# Construction Traffic Management Plan

DOCUMENT REF:  EAST CLAYDON BESS CTMP – REV 3

# East Claydon Battery Energy Storage Scheme

# 1. Introduction

It is proposed that agricultural land to the southeast of the existing East Claydon Substation in Buckinghamshire be developed to create a Battery Energy Storage System (BESS). This will be connected to the National Grid via East Claydon Substation and will enable electricity generated from renewables (solar and wind) to be stored during times of peak generation and then released back to the National Grid during periods of peak customer demand.

The purpose of this document is to identify how construction traffic including site personnel movements will be routed to the East Claydon BESS site and how such traffic will be safely controlled by the developer (Statera Energy) and its sub-contractors.

Whilst the document covers some of the detail that would be expected within a Transport Statement or similar, the main focus is the management of construction traffic throughout the construction phase of the BESS. It should therefore be read as a Construction Traffic Management Plan (CTMP) against which any specific conditions can be applied to ensure the safe management of traffic throughout the construction period.

The site is located to the southeast of the existing East Claydon Substation, East Claydon Road, Granborough, Buckinghamshire. Temporary construction vehicle access will be taken from East Claydon Road (north) with operational vehicle access taken from Hogshaw Road, Granborough (south).
Hogshaw Road site entrance grid reference is X (Easting) = 476108, Y (Northing) = 224668.
The site is located in the former Aylesbury Vale area of Buckinghamshire with the Highway Authority being Buckinghamshire Council.

An overview of the site location is shown in **Figure 1** with the site layout plan attached as **Appendix 1**.


**Figure 1: Site Location**

## Site Working Times (TBC)

It is proposed that construction will be undertaken during the following times:

| Day: | Winter working (Oct – Mar): | Summer working: |
|---|---|---|
| Monday | 07:00 – 18:00 | 07:00 – 20:00 |
| Tuesday | 07:00 – 18:00 | 07:00 – 20:00 |
| Wednesday | 07:00 – 18:00 | 07:00 – 20:00 |
| Thursday | 07:00 – 18:00 | 07:00 – 20:00 |
| Friday | 07:00 – 18:00 | 07:00 – 20:00 |
| Saturday | 07:00 – 13:00 | 07:00 – 13:00 |
| Sunday | No works | No works |
| Bank Holidays | No works | No works |
| Site Security | 17:00 – 07:30 every day | 19:00 – 07:30 every day |

No construction work or construction traffic movements will take place outside of these hours unless such work is associated with an emergency or undertaken with the prior written consent of the Local Planning Authority.

## Construction Overview

The development will be subject to an 18-month construction period as shown on the indicative construction programme attached as **Appendix 2**.

Earthworks for the access tracks and the battery bases is the first construction activity followed by stoning up of the access tracks and the construction of the concrete bases required to house the battery units. In parallel with the concrete works the electrical infrastructure required to connect the individual battery units within the site is installed together with the electrical connections to the off-site National Grid. The batteries themselves are then brought to site, installed, and connected.

Up to approximately 70 construction workers are forecast to be on site each day during the busiest months although the number will vary month to month depending on the work activities. Approximately 40 to 50 construction workers on site each day is considered a more typical number.

# 2. Predicted Construction Vehicle Numbers

## Heavy Goods Vehicles

The likely number of HGV delivery vehicles per month required to construct the site are shown on the indicative construction programme (Appendix 2).

Material quantities have been calculated for the stone required for the on-site access tracks and the concrete / steel materials required for the concrete bases. These quantities have been used to identify the likely number of delivery vehicle movements required with this totalling approximately 825 loads by 8 wheel tippers (stone), flat-bed rigid delivery lorries (steel reinforcement) and 6m$^3$ ready mix concrete lorries. It is likely that these materials will be delivered relatively evenly over an approximately 10 month period with typically 20 to 30 loads per week (40 to 60 two-way HGVs) or approximately 4 to 6 loads per day (8 to 12 two-way HGVs).

Statera Energy experience from other similar sites identifies that development of a BESS requires approximately 2.5 HGV loads per battery. With 888 batteries proposed for East Claydon there will likely be approximately 2,200 HGV loads (across differing sizes of vehicle) spread evenly over an approximately 6 month period toward the end of the programme. This equates to approximately 92 loads per week (184 two-way HGVs) or approximately 18 loads per day (36 two-way HGVs).

HGV movements across the programme as a whole are forecast to peak at approximately 118 per week (236 two-way) or approximately 24 per day (48 two-way).

Four Abnormal Indivisible Loads (AILs) will be required to transport the on-site transformer units required to transfer the energy to and from the main East Claydon substation. The routing of these AILs is covered within a separate routing report prepared by the specialist haulage contractor, