Energy Storage System at Land North of Bronwylfa Road

Transport Statement

On behalf of **Innova Renewables Developments**

Project Ref: 332610070 | Rev: - | Date: November 2023

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1 Introduction

1.1 Brief

1.1.1 Stantec UK Ltd has been appointed by Innova Renewables Developments to prepare a Transport Statement (TS) to support a full planning application for an Energy Storage System (ESS) at land north of Bronwylfa Road, Rhostyllen, Wrexham.

1.1.2 The proposed ESS site area would cover an area of approximately 5.5ha and comprise of energy storage units, substation, site access, cable connection, landscaping, and ancillary infrastructure. As minimal vehicular trips will be generated on the surrounding highway network during the operational period of the ESS, the construction period will be the focus of this TS, as whilst the associated traffic impact will be temporary, it will generate more trips.

1.1.3 This TS therefore seeks to assess the impact of the construction and operation of the proposed ESS facility on the local transport network, and will examine the sustainable transport opportunities associated with the site where applicable. The TS has been produced in line with relevant national and local transport policies and guidance.

1.2 Report Structure

1.2.1 This report has been prepared to support the requirements of a full planning application, and has been structured as follows:

- Chapter 2 reviews the existing transport conditions at the site in terms of the local highway network and highway safety;
- Chapter 3 sets out the context for the development proposals in terms of transport policy and guidance;
- Chapter 4 outlines the scope and scale of the development proposals;
- Chapter 5 considers the forecast vehicular trip generation of the proposed development's construction and operational phases, and provides commentary on the potential impact on the local highway network;
- Chapter 6 provides a high-level Transport Implementation Strategy (TIS) which sets out the measures required; and
- Chapter 7 provides a summary and conclusion to the report.

2 Existing Transport Conditions

2.1 Site Location

2.1.1 The site is located approximately three kilometres southwest of Wrexham town centre, and approximately 250 metres northwest of Junction 3 of the A483, known as the Croesfoel Interchange.

2.1.2 The site comprises of 5.5ha of agricultural land, and is bounded to the north and east by a tree belt and to the south and west by hedgerows. A dismantled railway line and its associated embankment additionally front onto the site's northern boundary, and to the west there is a single-track lane which separates the site boundary from the neighbouring field and Bersham Cricket Club. The A483 lies to the east and is also elevated, with an associated embankment and mature vegetation.

2.1.3 The site and surroundings are shown on the plan which is included as **Appendix A**.

2.2 Access to Active / Sustainable Transport Opportunities

2.2.1 Whilst the site is free-standing and rural in nature, opportunities for access to active and sustainable travel modes such as walking, cycling, and travel via bus and rail are available albeit slightly limited.

2.2.2 There are currently no pedestrian footways along the B5097 to the west of the existing field access, which forms the site frontage, and there is a narrow, unlit footway on the eastbound carriageway which extends from this point over the bridge onto Vicarage Hill. At this point, lit footways of a reasonable width and quality continue eastbound into Rhostyllen. The B5098 is of a similarly rural nature, although a narrow footway is provided on the southbound carriageway between the B5097 and the B5605 Wrexham Road.

2.2.3 There are currently no dedicated cycle facilities in the immediate vicinity of the site, however it is considered that the surrounding highway network may be suitable for road cyclists.

2.2.4 The closest bus stops to the site are at Croesfoel Farm, on the B5605 Wrexham Road, and these stops are marked by dedicated lay-bys with cage markings, shelters, and timetabling information.

2.2.5 These stops are served by multiple routes operated by Arriva (2, 2A, 2C, 3, 4A, 4C, 5, 5C) and Lloyd's Coaches (T3 TrawsCymru, T3C). These services route to destinations including Wrexham, Oswestry, Penycae, Llangollen, and Cefn Mawr. There is good service coverage provided (either hourly or to coincide with the AM and PM network peaks) Monday to Saturday, with slightly more limited services operating on Sundays.

2.2.6 The nearest railway stations are in Wrexham (Wrexham General and Wrexham Central), where passengers can interchange and complete their journey to Rhostyllen / Bersham via bus.

2.2.7 It is therefore considered that there are options for operational staff / construction workers to travel to the site via active and sustainable means, although travel by these modes is considered to be unlikely to represent a significant proportion of trips due to nature of the proposed construction / site operation.

2.3 Local Highway Network

2.3.1 The strategic road network (SRN) in the region consists of the A483 which is managed by the North and Mid Wales Trunk Road Agent (NMWTRA). The A483 is a dual carriageway which connects northwards to Wrexham and Chester, and provides further connections onward to North Wales, Liverpool, and Manchester. Southbound, the A438 connects to Oswestry which allows further connections along the SRN to Shrewsbury and Birmingham.

2.3.2 Access to the A483 from the site is provided via the Croesfoel Interchange. This is a grade separated junction with a roundabout and on and off-slip roads in both directions. Wrexham Road, which comprises the western arm of the junction, provides access to the site via the B5098, which extends north from Wrexham Road to the B5097 as a single carriageway rural road, subject to a 50mph speed limit.

2.3.3 The site fronts onto the B5097 on its southern boundary. The B5097 is a typical rural road, subject to a 50mph speed limit, and is not street-lit adjacent to the site frontage. There is a short section of footway on the north side of the road that extends from the site to the east, across the A483 towards Rhostyllen. This connects to an existing Public Right of Way (PRoW) which crosses the site and runs north beyond the dismantled railway.

2.3.4 The A483, Wrexham Road, the B5098, and the B5097 will provide the main route to the site for the majority of vehicles. These roads are not subject to weight restrictions and are considered appropriate for normal construction traffic, i.e. heavy goods vehicles (HGVs).

2.4 Highway Safety

2.4.1 A review of personal injury collisions (PIC) has been undertaken using data from CrashMap (www.crashmap.co.uk) which is sourced directly from the Department for Transport (DfT). The latest five-year period (2017 – 2021) was reviewed for a study area comprising:

- The B5097, between the B5426 and the B5098;
- The B5426 Smithy Lane;
- The unnamed lane on the western boundary of the site;
- The B5098;
- Wrexham Road; and
- The Croesfoel Interchange.

2.4.2 The accident records indicate that there were 13 incidents recorded within the study period. Of these, ten incidents occurred on the Croesfoel Interchange, one incident occurred at the junction of the B5426 Smithy Lane and the B5605 Wrexham Road, one incident occurred at the western extent of the B5097, and one incident occurred at the junction of the B5098 and Vicarage Hill.

2.4.3 A scatter plot, as extracted from CrashMap, is provided in **Figure 2-1**.

2.4.4 The three incidents at the B5426 Smithy Lane / B5605 Wrexham Road, western extent of the B5097, and B5098 / Vicarage Hill were all categorised as a ‘Slight’ incident, and did not involve pedestrians or cyclists.

2.4.5 The remaining ten incidents occurred at the Croesfoel Interchange; of these eight incidents were categorised as ‘Slight’ and two incidents were categorised as ‘Serious’. Of the eight incidents categorised as ‘Slight’, one included a cyclist, three included a Goods Vehicle, and there were no incidents involving pedestrians. Of the two incidents categorised as ‘Serious’, one included a cyclist and a Goods Vehicle, and no pedestrians were involved.

2.4.6 No ‘Fatal’ incidents occurred within the study period.

2.4.7 A high-level review of these incidents does not indicate an obvious trend, and it is demonstrated that there were no incidents in the immediate vicinity of the site or along the site frontage. Therefore, based on professional judgement, it is concluded that there are unlikely to be any safety concerns or inherent design issues that would preclude or be exacerbated by the proposed development.

2.5 Summary

2.5.1 This chapter has reviewed the existing conditions in the vicinity of the site, and the following conclusions have been made:

- Due to the nature of the site, it is considered that there will be limited demand for active and sustainable modes of travel to and from the site due to the nature of the proposed construction / site operation. Notwithstanding this, it is considered that there are appropriate opportunities / facilities to support this.
- The site can be appropriately accessed via the B5098 and B5097 from the Croesfoel Interchange; this route is considered to be appropriate for private vehicles and for accommodating heavier construction and operational vehicles.
- A review of highway safety in the study area has demonstrated that there is unlikely to be any inherent safety issues on the surrounding network that could be exacerbated by the proposed development.

3 Review of Transport Policy and Guidance

3.1 Introduction

3.1.1 The transportation elements of the planning application submission need to be undertaken in a consistent manner, considering the policy background and pertinent transport strategies for both the immediate area and Wrexham as a whole. It is therefore important that the development proposals consider and are in broad accordance with policies and guidance.

3.2 National Policy

Planning Policy Wales (2021)

3.2.1 Planning Policy Wales (PPW), which is now in its eleventh edition (2021), seeks to "*set out the land use planning policies of the Welsh Government*" and comprises the main component of Welsh national planning policy.

