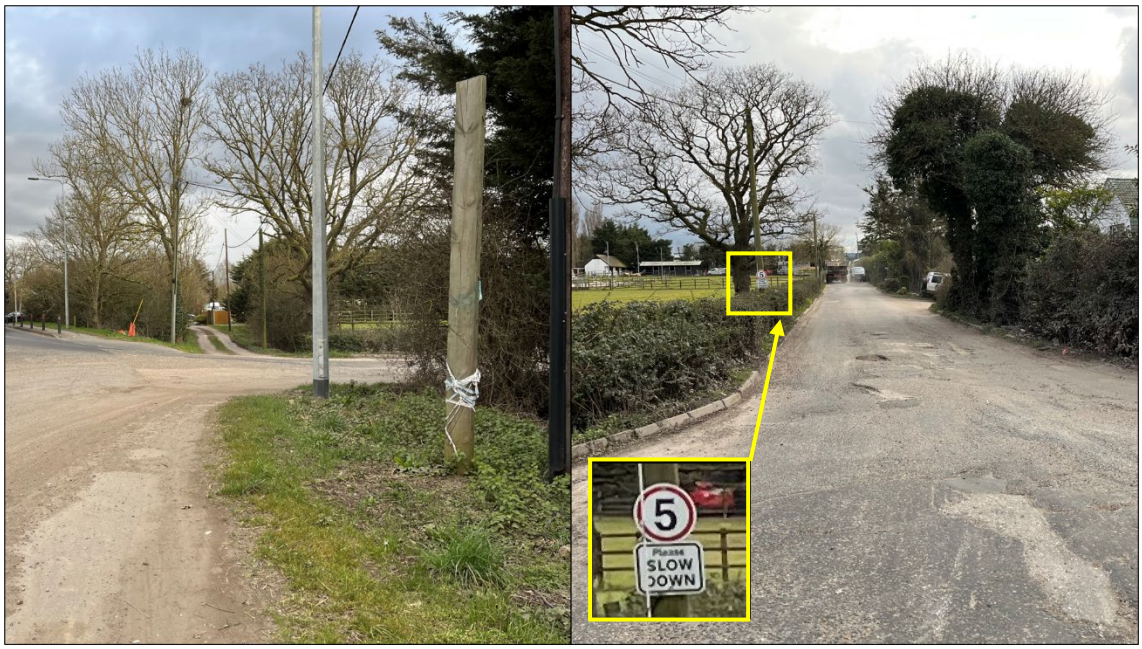
7 Essex County Council's PRoW Interactive Map v3

traffic including heavy good vehicles HGVs similar in size to those which will serve the development site during the construction phase.

2.34. The footpath was not visibly signposted, and no pedestrians were observed to use the route during the site visit undertaken 13 March 2025.

2.35. Bonvilles Cottages operates under a 5-mph speed restriction to ensure low-speed vehicle movements and improve safety for all users. The nature of the track's vehicle access is shown in **Plate 2.9** below.

Plate 2.9 – Site observations of Shared Use Track / Northern Site Egress



2.36. Given its current use and function, it is deemed that the proposed use of this route as part of the northern egress from the site is appropriate and can be accommodated without significant risk to footpath users. Appropriate measures will be implemented as part of the Construction Traffic Management Plan to manage interactions between vehicles and pedestrians and ensure continued safe use of the route throughout the construction phase.

Bowers Gifford & North Benfleet Footpath 218

2.37. This footpath will be retained as part of the development proposals, and it is considered that this footpath will not be significantly impacted by construction vehicles.

2.38. Overall, the proposed construction activities have been carefully reviewed in relation to nearby Public Rights of Way, and with mitigation measures in place, no significant adverse impacts are anticipated on the use or safety of the PRoWs within the vicinity of the site, including Footpaths 149 and 218, throughout the construction period.

Summary

2.39. Based on the above desktop review and site observations, it is concluded that the local highway network is safe and suitable to accommodate the anticipated construction traffic

associated with the development of the BESS. There are no existing highway safety issues identified within the vicinity of the site access or on the surrounding highway within the study areas likely to be exacerbated by the development proposal.

2.40. The existing local highways network surrounding the development site are considered suitable to accommodate the small number of additional daily HGV trips associated with the development. The A127, A1245 and the A130 are major routes carrying large numbers of HGV traffic daily.

2.41. The nearby PRoW, including Footpaths 149 and 218, are not expected to be significantly affected during construction. Footpath 149, which will potentially form part of the northern egress, is already used by HGVs as a shared surface under low-speed conditions and is considered suitable for continued shared use with appropriate management measures in place.

2.42. Therefore, it is considered that the construction vehicles and operational traffic associated with the development can be accommodated safely on the local highway network and the proposed access point (discussed in more detail below in Section 3 of this report).

3. Development Proposals and Access

Development Proposals

3.1. The proposed development is a BESS and associated infrastructure capable of delivering up to 150MW storage. The proposed BESS will be able to store and release energy to the electricity network. It will supply energy to the network during times of peak demand. The site layout is detailed on the enclosed Infrastructure Layout Sheets 1-3 (Drawing Number 05560-RES-LAY-DR-PT-001 Rev 3) provided in **Appendix B**.

3.2. The site boundary for the application allows for all development associated with the proposed development, including connection to the grid, landscaping features and access.

3.3. The development will connect to the UKPN Distribution Network at the Rayleigh Main Substation via a 132kV OHL Tee-in to Tower and an approximately 1.5km interconnection from the Project Substation.

3.4. Access to the site will be obtained from the A1245 slip road to the A127 via the existing access to be modified and retained. Egress from the site will be taken either from the site to the south onto the A1245 or the A130 left slip, or to the west onto the A127.

3.5. Only one egress point will be constructed subject to agreement with ECC Highways, however at this current time all three potential options are included for consideration and approval.

Site Management

3.6. Once operational, the facility will be remotely controlled and as such will be unmanned. There will however be a visit to the site approximately once a month by a car, van or light goods vehicle, to carry out regular inspections and routine maintenance. Parking for these visits will be accommodated on site.

3.7. It is possible that one or more medium or large components may require replacement during the operational life of the facility. The nature of the traffic associated with such works will be similar to that used in the construction phase of the project but will be present for a much shorter duration. Should the scale of the works be such that traffic management measures would be required to manage vehicle movements to and from the site, the necessary permissions shall be sought from the local authority in line with due process.

Construction Site Access

3.8. The development site will be accessed via a strict one-way arrangement.

3.9. .

3.10. The site ingress point is taken from the A1245 slip road will be retained with minor modifications to provide a secure access, west of the proposed cycle link which will be constructed as part of the Fairglen Interchange Highway Improvement Scheme, modified

access will be agreed in advance with ECC Highways to avoid any temporary impacts to the cycle route.

3.11. Egress for construction traffic will be achieved via one of three egress options to be agreed with ECC Highways. The egress options are as follows:

- A northern site egress option onto the A127 from the Bonville Cottages junction;
- A southwestern site egress option onto the A130 left slip; and
- A southeastern egress option onto the A1245, north of Rayleigh Spur roundabout .

3.12. Discussions to agree the final site egress are ongoing at the time of writing

3.13. As set out further in **Chapter 5**, it is anticipated that construction will generate a maximum total of 6,382 two-way trips by HGVs throughout the 21-month construction period, which equates to a maximum of 26 daily two-way trips (13 HGV deliveries).

3.14. Visibility splays to DMRB standards are achievable to all site egress options based on the design speed of the roads.

3.15. An SPA for a 16.5m HGV has been undertaken to show an incoming vehicle travelling through the site to leave via the three egress options currently under consideration and to be agreed with ECC Highways. The SPA is shown on Pegasus drawing P24-3044-SK01-SK05 included as **AppendixC.**

3.16. The arrival(s) and departure(s) of delivery vehicles will be managed on a case-by-case basis, and bankspeople used as necessary to guide vehicles into and out of the site, as required.