3.2.2 PPW states that its "*primary objective… is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales*". Further, PPW seeks to *"encourage[] a wider, sustainable problem solving outlook which focuses on integrating and addressing multiple issues*", and:

"provide[] an opportunity to remove any actual or perceived problems in current approaches and stimulate and support innovative and creative ideas as well as high standards of evidence and assessment to underpin the preparation of development plans and strategies and individual proposals".

3.2.3 The concept of 'sustainable development' fundamentally underpins the purpose of PPW, and is defined as "*the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals*".

3.2.4 PPW additionally sets out the 'Key Planning Principles' in Figure 4; the most pertinent of these are as follows:

- *"Making best use of resources – The efficient use of resources, including land, underpins sustainable development. The planning system has a vital role to play in making development resilient to climate change, decarbonising society and developing a circular economy for the benefit of both the built and natural environments and to contribute to the well-being goals*".
- *"Facilitating accessible and healthy environments – Our land use choices and the places we create should be accessible for all and support healthy lives…*".
- *"Creating and sustaining communities – The planning system must work in an integrated way to maximise its contribution to well-being. It can achieve this by creating well-designed places and cohesive rural and urban communities which can be sustained by ensuring the appropriate balance of uses and density, making places where people want to be and interact with others. Our communities need the right mix of good quality / well designed homes, jobs, services, infrastructure and facilities so that people feel content with their everyday lives*".
- *"Maximising environmental protection and limiting environmental impact – Natural, historic and cultural assets must be protected, promoted, conserved and enhanced. Negative environmental impacts should be avoided in the wider public interest. This means acting in the long-term to respect environmental limits and operating in an*

integrated way so that resources and / or assets are not irreversibly damaged or depleted".

3.2.5 Within Chapter 4 *'Active and Social Places*', the PPW specifically refers to transport, stating that *"By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development*". It further states that *"The Welsh Government is committed to reducing reliance on the private car*" and that "*Delivering this objective will make an important contribution to decarbonisation* [and] *improving air quality"*.

3.2.6 Chapter 4 of the PPW additionally sets out guidance with regards to Transport Assessments, and states that *"Transport Assessments are an important mechanism for setting out the scale of anticipated impacts a proposed development, or redevelopment, is likely to have. They assist in helping to anticipate the impacts of development so that they can be understood and catered for appropriately*".

3.2.7 Para. 4.1.56 states that "*Planning applications for developments… must be accompanied by a Transport Assessment*" and that *"Transport Assessments provide the basis for negotiation on scheme details… as well as measures to limit or reduce levels of air and noise pollution. They should cover the transport impacts during the construction phase of the development, as well as when built and in use*".

Future Wales – The National Plan 2040

3.2.8 Future Wales is the national development plan for Wales, the current edition of which was published in February 2021, which seeks to set the direction of development in Wales to 2040. The Plan states that the main focuses are to address "*key national priorities through the planning system, including sustaining and developing a private economy, achieving decarbonisation and climate resilience, developing strong ecosystems and improving the health and well-being of our communities*".

3.2.9 The Plan notes that it is a *"spatial plan, which means it sets a direction for where we should be investing in infrastructure and development for the greater good of Wales and its people*" and "*makes clear the importance of planning new infrastructure and development in such a way that they are complementary rather than competing priorities, ensuring opportunities are maximised and multiple benefits are achieved*".

3.2.10 The following ten outcomes are identified as the ambitions of the Future Wales plan:

"A Wales where people live

- *… and work in connected, inclusive and healthy places,*
- *… in vibrant rural places with access to homes, jobs and services.*
- *… in distinctive regions that tackle health and socio-economic inequality through sustainable growth.*
- *… in places with a thriving Welsh language"*
- *… and work in towns and cities which are a focus and springboard for sustainable growth.*
- *… in places where prosperity, innovation and culture are promoted.*
- *… in places where travel is sustainable.*
- *… in places with world-class digital infrastructure.*

- *… in places that sustainably manage their natural resources and reduce pollution.*
- *… in places with biodiverse, resilient and connected ecosystems.*
- *… in places which are decarbonised and climate-resilient*".

3.2.11 With regards to transport, the Plan states that *"Our reliance on travelling by car is limiting the opportunity for physical activity and social contact to be built into people's everyday lives is exacerbating air and noise pollution, particularly along major routes and at busy destinations*".

3.2.12 It additionally states that "*Road transport is a major cause of air and noise pollution and it accounts for the vast majority of greenhouse gas emissions produced from the transport sector*".

3.2.13 The Plan then notes that:

"*The Welsh Government will be investing significantly to improve active travel and public transport. This needs to be combined with the implementation of policies in Planning Policy Wales which require development to be directed towards sustainable locations and designed to make it possible for everyone to make sustainable and healthy travel choices for their daily journeys*.

It will also require planning authorities to refuse planning permission for car-dependent developments which would otherwise encourage car use and undermine sustainable travel".

3.2.14 With specific regards to Wrexham, Policy 20 of the Plan notes that "*The Wrexham and Deeside area is the region's main centre of population, employment and services and is served by the main connectivity infrastructure… Strategic decisions on the location of key services and infrastructure should support existing settlements and be taken on a regional basis, ensuring that they are located in the most accessible and sustainable locations, support actions to address inequality and deprivation, and improve links to adjoining regions*".

Llwbr Newydd: the Wales Transport Strategy 2021

3.2.15 The Llwbr Newydd (Welsh Transport Strategy) was published in March 2021 and seeks to establish a *"long-term direction and three urgent and immediate priorities*" with regards to transport in Wales.

3.2.16 These priorities are as follows:

- "*Priority 1: bring services to people in order to reduce the need to travel – We will plan ahead for better physical and digital connectivity, more local services, more home and remote working and more active travel, to reduce the need for people to use their cars on a daily basis*";
- *"Priority 2: allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure – We will actively aim to achieve a shift away from private car use to more sustainable transport modes for the majority of journeys. We will invest in low-carbon, accessible, efficient and sustainable transport services and infrastructure that enable people to walk, cycle and use public transport, and low-emissions vehicles*"; and
- *"Priority 3: encourage people to make the change to more sustainable transport - We will encourage people to change their travel behaviour to use low-carbon, sustainable transport. We will do this by making sustainable transport more attractive and more affordable, and by adopting innovations that make it easier to use*".

Planning Policy Wales Technical Advice Note 18: Transport (2007)

3.2.17 The transport Technical Advice Note (TAN) 18 was prepared in 2007 to provide further detail to the PPW on matters such as integrating transport planning, the preparation of regional transport plans, and the design of developments.

3.2.18 Para 2.2. of the TAN notes that to respond to the challenges of the effect of increased road traffic on the environment, human health and economic competitiveness, the Welsh Government "*adopts a sustainable development approach*". It notes that the "*PPW and the Wales Transport Strategy both aim to secure the provision of transport infrastructure and services, which improve accessibility, build a stronger economy, improve road safety and foster more sustainable communities. This includes:*

- *integration of transport and land use planning;*
- *integration between different types of transport;*
- *integration of transport policy with policies for the environment, education, social justice, health, economic development and wealth creation*".

3.2.19 As part of this, the TAN highlights several sustainable development policy objectives, the most pertinent of which to this TS are as follows:

- *"promoting resource and travel efficient settlement patterns"*;
- *ensuring that new development and major alterations to existing developments include appropriate provision for pedestrians… cycling, public transport, and traffic management and parking / servicing"*; and
- *"ensuring that transport infrastructure or service improvements necessary to serve new development allow existing transport networks to continue to perform their identified functions*".

3.2.20 The TAN also makes specific provision for rural areas, noting that whilst *"The car is important for accessibility in rural areas*", "*Development in rural locations should embody sustainability principles, balancing the need to support the rural economy, whilst maintaining and enhancing the environmental, social and cultural quality of rural areas*".

3.2.21 With regards to traffic management, the TAN establishes that planning and transport objectives can be met through implementing measures which achieve outcomes such as "*reducing community severance, noise, local air pollution and traffic accidents*" and *"promoting safer road conditions in rural areas and reducing the impact of roads on the environment whilst maintaining access for rural businesses*".

3.2.22 Chapter 9 of the TAN specifically relates to Transport Assessments (TA), noting that they *"provide the information necessary to assess the suitability of an application in terms of travel demand and impact*". Para 9.2 states that "*The precise scope and content of each TA will depend on the scale, travel intensity and characteristics of the proposal*"" but that *"In general TAs should, as a minimum, provide information on the likely modal split of journeys to and from the site*".

3.2.23 Chapter 9 additionally confirms that the transport assessment process should *"include the production of a 'Transport Implementation Strategy' (TIS) for the development* [which] *should set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them*".

3.3 Local Policy

Wrexham Unitary Development Plan 1996-2011

3.3.1 The Wrexham Unitary Development Plan (UDP) was adopted in February 2005, and remains the most current development strategy for Wrexham Borough County in the interim period to the publication and adoption of the Local Development Plan (LDP2 2013-2018),

3.3.2 The UDP establishes its purpose to "*provide[] a framework for local decision making and the reconciliation of development and conservation interests in order that land use changes proceed coherently and with maximum community benefit*".