Emergency Site Access

3.17. Whilst the site will operate a one-way traffic control system, there are three proposed emergency access points for the site:

- the site access (construction and operation) from the A127 on-slip lane at Fairglen interchange;
- the A127 operational site egress past the neighbouring properties; and
- the egress to the south; either onto the A130 slip road or the A1245.

3.18. Two of the designated emergency access routes will utilise the egress points, either to the west or the south. This arrangement requires emergency vehicles to travel against the general traffic flow of the site, but this is considered acceptable given the authority of emergency responders to reach incidents in the fastest and most direct manner possible.

3.19. On the highway emergency vehicles (police cars, ambulances, fire engines) are allowed to disregard certain traffic laws, including those related to one-way streets, when responding to an emergency. As this an exception to the normal traffic rules, the driver must still ensure it is done safely and without endangering others.

3.20. In the event of an incident at the BESS site, the same level of due care and attention required of all emergency vehicle responders will be exercised.

3.21. The site egress point will be designed to accommodate the in-bound turning manoeuvre of a fire appliance from the highway with a small radius and the holding bay on the egress route will be used as a passing bay to ensure safe two-way traffic can be achieved in the event of an emergency.

3.22. The emergency access procedure accords with the National Fire Chiefs Council (NFCC) Gridscale Battery Energy Storage System planning – Guidance for FRS document.

3.23. Neither construction nor operational traffic associated with the site are permitted to follow the emergency site access procedure and enter the site from an egress point.

3.24. The access points will be managed by gates to which the emergency services will have the key or code to ensure that emergency vehicles have full access to the site.

Operational / Maintenance Site Access

3.25. Operational access for infrequent small vehicles is proposed to be provided from the same retained agricultural access with egress proposed via the existing access to the cottages, circa 95m west of the A130 overbridge. The Operational Access arrangements are indicated on Plate 3.1 above.

3.26. As set out further in **Chapter 5**, once operational, it is anticipated that maintenance vehicles will access the site on an ad-hoc basis, when required. The operational trip generation of the site will therefore be low, typically one two-way vehicle trip per week. Maintenance trips will generally be made by 4x4 or a small van type vehicle.

3.27. It is not anticipated that any vehicles larger than a 7.5t Transit Van will require access to the site during operation, except in the potential event of a replacement of a large component.

3.28. Whilst the contractor's construction compound will have been removed, space will remain within the site for vehicles to turn around to ensure that reversing will not occur onto the adjacent carriageway.

Construction Compound

3.29. A temporary construction compound will be located within the site. The compound will be of a suitable size for an articulated vehicle to enter and exit in a forward gear. The compound will include areas for the storage of plant and equipment.

3.30. A temporary car parking area (including spaces for minibuses) will be provided on the site within a contractor's compound. Parking will therefore be contained within the site and no unnecessary parking will occur on the local highway network.

4. Construction Traffic Routing

4.1. It is proposed that all construction traffic associated with the construction phase of the development will approach the site via the UK Strategic Road Network (SRN), specifically from the M25. Construction vehicles will exit at M25 Junction 29, turning onto the A127 eastbound, a principal A-road linking London and South Essex.

4.2. From M25 Junction 29, vehicles will join the A127 eastbound and travel for approximately 20 km to approach the Fairglen Interchange. From the Fairglen Interchange, vehicles will travel along the gyratory of the roundabout and use the third exit to route onto the A127 slip road. The site access is located on this slip road and a left turn should be made to ingress into the site.

4.3. There are currently three egress options for vehicles exiting the site. These are:

- Egress onto the A1245 northbound
- Egress onto the A130 northbound
- Egress onto A127 westbound

4.4. **A1245 northbound egress –** For vehicles egressing from the A1245 northbound egress, a left turn is made from the site egress to join onto the A1245 heading northbound towards the Fairglen Interchange. The left lane should be used to follow the slip lane onto the A127, travelling past the site access. From here the route is the same and the ingress but in reverse.

4.5. **A130 northbound egress –** The A130 northbound egress is located adjacent to the Rayleigh Spur Roundabout and on the A130 northbound slip road to stay on the A130.

4.6. For vehicles egressing from this site egress, a left turn is made from the site egress to join onto the A130 heading northbound. The A130 is then followed for circa 13.7km to arrive at the Howe Green Interchange.

4.7. Here, vehicles should use the left slip lane to join onto the A12 heading southwest for circa 21.8km to arrive at the M25 junction 28. At this point vehicles can either choose to use the second exit to route southbound or fourth exit to route northbound.

4.8. **A127 westbound egress –** For vehicles egressing from the A127 westbound egress, a left turn is made from the site egress to join onto the A127 heading westbound.

4.9. The A127 should then be followed for circa 18.7km to reach the M25 Junction 29.

4.10. The ingress and egresses discussed above are illustrated on the Infrastructure Layout plan (Drawing ref: 05560-RES-LAY-DR-PT-001) provided at **Appendix B.**

4.11. The above ingress and egress routing arrangements ensure that construction vehicles associated with the site will use A-roads and not unnecessarily pass-through small villages or sensitive locations to access the site.

4.12. Construction vehicles will only access the site via the designated construction route identified in this CTMP. An appropriate signage scheme will be put in place on the A127, a1245 and the A130 as appropriate and as agreed with ECC Highways.

Summary

4.13. All construction traffic will route to the site via the Strategic Road Network, primarily using the M25 (Junction 29) and the A127. Vehicles will access the site from the A127 slip road near the Fairglen Interchange. Three egress points are available: the southeastern egress onto A1245 northbound, the southwestern egress onto A130 northbound, and northern egress onto A127 westbound, each directing traffic back to the A127 and M25. These designated routes ensure construction vehicles use major A-roads, avoiding sensitive areas, with full routing details and signage provided in the CTMP.

5. Vehicle Trip Attraction

Construction Phase

5.1. The Applicant has confirmed that the construction period is likely to take up to 21 months to complete.

5.2. The applicant has confirmed that the largest vehicle size to regularly access the site during the construction phase is a 16.5m articulated lorry. Associated goods such as smaller components, tools and other equipment will be delivered on smaller flatbed trucks and low loaders.

5.3. The below vehicle numbers have been based on 16.5m HGV trips to and from the site. This has been used to provide a robust assessment. However, not all vehicles will be of this size and the smallest vehicle size possible will be used for the delivery of construction materials, plant, and equipment.

5.4. The Applicant is committed to ensuring that, wherever possible, local contractors and employees are used in all aspects of BESS development. The major opportunities arise during the construction phase when suitably qualified local firms are often invited to bid for different aspects of construction. Contractors are encouraged to source construction materials locally (i.e. within the county) and to use local transport and plant hire companies where possible, in addition to local services and amenities. Should either a local or non-local workforce be hired, the number of car trips to the site will be minimised wherever possible by shared transport.

5.5. Throughout the construction phase there will be a combination of HGVs (for the component and material deliveries) and cars/vans/minibuses (for construction staff), on site. HGV trips are expected to be most intense throughout the first few weeks of construction whilst car/van trips are expected to be regular throughout.

5.6. **Table 5.1** below shows the estimated number of HGV trips for the main infrastructure. The applicant has forecasted the heavy goods deliveries which could be associated with the entire construction period.

5.7. The table also indicates during which month(s) of the construction period each delivery / vehicle trip is expected to occur and outlines the expected maximum daily two-way trips for deliveries during these months.

5.8. Construction is currently anticipated to commence in December 2029 and to conclude by the end of August 2031, although this is subject to the Energy Network Operator's timings.

Table 5.1 – Forecasted Heavy Goods Vehicle Delivery Trips

Delivery/Activity Type	Estimated total two-way trips over a 21 - month Construction period	Indicative spread of vehicle trips during the Construction phase	Average Monthly two-way trips (active months)	Average Daily two-way (total) trips
Site Mobilisation/Demobilisation	60	Month 1 and 21	30	1
Temporary Fence Delivery	10	Month 1	10	1
Site Welfare Maintenance	110	Months 1-21	5	1
General Site Deliveries	150	Months 1-21	7	1
Imported Stone	4580	Months 1-9	509	24
Concrete Delivery	480	Months 7-11	96	4
BSE, PCS and MV Skid Delivery	850	Months 7-15	94	4
Electrical Equipment Delivery*	50	Months 13-17	10	1
Substation Equipment Delivery**	40	Months 17-20	10	1
Cable and Ducting Delivery	30	Months 3-7	6	1
Permanent Fence Delivery/CCTV & Lighting	10	Months 19 and 20	5	1
Spares Container Delivery	12	Month 21	12	1
Total	**6382**	**-**	**304**	**14**

Source: Client (Applicant) estimates of construction trips. Daily two-way trip numbers are rounded up to whole numbers.

5.9. The construction phase is currently programmed to last for a 21-month period and typically a five-day working week with the possibility for weekend working has been forecast. Across this period, it is forecast that circa 3,191 deliveries (6,382 two-way trips) could be made by HGVs associated with construction of the BESS scheme, over the entire construction period.

5.10. The peak period for HGV activity is expected to last three months, from June to August 2030 (months 7-9 inclusive). There will be up to 34 two-way HGV trips per day, equating to a maximum of 17 daily deliveries.

5.11. During the 21-month construction period, there will be an average of 14 two-way trips per day, or 7 daily deliveries. HGV trips will vary according to the construction activities. From December 2029 to May 2030 (months one to six), daily HGV traffic will average 24 to 26 two-way trips or 12 to 13 deliveries per day.

5.12. Following the peak construction period outlined in **paragraph 5.10**, HGV activity is forecast to reduce significantly during months ten to 21 (September 2030 to August 2031), with only two to ten two-way trips or one to five deliveries per day.

5.13. There may also be a small number of construction trips associated with smaller vehicles such as the collection of skips for waste management which are not included at **Table 5.1**.

5.14. The applicant suggested that construction personnel would generate about per day. This number of trips is unlikely to affect the daily traffic flow on the M25 and A127.

5.15. Additionally, it was suggested by the applicant that construction personnel would generate up to circa 24[8] Car/LGV two-way trips per day. This amount of vehicle trips is unlikely to be discernible within the daily total traffic variance of flow on the M25 and A127.

Abnormal Indivisible Loads (AIL)

5.16. The scope of the construction project may require abnormal loads being delivered subject to supplier confirmation. The grid transformers are likely to be AIL which will be delivered to the site by large STGO vehicles, or Special Types General Order vehicles, due to the weight of the components.

5.17. Should the need for an abnormal load or STGO vehicle(s) be identified during the development of the final delivery solution and confirmation of the final supplier, the route will be fully assessed, and suitable measures implemented e.g. the use of escort vehicles, as required by law.

Cumulative Construction Traffic Impacts

5.18. It is understood that there are a number of renewable energy projects, consented and under-consideration locally.

5.19. At the time of writing, it is not known if there will be any coincidence of construction phase of any of the schemes, however as the CTMP (an organic management document) is further developed to include the detailed construction programme and construction traffic it will be cognisant of local committed developments to minimise the impact of any coincidental cumulative construction traffic impacts.

Operational Phase

5.20. After commissioning, it is anticipated that the vehicle trip generation of the site will be low, typically one vehicle trip per week for equipment maintenance. This would typically be made by light van or 4x4 type vehicles. Whilst the contractor's compound will have been removed, space will remain within the site for such a vehicle to turn around to ensure that reversing will not occur onto the adjacent road.

5.21. It is not anticipated that any vehicles larger than a 7.5t Transit Van will require access to the site during operation, except in the potential event of a replacement of a large component.

Decommissioning Phase

5.22. The decommissioning phase is likely to replicate the construction period of up to 21 months to conclude the removal of all components of the development and the restoration of the site for future agricultural purposes.

[8] Up to 610 staff car/LGV trips per month over the 22-day working month.

5.23. During this phase, the largest vehicle typically accessing the site will be a 16.5m articulated lorry. Smaller components, tools, and equipment will arrive on flatbed trucks and low loaders.

5.24. The scope of the decommissioning project may require AIL to be removed from the site, the removal of the grid transformers from the site by large STGO vehicles. Should the need for an abnormal load or STGO vehicle(s) be identified during the development of the final decommissioning strategy, the route will be fully assessed, and suitable measures implemented e.g. the use of escort vehicles, as required by law.

Summary

5.25. While exact vehicle trip figures would be dependent upon arrangements made by the end contractor, it is anticipated that there will be a maximum of circa 17 HGV deliveries, equating to 34 two-way vehicle trips per day during the three month peak period, with less trips across the majority (18-month) of the construction phase (similarly for the decommissioning phase).

5.26. During construction and decommissioning there will also be a small number of vehicle trips associated with smaller vehicles such as the collection of skips for waste management, the transport of construction workers and sub-contractors, although the numbers involved are forecast to be relatively low on a day-to-day basis and minibuses could be provided for general operatives.

5.27. The level of traffic during the temporary construction and decommissioning phases is not considered to be material in comparison to the daily traffic already on the network, and therefore the development is unlikely to have a detrimental impact on the safety or operation of the local or trunk road network.

6. Proposed Mitigation

Introduction

6.1. As discussed in **section 4**, the applicant is actively collaborating with ECC Highways to manage and mitigate the development traffic. The goal is to protect the local highway network and surrounding environment, minimising construction traffic impacts as much as practicably possible.

6.2. The following paragraphs set out the proposed construction traffic mitigation measures.

Mitigation Measures

Management and Control

6.3. The contractor that is appointed to carry out the development works will introduce measures to minimise the effect on the local highway network resulting from construction activities as necessary. These will be managed by the Project Manager and the Site Manager.

6.4. The Site Manager will assume responsibility for the operation of the site. The details of the Site Manager will be provided to ECC Highways, as the Local Highway Authority, in advance of any works being carried out.

6.5. The arrival and departure of HGVs at the Fairgreen site will be strictly managed by the Site Manager. A delivery schedule will be implemented to minimise any potential vehicle congestion and delay to access the site.

6.6. Any emerging HGVs can be held within the construction compound or in the designated holding bays on egress to leave the site outside of peak hours.

6.7. If considered necessary by ECC Highways, deliveries to the site can be restricted to set hours outside of the typical network peaks. However, the proposed construction route does not route past any sensitive locations (such as schools), and it is therefore considered that no delivery timing restrictions are necessary.

Communication Protocols

6.8. Heavy Goods Vehicles throughout the entire construction phase will strictly access the site via the designated construction route identified in this CTMP and described above. Drivers will be informed of the route prior to departing for the site.

6.9. Drivers will adhere to a delivery schedule and will be required to call ahead to ensure that the access gates are open to receive to avoid any potential of an HGV queue at the access point.

Bankspeople and On-Site Support

6.10. Where necessary, bankspeople will be deployed to support the safe manoeuvring of vehicles at the site access and egress points to assist and control HGVs entering and exiting the site, particularly during peak delivery periods or in low-visibility conditions.

Temporary Construction Signage

6.11. During the access construction and modification temporary construction signage and guarding will be installed on the highway. Signage will conform to the Department for Transport's Traffic Signs Manual: Chapter 8 (2020) and will be positioned to avoid obstruction of visibility splays. All signage will be temporary and removed following completion of the construction work.

Wayfinding

6.12. Temporary signage will be erected in the vicinity of the site and local road network during the construction phase in accordance with the Traffic Signs Regulations and General Directions (TSRGD) to direct construction traffic and to give advance warning to motorists.

Load Security

6.13. All construction vehicles carrying loads with potential for material loss (e.g. soil, aggregates) must be appropriately sheeted or secured in accordance with national transport regulations to prevent debris from escaping during transit.

Site Security

6.14. The construction site will be enclosed by appropriate security fencing and remain secured outside of working hours to prevent unauthorised access.

On-Site Temporary Compound and Parking

6.15. A temporary construction compound will be established on-site, which will include designated parking areas for contractors and visitors. All personnel will be instructed in advance not to park on surrounding roads and to use only the provided on-site parking facilities.