3.3.3 The UDP additionally confirms that it comprises *"The Strategy which outlines the Council's broad intention for development in the area and provides a framework for more specific policies and proposals*", and *"Specific policies accompanied by reasoned justifications, which expand on the strategic vision for the County Borough and provides detailed guidance for the development and other use of the land*".

3.3.4 Within Chapter 3 of the UDP, the approach to sustainable development is established as follows:

"Future land development land needs are satisfied in a controlled and incremental manner and new development is balanced against the interests of conservation and rehabilitation. Environmental and financial costs and dependence on long distance car journeys are minimised".

3.3.5 The following strategic policies that are pertinent to the proposed development are also identified:

- Policy PS2: *"Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment*".
- Policy PS8: *"The transport network will be developed by providing an integrated range of travel options to and from principal residential, commercial, employment and education centres by making best use of the existing road and rail network, including, where necessary, the provision of facilities for both passenger and freight interchange and by the encouragement of public transport, cycling and walking*".
- Policy PS12: *"Proposals for the generation of energy from renewable sources will be supported provided that the wider environmental benefits are not outweighed by any detrimental impacts of the proposed development (including any electricity transmission facilities needed) on the landscape, public safety, and the local environment*".

3.3.6 Policy GDP1 (General Development Principles) also establishes that:

"All new development should:-

a) Ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality.

b) Take account of personal and community safety and security in the design and layout of development and public / private spaces.

c) Make the best use of design techniques, siting and orientation in order to conserve energy and water resources.

d) Ensure safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality.

e) *Ensure that built development is located where it has convenient access to public transport facilities, and is well related to pedestrian and cycle routes wherever possible.*

f) *Ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour, or vibration arising from development*.

g) *Secure public services (e.g. gas, water, electricity) to development at minimum public cost.*

h) *Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest.*

i) *Ensure that development does not result in, or is subject to, flooding, soil, erosion, landslides or contamination, either on or off the site.*

j) *Have regard to the need to safeguard those areas that possess a strong Welsh cultural and/or linguistic identity from development that could harm this identity.*

k) *Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area*".

North Wales Joint Local Transport Plan 2015

3.3.7 The North Wales Joint Local Transport Plan (LTP) was jointly produced by the six north Wales local authorities of: Conwy County Borough Council, Denbighshire County Council, Flintshire County Council, Gwynedd Council, Isle of Anglesey County Council, and Wrexham Borough County Council.

3.3.8 The LTP establishes that the vision for transport in north Wales is to "*remove barriers to economic growth, prosperity and well-being by delivering safe, sustainable, affordable and effective transport networks*".

3.3.9 Within the LTP, the outcomes which are targeted up to 2030 are identified as follows:

- *"Connections to Key Destinations and Markets: Support for Economic Growth through an improvement in the efficiency, reliability, resilience, and connectivity of movement, including freight, within and between North Wales and other regions and countries (with a particular focus on accessibility to the Enterprise Zones and an improvement in the vitality and viability of towns and other key centres*);
- *Access to Employment: Providing inclusive and affordable access to employment and training (with a focus on the most deprived communities);*
- *Access to Services: Promotion of social inclusion and well-being through inclusive and affordable access to education, health services and other key services and facilities (with a focus on the most deprived communities);*
- *Increasing Levels of Walking and Cycling: for both necessary travel and recreation, by residents and visitors;*
- *Improved Safety and Security: of both actual and perceived safety of travel by all modes.*
- *Benefits and Minimised Impacts on the Environment: the potential for transport improvements to positively affect the local and global natural and built environment will have been maximised and negative impacts minimised, including adaptation of the effects of climate change*".

3.4 Conclusions

3.4.1 A full review has been undertaken to identify the national and local transport and planning policies / guidance documents that are most applicable to the proposed development. The remainder of this report will demonstrate that the proposed development scheme is compliant with current national and local policy.

3.4.2 The nature of the proposed development means that it is somewhat removed from the nearby built-up area, meaning that available sustainable travel options are more limited. However, during the construction period, measures are proposed to be put in place in order to reduce the amount of vehicle trips as set out in proceeding chapters.

4 Proposed Development

4.1 Proposed Development

4.1.1 The proposed development comprises a 400MW ESS facility with substation, which will connect to the National Grid to provide storage for electricity during peak production for use during peak demand. In simple terms, the facility would enable energy from renewables, like solar and wind, to be stored and released back to the grid when the power is needed most.

4.1.2 The facility consists of the following equipment:

- 246 x Energy Storage containers;
- 123 x MV Skids;
- 4 x 33/132kV Compounds; and
- 1 x 400Kv Substation and concrete bases for batteries to be constructed onsite.

4.2 Access Strategy

4.2.1 Access to each Energy Storage container will be provided through a network of internal access tracks, which will accommodate the majority of construction movements as well as the future maintenance requirements of the site. The site layout is shown in **Appendix A**.

4.2.2 The primary vehicle access for the construction phase of the development is provided at the existing access of the B5097. The access layout is shown on **Stantec Drawing STN-HGN-ZZ-DR-H-5501** provided as an appendix.

4.2.3 Visibility splays of 2.4 metres x 160 metres have been shown to be achievable at the junction between this access and the B5097. This is in line with the Design Manual for Roads and Bridges (DMRB) requirement for a design speed in line with the 50mph speed limit that the B5097 is subject to along the site frontage.

4.2.4 Swept path analysis has been undertaken for construction traffic, including articulated HGVs, for this access junction. This is shown on **Stantec Drawing STN-HGN-ZZ-DR-H-5502**, which is also provided as an appendix. The analysis demonstrates that the swept paths allow HGVs to turn into / out of the access from all directions, although in some instances, HGVs may have to use the oncoming lane to complete the turning movement.

4.2.5 A secondary access is also proposed off the unnamed lane that runs north from the B5097 along the western boundary of the site, and a temporary construction compound is proposed in the field to the north of the new access road.

4.2.6 Some enabling works are required to facilitate delivery of the main substation building to the site. A permanent haulage road is required in the field immediately to the east of Bersham Cricket Club, to allow the delivery vehicle for the substation to access the substation location without tracking through the main site area.

4.2.7 During the operational phase of the development, primary access will be taken from unnamed lane on the western boundary of the site.

4.3 Access Routing

4.3.1 Vehicles will route towards the site via the strategic road network (SRN) on the A483 either from the north or the south, and exit onto the local highway network via the western arm of the Croesfoel Interchange to the southeast of Rhostyllen (B5605 Wrexham Road). Vehicles will

then route north onto the B5098, up to the junction with the B5097 which the site fronts onto. Access will then be taken either from the B5097 or the unnamed lane on the western site boundary as outlined in **Section 4.2**. Egress from the site will follow the same route.

4.3.2 This will prevent vehicles from routing west of the unnamed lane, or east into / through Rhostyllen, and will therefore ensure that the potential impact from the construction or operation of the site in terms of trip generation is minimised on the local highway network and the communities in the vicinity of the site.

5 Traffic Generation

5.1 Construction Period

5.1.1 The construction of the ESS will be carried out over the course of approximately 24 months, and will include works such as site preparation, the erection of security fencing, assembly, and the installation of the substation and cable works.

5.1.2 It has been advised that there will be a maximum of 55 construction workers on site at any given time, and that 50% are projected / targeted to either lift-share or use the minibus transport that will be provided to travel to and from the site, with the remainder arriving by private vehicle. This would therefore suggest that there could be in the region of 30 to 40 additional trips on the local highway network at the start and end of the day, or 60 to 80 additional two-way trips, as a result of construction workers travelling to and from the site.

5.1.3 The origin of the workforce is unknown at this stage, but regardless of this it is anticipated that they will use local accommodation and transport provided by minibus wherever possible. It is anticipated that the majority of trips will take place in the morning and evening peaks, however, it is also anticipated that there will be a negligible number of trips throughout the working day though there may be some additional visitors to the site during the construction period.

5.1.4 With regards to the number of trips generated by site delivery and servicing, **Table 5-1** below seeks to establish the main HGV construction movements associated with the implementation of the scheme and the corresponding number of forecast trips (as advised by Innova Renewables Developments).

Item	Quantity per Load	Requirement (Approx.)	Total Two-Way Trips
Mobilisation, site set-up and welfare	-	-	188
Battery & MV Skid foundations	20 tonnes	2,330 tonnes aggregate	116
Battery & MV Skid units	1	246 Battery blocks 123 MV Skid blocks	369
Stone crush between units	20 tonnes	5,554 tonnes aggregate	278
Cabling	-	-	888
33-132kV compound	-	5	160
400kV Substation plant delivery	-	-	81
400kV Substation general deliveries	-	-	540
400kV Cable plant delivery	-	-	102
400kV Cable general deliveries	-	-	390
Total	-	-	**3,716**

Table 5-1: HGV construction trips

5.1.5 It is also anticipated that there will be up to five LGV movements per day bringing smaller equipment and contractors to the site. Based on an even distribution of trips over the construction period, and assuming a 22-day working month, this therefore translates to an average of 13 two-way LGV / HGV trips per day.