Dirt, Mud and Dust Management

6.16. To mitigate the spread of mud and dust onto local highways, wheel-washing facilities will be installed at the site exit, and all vehicles will be required to pass through this equipment before leaving the site. In dry conditions, dust suppression measures such as water spraying will be employed as needed to prevent airborne dust and odour.

Noise Management

6.17. All construction vehicles and plant will be required to switch off engines when not in use to reduce unnecessary emissions and minimise noise disturbance.

Additional Mitigation Measures

6.18. Any further mitigation measures deemed necessary to enable safe and compliant construction activity will be discussed and agreed between the contractor and the LHA in due course.

7. Summary and Conclusions

7.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of RES (Renewable Energy Systems) to address the transport and access arrangements associated with the construction of the proposed Fairgreen Battery Energy Storage System (BESS), located on land to the east of Basildon, Essex.

7.2. This CTMP has been prepared further to a site visit undertaken on 13 March 2025.

7.3. The proposals comprise the installation of a BESS facility with a total export capacity of circa 150 Megawatts (MW), strategically situated adjacent to the A127, A1245, and A130, forming part of the UK Major Road Network (MRN).

7.4. Construction access to the site will be taken via a designated route from M25 Junction 29, east along the A127, and through a controlled left-turn access on the slip road near the Fairglen Interchange . Egress will be via one of three current egress options: to the A1245 northbound, A130 northbound, and A127 westbound, all of which lead back to the SRN without the need to travel through sensitive or residential areas.

7.5. Construction traffic has been forecast across a 21-month programme, with peak HGV activity reaching up to 34 two-way vehicle trips per day during months 7–9 and significantly reducing thereafter. Car and LGV trips by site personnel will also be limited, with associated parking provided on-site to avoid overspill.

7.6. A comprehensive package of mitigation measures will be implemented to minimise disruption, including delivery scheduling, communication protocols, wheel washing, site security, signage, and dust suppression. These measures are clearly outlined in **Section 6** of this report and will be coordinated with Essex County Council as the Local Highway Authority.

7.7. The designated construction routes make efficient use of the existing Strategic Road Network and avoid unnecessary routing through villages or constrained roads. Full routing plans are provided in Appendix B.

7.8. In relation to Public Rights of Way, Footpaths 149 and 218 crosses through the site. While limited impact is expected to Footpath 218, Footpath 149 will be used as part of the northern egress, which has been assessed to be suitable due to its current shared use function with HGVs and a 5-mph speed restriction in place.

7.9. A review of recent highway safety data for the surrounding highway network found that there are no inherent highway safety concerns likely to be exacerbated by the forecast construction or operational trips.

7.10. The proposed development is unlikely to have any significant adverse effects on the local or strategic highway network. It is therefore concluded that are no highways or transport reasons that would prevent the delivery of the proposed Fairgreen BESS scheme.

Appendix A – Site Location Drawing

EASTING: 577102
NORTHING: 191085

EASTING: 576733
NORTHING: 190983

EASTING: 577102
NORTHING: 190983

EASTING: 578298
NORTHING: 191085

EASTING: 577490
NORTHING: 190051

EASTING: 578298
NORTHING: 190051

EASTING: 576733
NORTHING: 189701

EASTING: 576953
NORTHING: 189701

ORDNANCE SURVEY IRELAND LICENCE NO. EN 0003820
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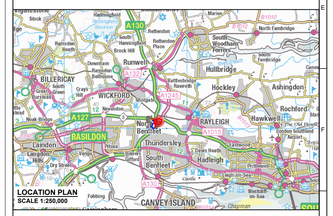
KEY:

COMBINED LANDOWNERS BOUNDARY
(INSIDE OF LINE DENOTES BOUNDARY)

DEVELOPMENT BOUNDARY
(OUTSIDE OF LINE DENOTES BOUNDARY)

KEY PLAN - NOT TO SCALE



1	BM	SD	JH	2025-06-13	FIRST ISSUE
ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES

PURPOSE: PLANNING	COORDINATES: OSGB 1936
SCALE: 1:2,500 @ A1	DATUM: N/A
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A

PROJECT TITLE
FAIRGREEN STORAGE

DRAWING TITLE
LOCATION PLAN

RES DRAWING NUMBER: 05560-RES-MAP-DR-XX-001 | REV: 1

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Appendix B – BESS Infrastructure Layout Drawings

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KEY:

- DEVELOPMENT BOUNDARY (OUTSIDE OF LINE DENOTES BOUNDARY)
- PALISADE, WELDMESH OR ACOUSTIC FENCE
- BATTERY STORAGE ENCLOSURE (BSE)
- POWER CONVERSION SYSTEM (PCS) WITH SINGLE MV SKID AND APRON SLAB
- BESS SUBSTATION BUILDING
- AUXILIARY TRANSFORMER
- LV SWITCHGEAR ROOM
- AGGREGATION PANEL WITH LV PILLAR
- PRE-INSERTION RESISTOR
- CAPACITOR BANK
- HARMONIC FILTER AND RESISTOR
- SPARES CONTAINER
- LIGHTING / CCTV COLUMN
- ACCESS TRACK
- EXISTING ACCESS TRACK
- EXISTING ACCESS TRACK TO BE UPGRADED
- ALLOWANCE FOR EARTHWORKS (6m)
- GRAVEL OR ASPHALT FINISH TO SUIT DETAILED EARTHING DESIGN
- EXISTING DRAINAGE INFRASTRUCTURE
- WATER CHANNEL CROSSING CULVERT

NOTES:

1. EQUIPMENT DETAILS AND CONFIGURATION WITHIN THE BATTERY ENERGY STORAGE COMPOUND ARE INDICATIVE AND SUBJECT TO DETAILED DESIGN.

OVERALL
SHEET 1 OF 3

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
3	BM	WM	JH	2025-06-11	UPDATED DEVELOPMENT BOUNDARY AND ACCESS TRACK
2	BM	WM	JH	2025-06-06	DESIGN EVOLUTION
1	BM	MK	JH	2025-04-15	FIRST ISSUE

PURPOSE: PLANNING	COORDINATES: OSGB 1936
SCALE: 1:2,000 @ A1	DATUM: N/A
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A