5.1.6 The scheme additionally requires the delivery of two transformers via six abnormal load deliveries. This vehicle requires abnormal load specialists to make arrangements for the delivery route and to manoeuvre the vehicle, and will also require road closures and an escort which these specialists will arrange.

5.1.7 The total number of two-way trips that are likely to be anticipated over the course of a working day is summarised in **Table 5-2** below. This is based on an even distribution of trips over the course of the 24-month construction period, and additionally assumes a 22-day working month.

Aspect of Construction Traffic	Total Number of Two-Way Trips per Day
Construction staff	60 – 80 two-way trips
Delivery / servicing	13 two-way trips
Abnormal loads	6 two-way trips (in total for construction period)
Total	**79 – 99 two-way trips**

Table 5-2: Summary of anticipated construction trips

5.1.8 This is ultimately considered to represent a marginal impact on the operation of the local highway network on the basis that there are few receptors in the area or on the established vehicle route likely to be impacted by the increase in traffic, and the proximity to the SRN will ensure the appropriate routing of traffic to avoid any impact on communities in the vicinity of the site.

5.1.9 The high-level Transport Implementation Strategy (TIS) set out in **Chapter 6** seeks to establish how the potential impact of the construction traffic will be managed.

5.2 Operational Traffic

5.2.1 The majority of traffic will be generated during the construction period of the development. In the scheme's operational phase, it is considered that there will be limited access requirements for the site, which will be restricted to maintenance requirements only.

5.2.2 On this basis, trips during the operational phase of the scheme are expected to be approximately 2 (two-way) trips per month. Therefore, due to the nature of the site, it is anticipated that these trips will likely be made by private car / van.

6 Transport Implementation Strategy

6.1 Introduction

6.1.1 This chapter seeks to provide a high-level Transport Implementation Strategy (TIS) as required by '*Technical Advice Note 18: Transport*' of Welsh planning policy.

6.1.2 As established in the TAN, a TIS *"should set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them*". This includes details on matters such as access, parking restrictions, or promotional measures.

6.1.3 It is considered, however, that the only significant impact of the proposed development will be during the construction phase, and that there is a limited scope for the introduction of measures which will significantly reduce the number of vehicle trips. This chapter will therefore focus on how the development will ensure appropriate movement of vehicles on the network and any strategies for reducing the number of construction worker trips made by private car, without the requirement for modal share targets or a monitoring mechanism due to the short temporal scope of any potential impact.

6.2 Traffic Management

6.2.1 As established in **Section 4.3**, construction vehicles will route towards the site from the A483 at the Croesfoel Interchange west along Wrexham Road, and north along the B5098 to the B5097. Vehicles will therefore use the A483 to travel to / from the site on the basis that the SRN will be able to appropriately accommodate the volume / HGV composition of the construction traffic flow and will prevent impact on the nearby community in Rhostyllen. The main site construction access would be in the same position as the primary access, though it is likely to take a more temporary form prior to completion of the construction phase. The only exception to this would be construction traffic associated with the delivery of the substation, for which an abnormal load assessment has been instructed separately by the client.

6.2.2 No construction traffic is proposed to travel west of Bersham Cricket Club, nor run any further west along Wrexham Road than the junction with the B5098. Further to this, no construction traffic is proposed to be permitted to run east of the A483 / Croesfoel Interchange in the vicinity of the site where applicable. The proximity of the site to the SRN and routing of vehicles means that the impact on the local highway network and local residents is likely to be minimal.

6.2.3 The delivery route for the abnormal load vehicle will be provided by a specialist company. Full details of the delivery will be in their information pack. Drawings showing the swept path of the abnormal load for access into the site are shown in **Stantec Drawing STN-HGN-ZZ-DR-H-5505** which is provided as an appendix.

6.2.4 Temporary signage will be provided to direct deliveries onto the correct routes, and to advise drivers in the area to be aware of the presence of construction traffic. Signs will be located on the approaches to the site from the Croesfoel Interchange, with signs at the start of Wrexham Road, at the junction between the B5098 and the B5097, and at the access to the site.

6.2.5 There is potential for the use of delivery slots during particularly busy periods. HGV drivers would be instructed to call the site office to confirm their delivery slot when they know their estimated time of arrival in order to ensure that there is sufficient room on-site to accommodate their vehicle. HGV delivery vehicles could wait either at the 'Esso Rontec Ruabon' service station if coming from the south, or at the layby approximately 1.5 kilometres from the Croesfoel Interchange if coming from the north, unless other alternative arrangements are made. This solution would prevent waiting vehicles from blocking the B5097.

6.2.6 Marshalls with radio communication to the site would be employed and stationed at the site access points to manage and direct traffic movements, and to accommodate safe access and egress.

6.2.7 Notice boards would be placed at key locations to provide details of the contractor and site manager emergency telephone numbers.

6.2.8 A temporary construction compound would be set up in the field to the west of the unnamed lane to provide a hardstanding to store materials, a staff parking area, and to accommodate welfare buildings. The parking area provided for site employees would ensure that parking on the B5097 is avoided and the route is therefore unobstructed.

6.3 Travel Behaviour Measures

6.3.1 As previously identified, 50% of construction worker trips are projected / targeted to either lift-share or use the minibus transport that will be provided to travel to and from the site, and it is therefore considered that these modes have the greatest potential for further modal shift.

6.3.2 Construction staff will be encouraged to lift share or make use of minibus travel to limit the number of light vehicle trips generated and therefore minimise the impact on the surrounding network. A staff location database will be produced and circulated to staff (on an opt-in basis) so that lift sharing opportunities can be identified and actioned. The database will be maintained and updated as required during the construction phase. Information on the minibus (such as meeting points, times of journeys etc.) will also be circulated to all staff.

6.3.3 All construction workers will be made aware of the potential to travel to the site via active and sustainable means. Timetables and route information will be made available to any workers contemplating travelling to work by rail or bus, as part of a comprehensive scheme to encourage the use of public transport amongst contractors.

6.3.4 All worker parking requirements will be accommodated within the site compound to prevent obstructions on the local highway network.

7 Summary and Conclusion

7.1 Summary

7.1.1 This Transport Statement was prepared by Stantec UK Ltd to support a full planning application for an Energy Storage System (ESS) on land north of Bronwylfa Road, Rhostyllen, Wrexham.

7.1.2 The main findings of the TS are summarised below:

- The proposed development will comprise an ESS on land to the north of Bronwylfa Road.
- Access to the site during the construction phase will be primarily achieved via the improved existing field access off the B5097, and all traffic will be expected to route via the SRN at the Croesfoel Interchange to avoid any impact on local settlements in the area. During the operational phase, access will primarily be taken from the unnamed lane that runs north from the B5097 along the western boundary of the site.
- The existing highway network in the vicinity of the site is in good condition, and can appropriately accommodate the anticipated volume and light / heavy composition of traffic.
- Based on the existing conditions on the surrounding highway network, and a review of personal injury collision (PIC) history within the area, it is not envisaged that the proposed development will result in or be precluded by any highway safety concerns.
- There are reasonable opportunities for construction workers to travel to and from the site via active and sustainable means, including via public transport.
- The proposed development is broadly compliant with transport related policies at a national and local level.
- The scheme is forecast to generate in the order of 79 to 99 total two-way construction related vehicle trips per day on average, which is not considered to result in a material impact on the operation of the local highway network or impact upon any local settlements / receptors particularly as construction is anticipated to only take place over the course of approximately 24 months.
- A maximum of 55 construction workers are proposed to be on site at any given time, and that 50% are projected / targeted to either lift-share or use the minibus transport that will be provided to travel to and from the site with the remainder expected to arrive by private vehicle.
- In the scheme's operational phase, it is considered that there will be limited access requirements for the site, which will be restricted to maintenance requirements only. On this basis, trips during the operational phase of the scheme are expected to be approximately 2 (two-way) car / van trips per month.
- A high-level TIS has been prepared to establish the measures which will be put in place to ensure the appropriate movement of traffic on the network and on-site measures (parking restrictions, delivery management etc.), and to additionally establish how the number of private vehicle trips generated by construction workers could be reduced.

7.2 Conclusion

7.2.1 Considering the findings of the TS outlined above, with regards to the short temporal scope of any potential construction traffic related impact and the establishment of an appropriate strategy, it is concluded that the proposed development is acceptable in highway and transport terms.

Figures

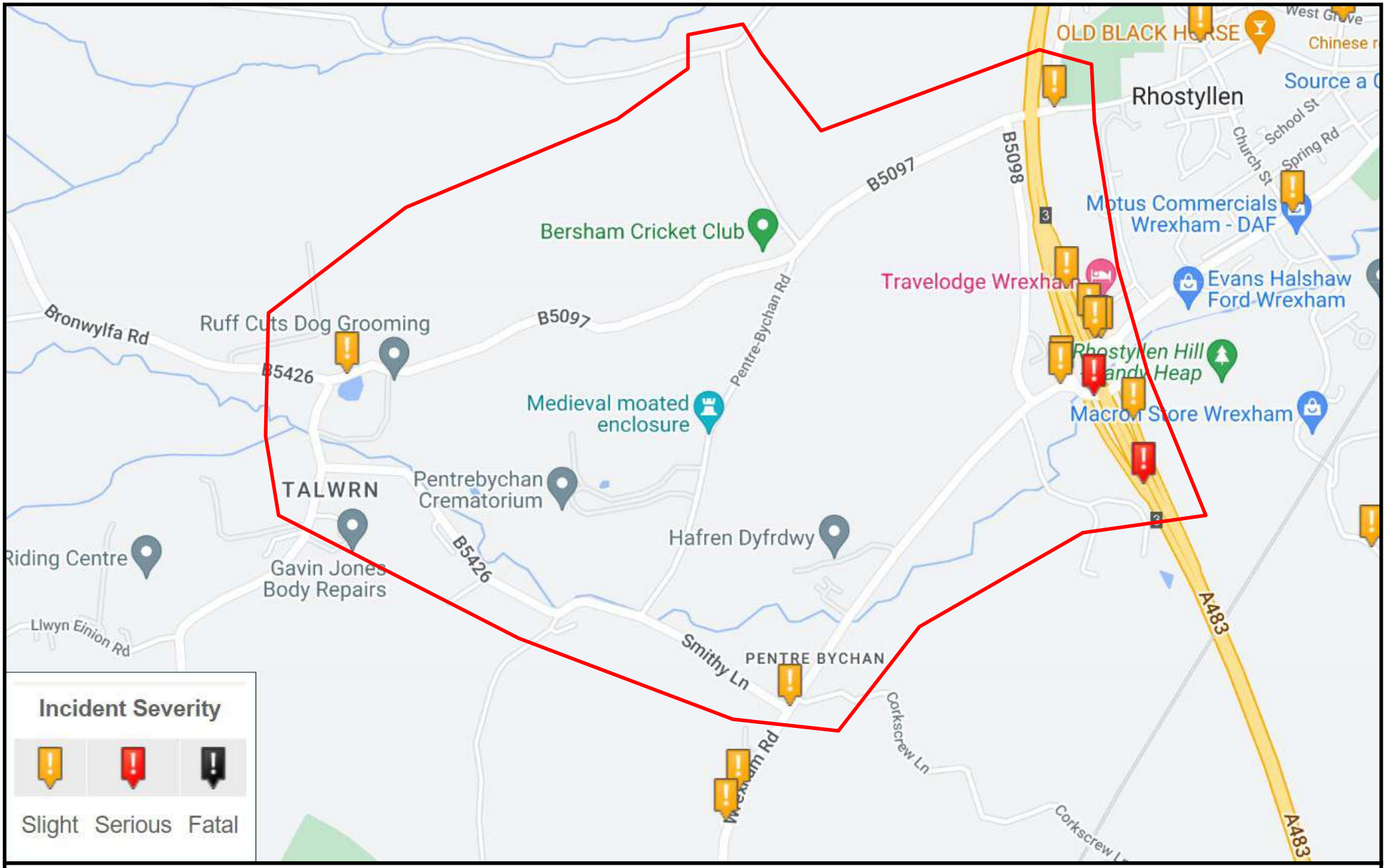


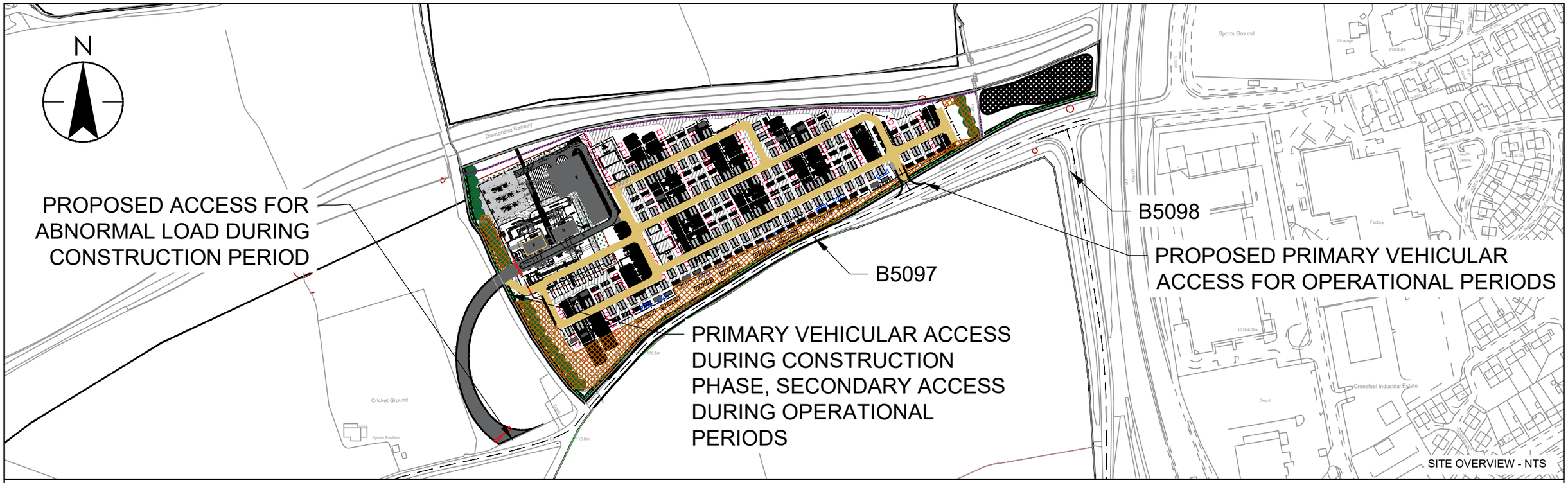
Figure 2-1 **PIC Scatter Plot**

Source: **CrashMap 2023 (www.crashmap.co.uk)**

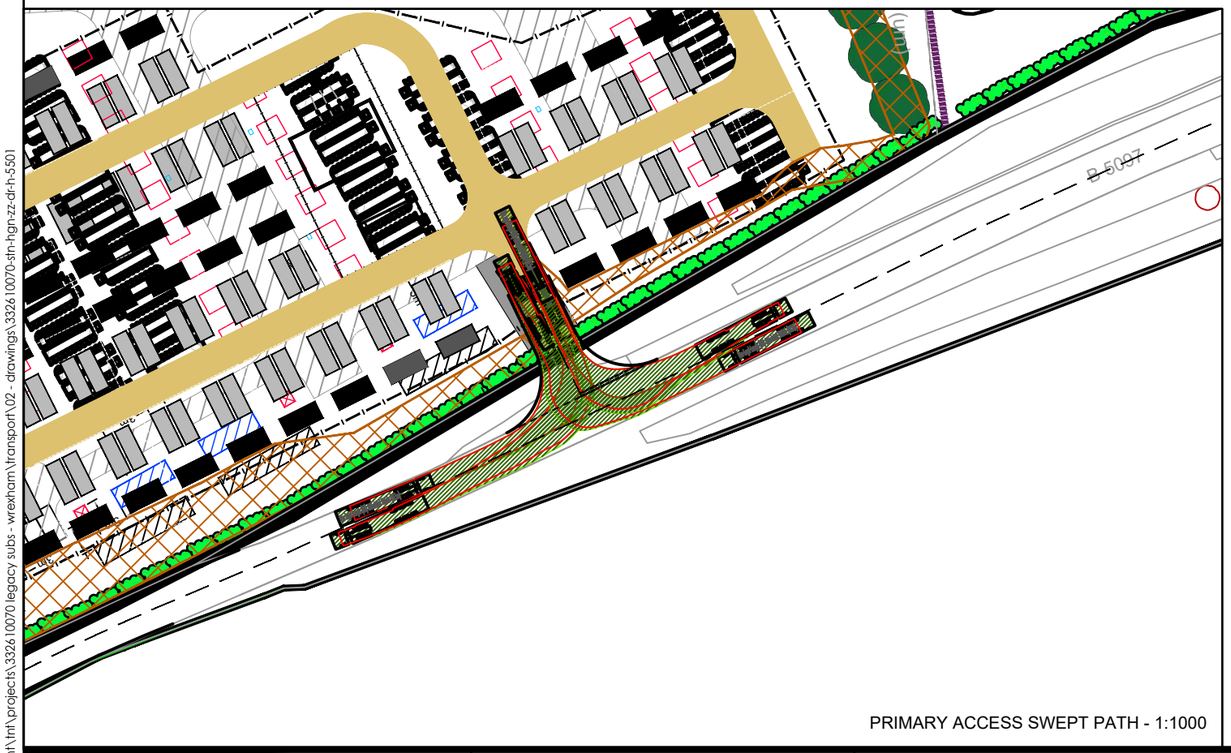
Drawn: **NL**

Date: **15/11/2023**

Drawings



SITE OVERVIEW - NTS



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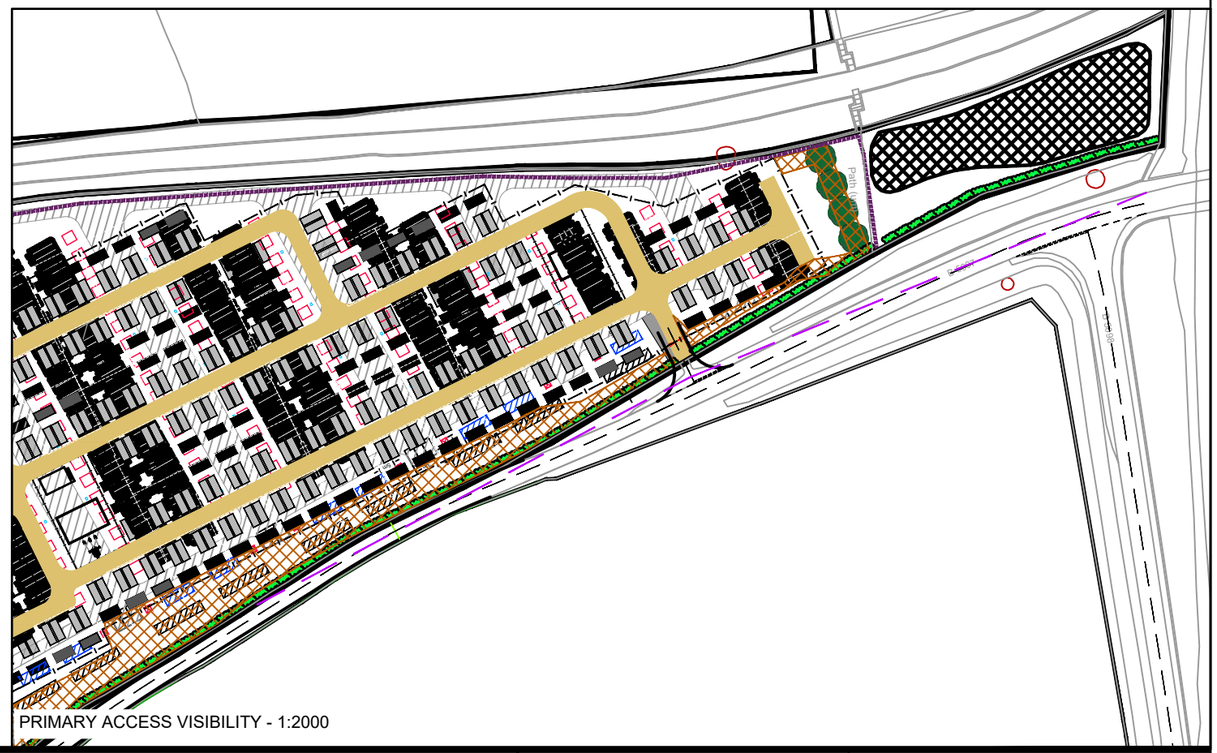

PRIMARY ACCESS VISIBILITY - 1:2000

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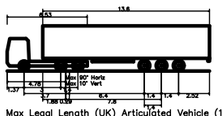

Max Legal Length (UK) Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.881m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

KEY:

- RED LINE BOUNDARY
- HMPE BOUNDARY INTERPRETED BY STANTEC
- 2.4m x 160mVISIBILITY SPLAYS IN ACCORDANCE WITH DMRB CD123 3.8 & DMRB CD109 TABLE 2.10 BASED ON 50MPH POSTED SPEED LIMIT

Client/Project:
INNOVA RENEWABLES DEVELOPMENTS
ENERGY STORAGE SYSTEM AT LAND NORTH OF BRONWYLFA ROAD
Project No.:
332610070