PROJECT TITLE: FAIRGREEN STORAGE

DRAWING TITLE: INFRASTRUCTURE LAYOUT

RES DRAWING NUMBER: 05560-RES-LAY-DR-PT-001 | REV: 3

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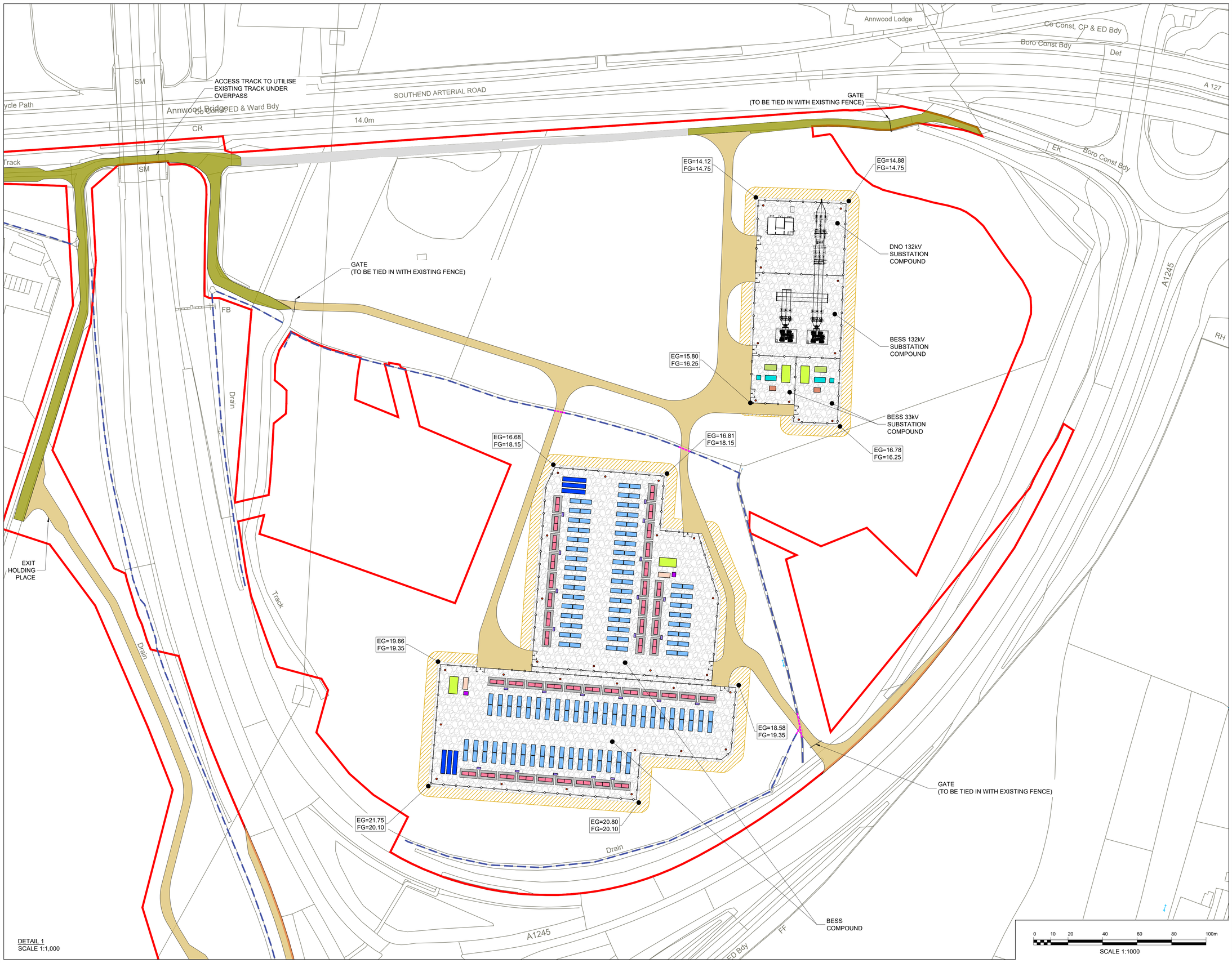
0 20 40 60 80 100m

SCALE 1:2000



DETAIL 1
SCALE 1:1,000

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NOTES:

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0 10 20 40 60 80 100m
SCALE 1:1000

DETAIL 2
SHEET 2 OF 3

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
3	BM	WM	JH	2025-06-11	UPDATED DEVELOPMENT BOUNDARY AND ACCESS TRACK
2	BM	WM	JH	2025-06-06	DESIGN EVOLUTION
1	BM	MK	JH	2025-04-15	FIRST ISSUE

PURPOSE: PLANNING
COORDINATES: OSGB 1936
SCALE: 1:1,000 @ A1
DATUM: N/A
LAYOUT DWG: N/A
T-LAYOUT NO.: N/A

PROJECT TITLE: FAIRGREEN STORAGE

DRAWING TITLE: INFRASTRUCTURE LAYOUT

RES DRAWING NUMBER: 05560-RES-LAY-DR-PT-001
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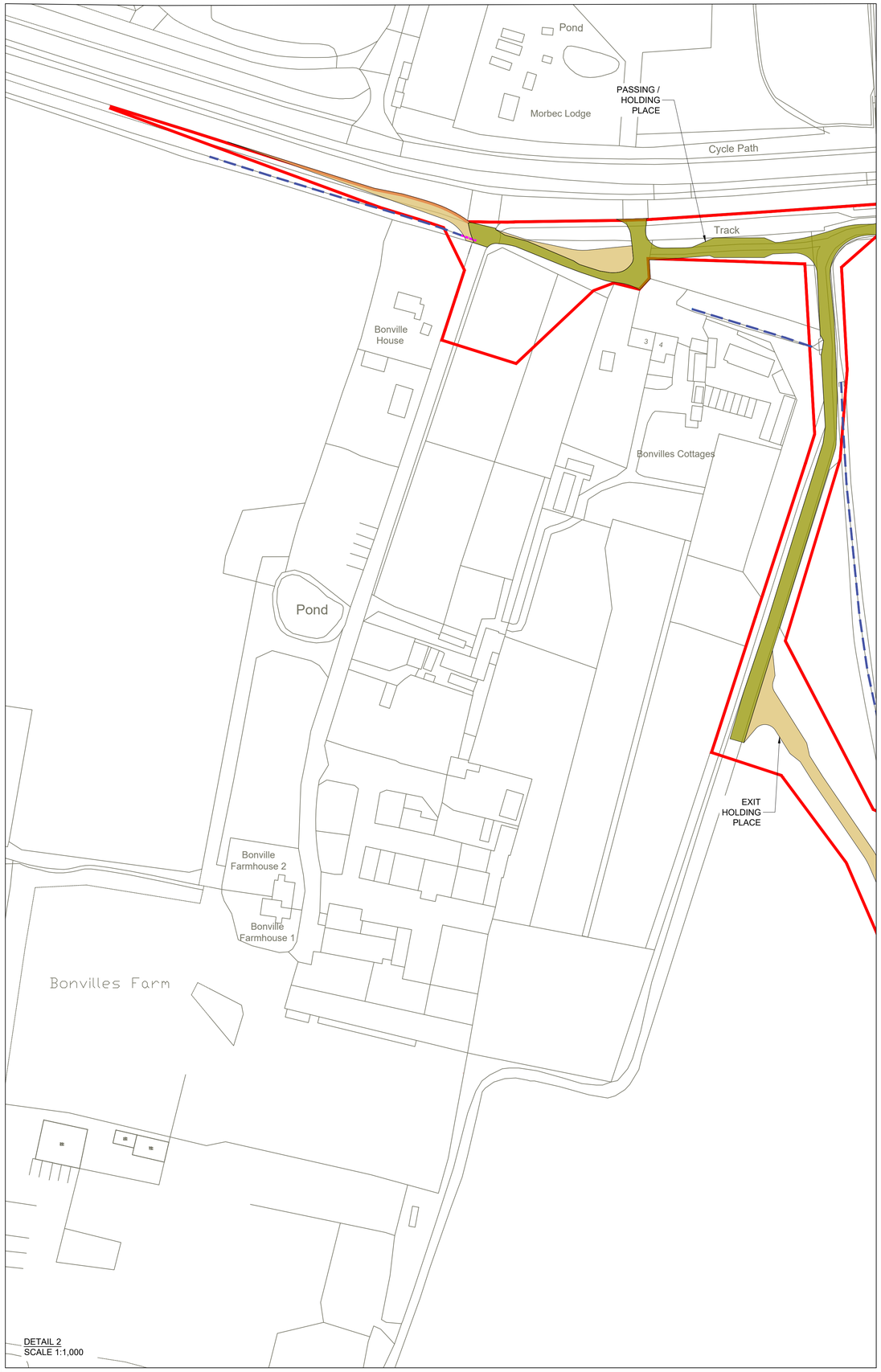

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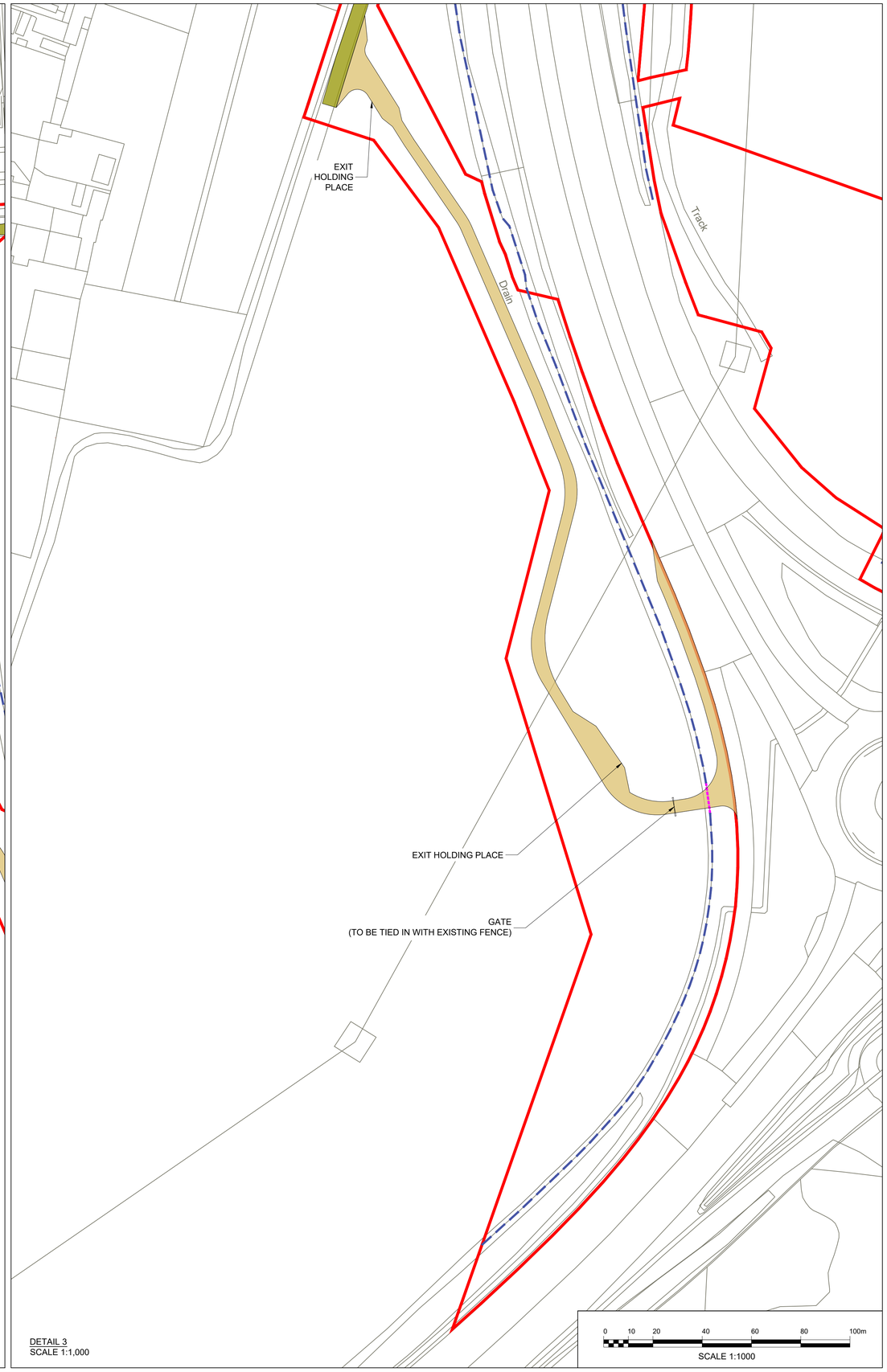
SCALE 1:1,000



DETAIL 3
SCALE 1:1,000

0 10 20 40 60 80 100m
SCALE 1:1000

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KEY:

- DEVELOPMENT BOUNDARY (OUTSIDE OF LINE DENOTES BOUNDARY)
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NOTES:

1. EQUIPMENT DETAILS AND CONFIGURATION WITHIN THE BATTERY ENERGY STORAGE COMPOUND ARE INDICATIVE AND SUBJECT TO DETAILED DESIGN.

DETAIL 2 & 3
SHEET 3 OF 3

ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
3	BM	WM	JH	2025-06-11	UPDATED DEVELOPMENT BOUNDARY AND ACCESS TRACK
2	BM	WM	JH	2025-06-06	DESIGN EVOLUTION
1	BM	MK	JH	2025-04-15	FIRST ISSUE

PURPOSE: PLANNING	COORDINATES: OSGB 1936
SCALE: 1:1,000 @ A1	DATUM: N/A
LAYOUT DWG: N/A	T-LAYOUT NO.: N/A

PROJECT TITLE: FAIRGREEN STORAGE

DRAWING TITLE: INFRASTRUCTURE LAYOUT

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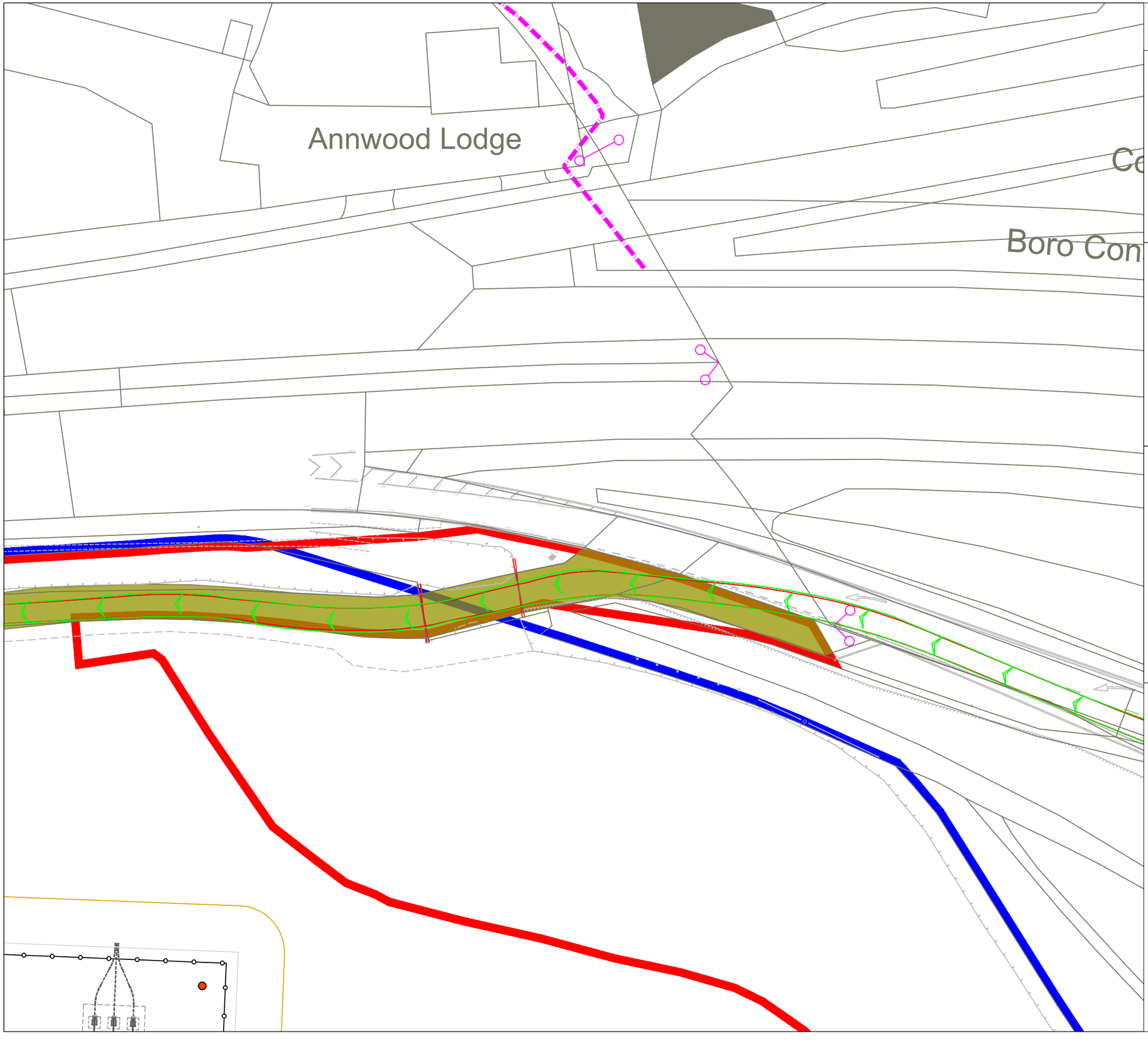
Appendix C – Swept Path Analysis



N

1:500
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KEY:

Development Boundary
(Outside of line denoted boundary)

Client Ownership Boundary

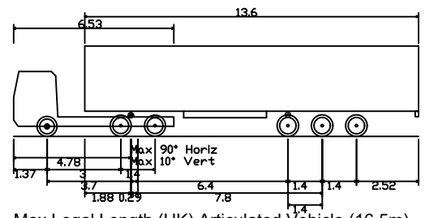
Existing Access Track to be Upgraded

Access Track

NOTES:

1. This drawing is for planning purposes only and should not be used for costing or construction. Pegasus Group accept no liability for the misuse of this drawing from its intended purpose.