Title
PROPOSED ACCESS LOCATIONS WITH VISIBILITY SPLAYS

Revision:	Date:	Drawing No.
	2023.11.15	STN-HGN-ZZ-DR-H-5501

Plotted: 15.11.2023 2023.11.15 4:08:04 PM By: Cook, Jacob
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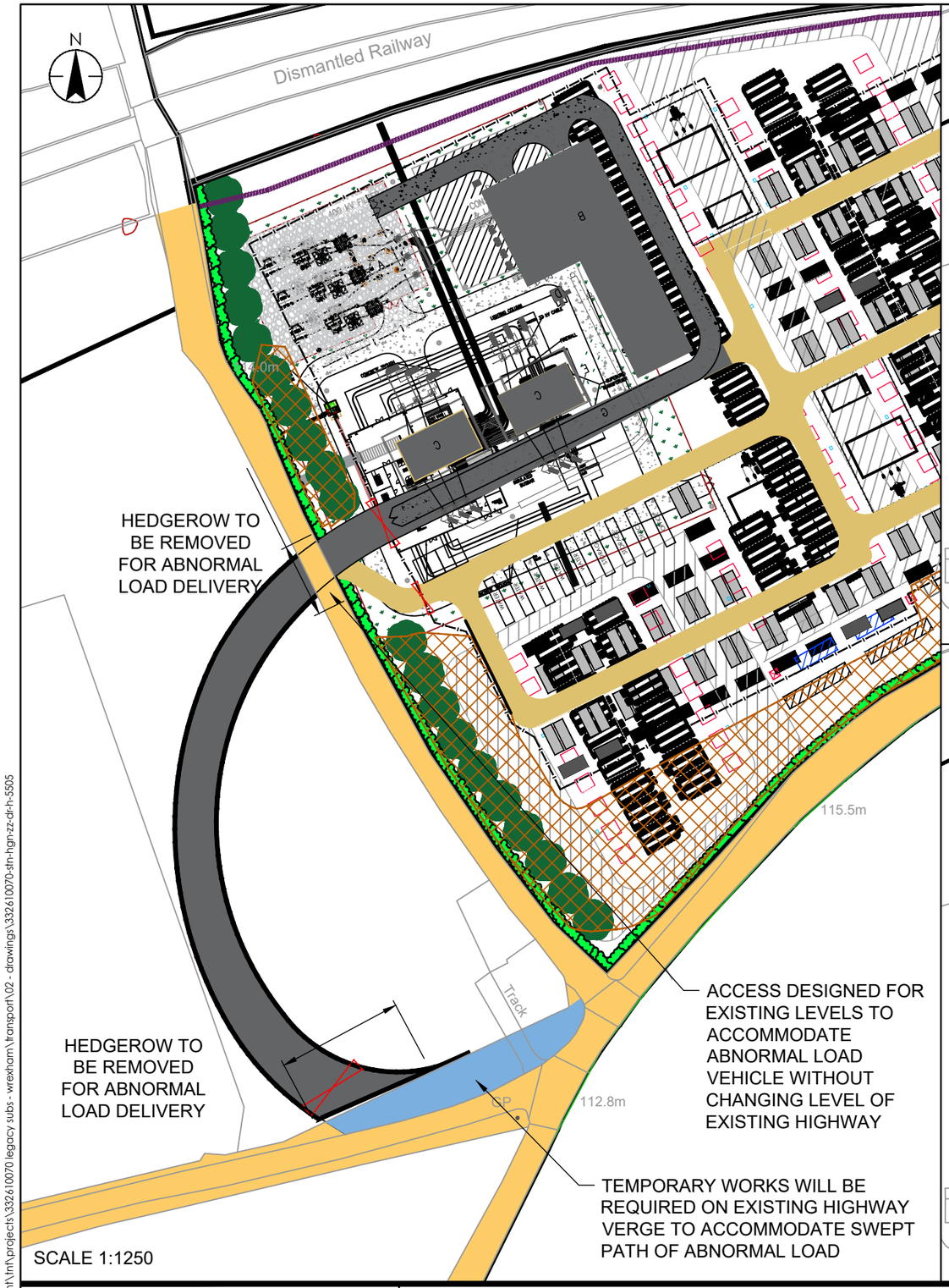
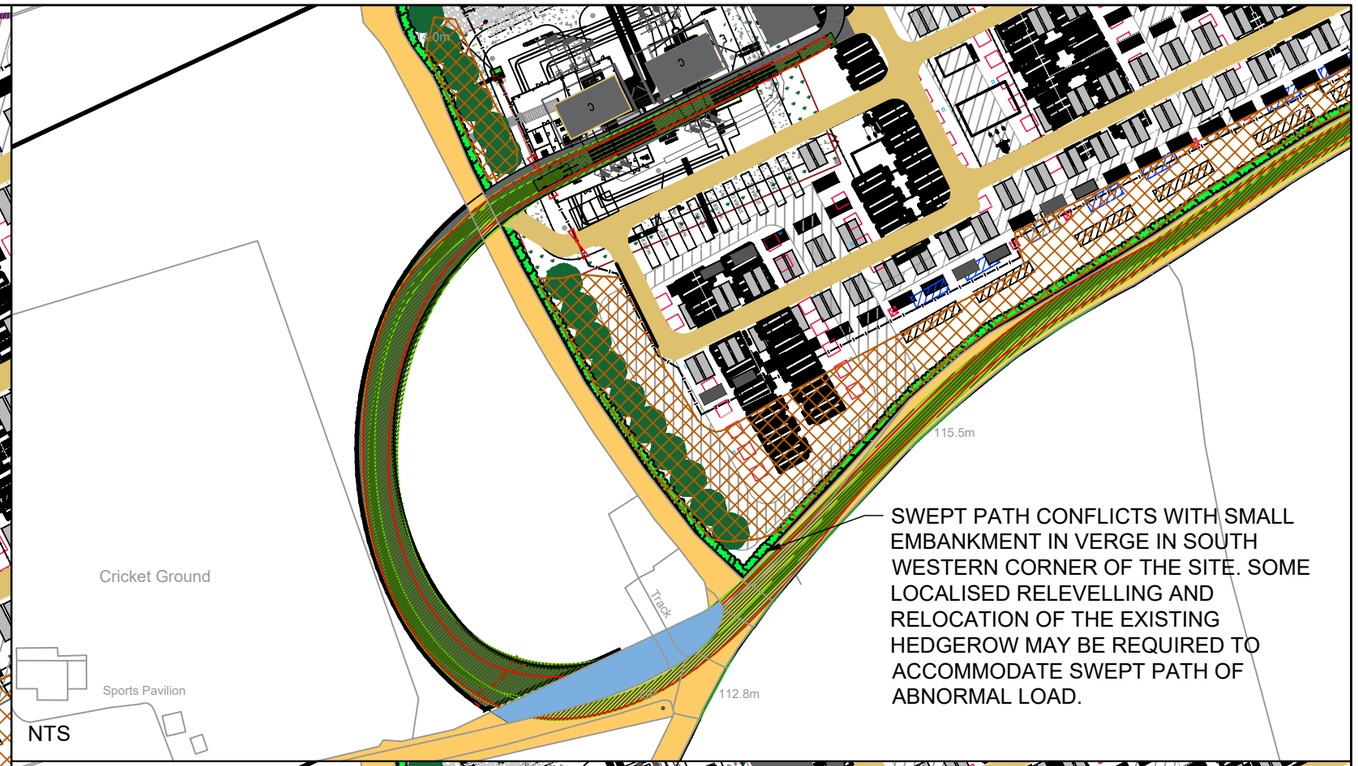
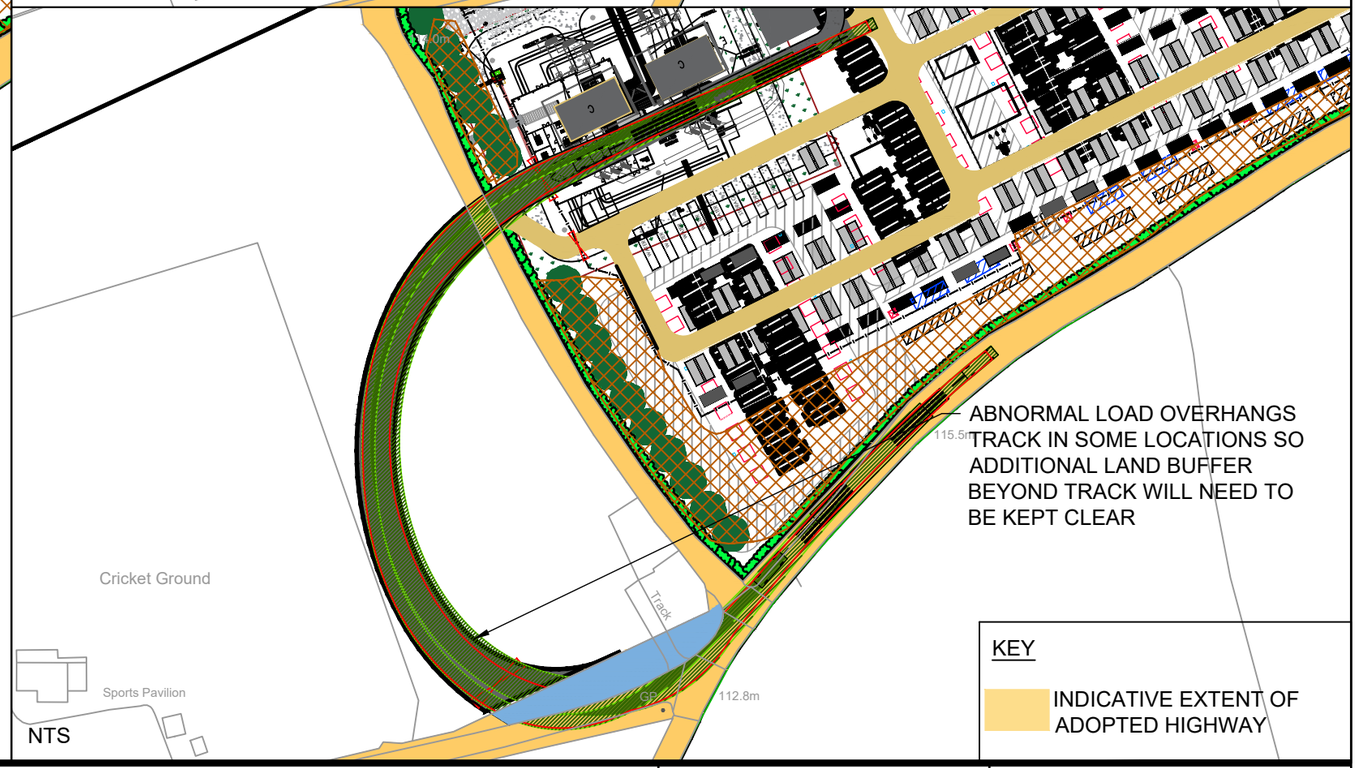
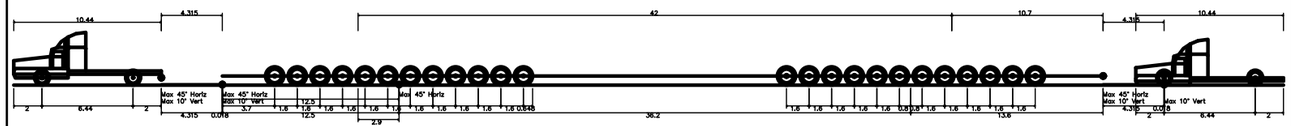






KEY

INDICATIVE EXTENT OF ADOPTED HIGHWAY



Copy Of Girder Trailer

Overall Length	89.810m
Overall Width	5.000m
Overall Body Height	3.725m
Min Body Ground Clearance	0.015m
Max Track Width	3.700m
Lock to lock time	6.00s
Wall to Wall Turning Radius	23.000m

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Client/Project:
INNOVA RENEWABLES DEVELOPMENTS
ENERGY STORAGE SYSTEM AT LAND NORTH OF BRONWYLFA ROAD
Project No.:
332610070