2. This drawing is based upon the Infrastructure Layout Drawing Rev 3 (Drawing Ref: 05560-RES-LAY-DR-PT-001) produced by RES on [11.06.2025].



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

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

REV	DATE (DD.MM.YY)	DESCRIPTION	REVISED BY	APPROVED BY
-	-	-	-	-

DRAWING NAME:
Fairgreen BESS - Swept Path Analysis 16.5m HGV Ingressing into Site

PROJECT:
Land North of Rayleigh Spur Roundabout, Basildon

CLIENT:
Renewable Energy Systems Ltd

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
19.06.2025	1:500@A3	AJ	JK

DRAWING NUMBER: P24-3004-TR-SK02

PG OFFICE: BIR

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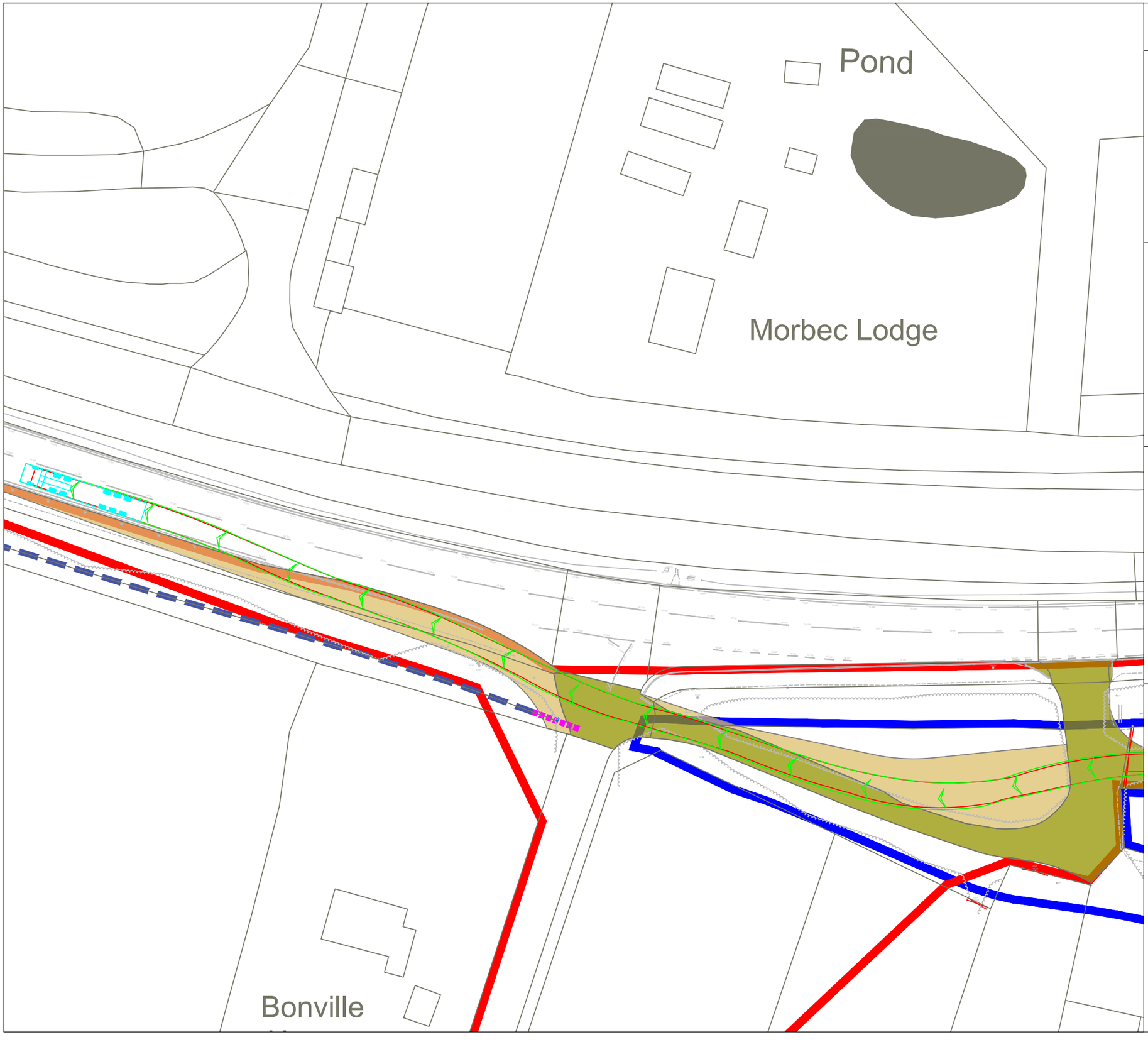

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1:500
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KEY:

Development Boundary
(Outside of line denoted boundary)

Client Ownership Boundary

Existing Access Track to be Upgraded

Access Track

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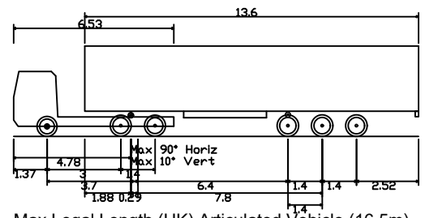

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Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

REV	DATE (DD.MM.YY)	DESCRIPTION	REVISED BY	APPROVED BY
-	-	-	-	-

DRAWING NAME:
Fairgreen BESS - Swept Path Analysis 16.5m HGV using Northern Egress