Title
ABNORMAL LOAD TRACKING - TEMPORARY ACCESS ARRANGEMENT

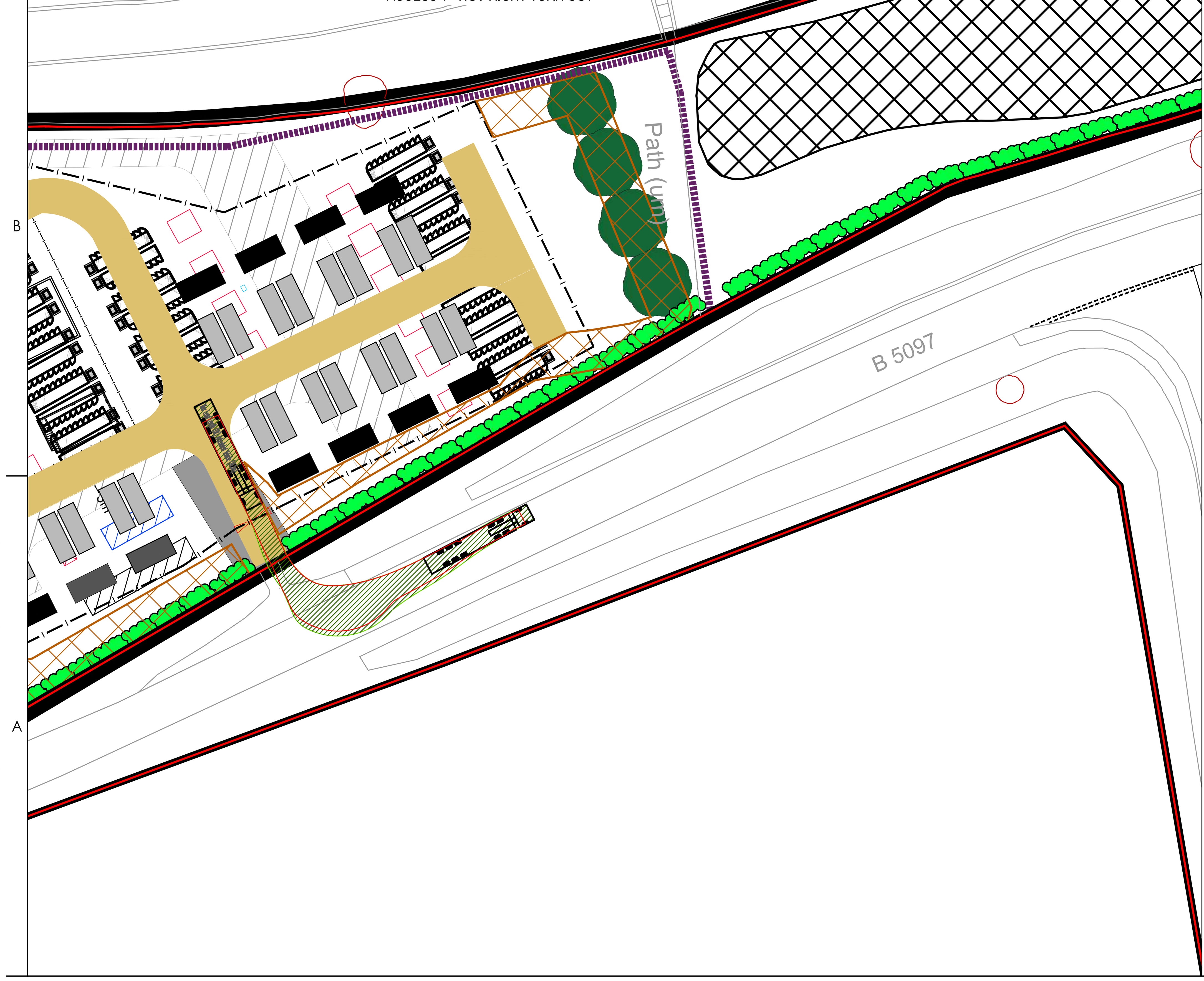
Revision:	Date:	Drawing No.
P02	2023.08.03	STN-HGN-ZZ-DR-H-5505

Plotted: 15.11.2023 2023.11.15 4:10:16 PM By: Cook, Jacob
ORIGINAL SHEET - ISO A3 \\pba.int\tnf\projects\332610070 legacy subs - wrexham\transport\02 - drawings\332610070-stn-hgn-zz-dr-h-5505

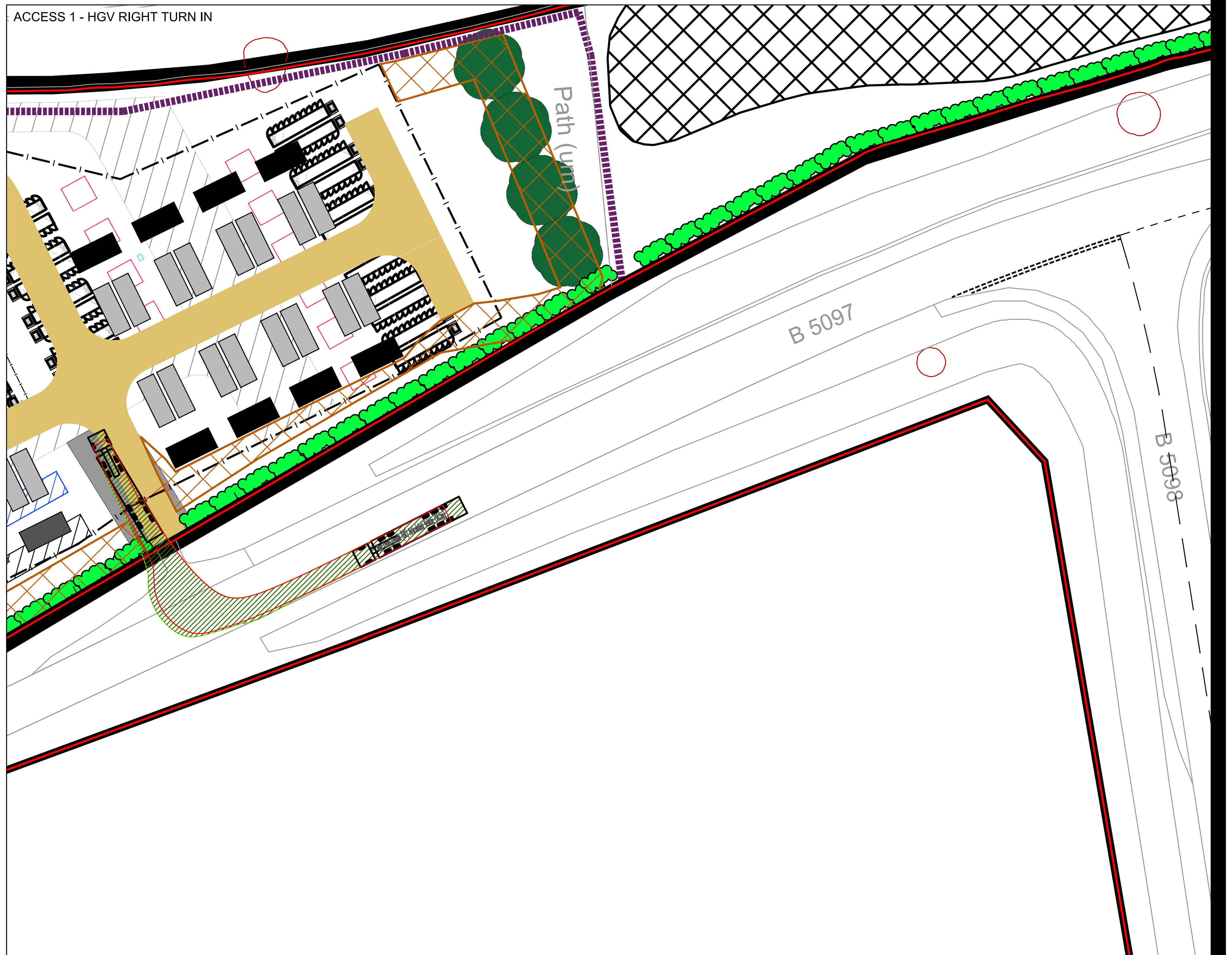
ACCESS 1 - HGV LEFT TURN IN

ACCESS 1 - HGV RIGHT TURN OUT

ACCESS 1 - HGV RIGHT TURN OUT



ACCESS 1 - HGV RIGHT TURN IN



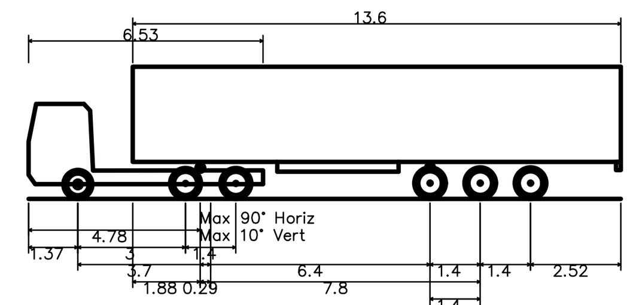
0 10 20 30 40 50m

SCALE 1:500

Notes

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

VEHICLE DETAILS



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

KEY:

RED LINE BOUNDARY

HMPE BOUNDARY INTERPRETED BY STANTEC

N

Issued/Revision	By	Appd	YYYY.MM.DD
P01 FIRST ISSUE	JHo	JB	2023.05.09

Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
JC	JC	JHo	2023.05.09

Issue Status

S2 - FOR INFORMATION

This document is suitable only for the purpose noted above.
Use of this document for any other purpose is not permitted.

Client/Project Logo

Client/Project

INNOVA RENEWABLES DEVELOPMENTS

ENERGY STORAGE SYSTEM AT LAND NORTH OF BRONWYLFA ROAD

WREXHAM

Title

SWEPT PATH ANALYSIS

MAX LENGTH HGV

Project No. 332610070

A1 Scale 1:500

Revision P01

Drawing No. STN-HGN-ZZ-DR-H-5502

Appendix A Site Location and Layout

KEY:

- Site Boundary
- MV Skid
- Energy Storage Container
- 400kV Substation
- 33kV Bay
- Access tracks
- PRoW
- 10m Wide Woodland Structure
- Hedgerow Enhancement
- Fenceline
- Access Gate
- Root Protection Zone

General Information:

Total Capacity: 492MW

novus

DATE:	03/08/2023
PROJECT TITLE:	Legacy
DRAWING TITLE:	Layout Plan
DRAWING VERSION NUMBER:	L8
SCALE:	1:2000
PAGE SIZE:	A3
DRAWN BY:	DD
APPROVED BY:	WG