PROJECT:
Land North of Rayleigh Spur Roundabout, Basildon

CLIENT:
Renewable Energy Systems Ltd

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
19.06.2025	1:500@A3	AJ	JK

DRAWING NUMBER: P24-3004-TR-SK03

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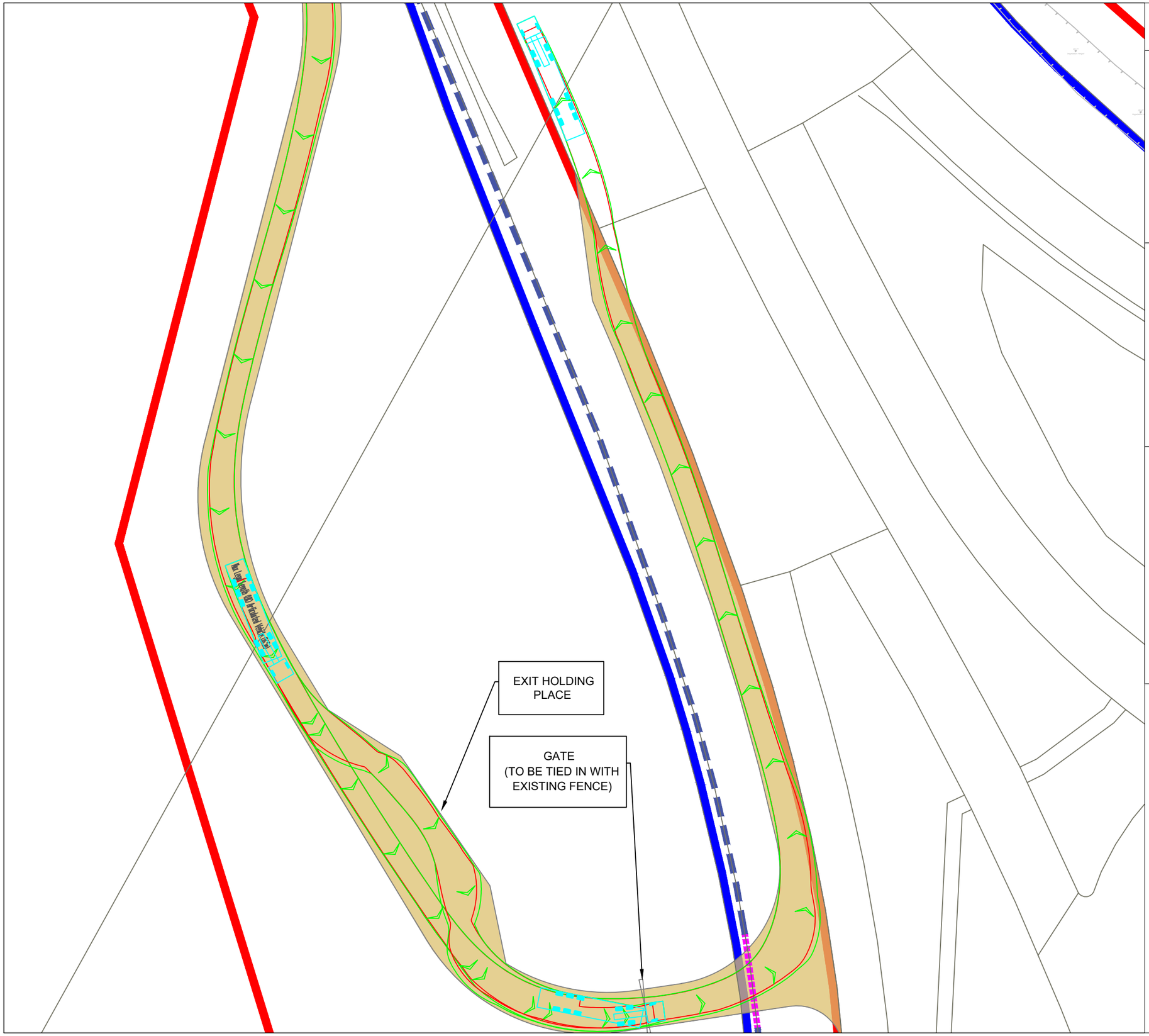


N

1:500
0 12.5m

KEY:

Development Boundary
(Outside of line denoted boundary)

Client Ownership Boundary

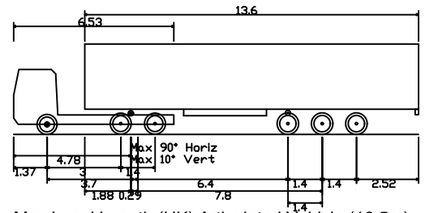
Existing Access Track to be Upgraded

Access Track

NOTES:

1. This drawing is for planning purposes only and should not be used for costing or construction. Pegasus Group accept no liability for the misuse of this drawing from its intended purpose.

2. This drawing is based upon the Infrastructure Layout Drawing Rev 3 (Drawing Ref: 05560-RES-LAY-DR-PT-001) produced by RES on [11.06.2025].



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

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

REV	DD.MM.YY DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:
Fairgreen BESS - Swept Path Analysis 16.5m HGV using Southwestern Egress

PROJECT:
Land North of Rayleigh Spur Roundabout, Basildon

CLIENT:
Renewable Energy Systems Ltd

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
19.06.2025	1:500@A3	AJ	JK

DRAWING NUMBER: P24-3004-TR-SK04

PG OFFICE: BIR

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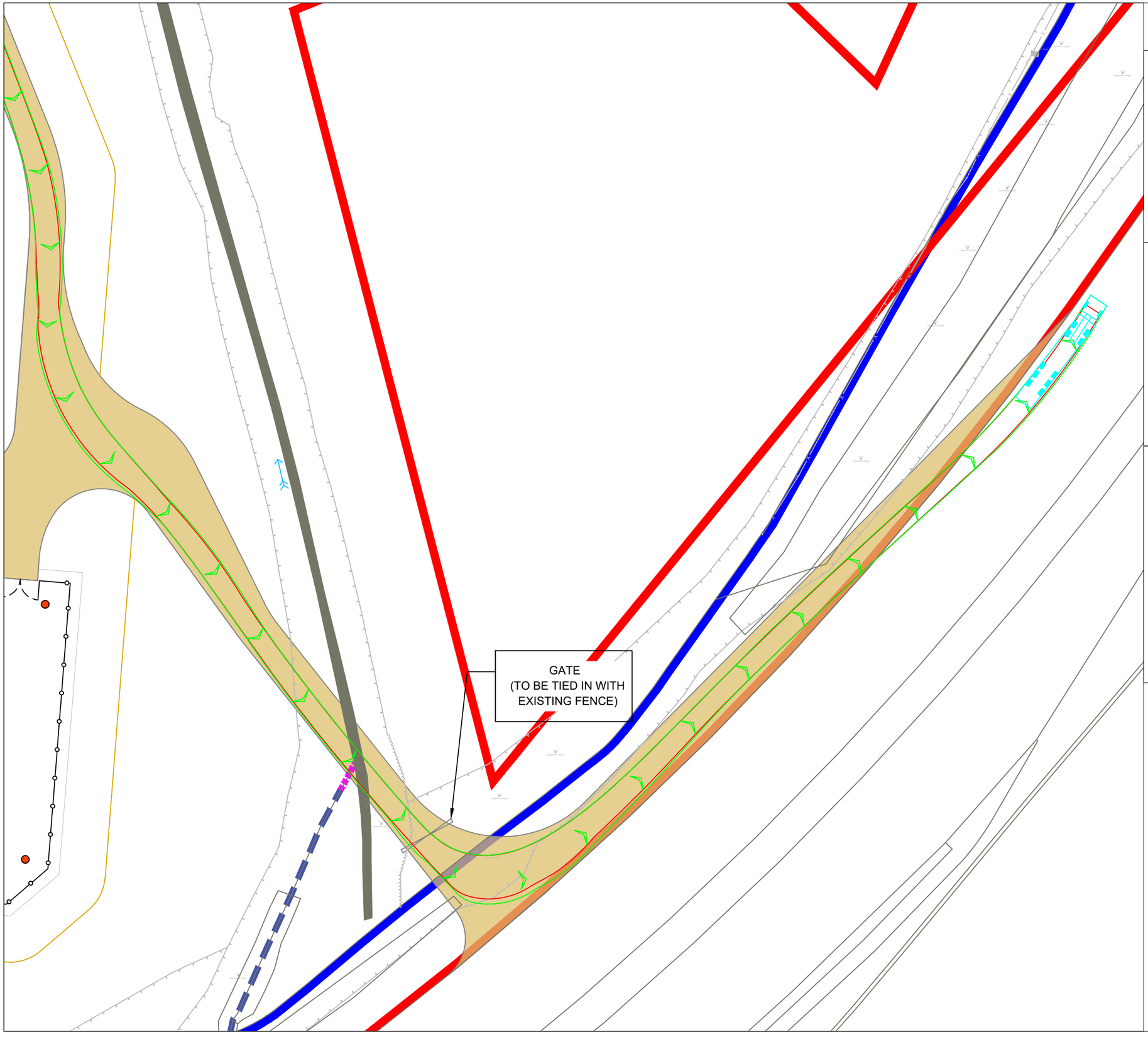

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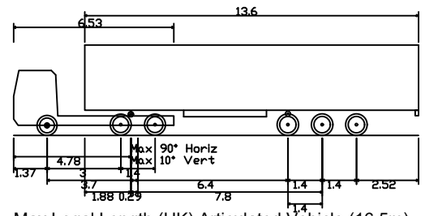

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-	DD.MM.YY	-	-	-
REV	DATE	DESCRIPTION	REVISED BY	APPROVED BY

DRAWING NAME:
Fairgreen BESS - Swept Path Analysis 16.5m HGV using Southeastern Egress

PROJECT:
Land North of Rayleigh Spur Roundabout, Basildon

CLIENT:
Renewable Energy Systems Ltd

DATE:	SCALE:	DRAWN BY:	APPROVED BY:
19.06.2025	1:500@A3	AJ	JK

DRAWING NUMBER: P24-3004-TR-SK05

PG OFFICE: BIR

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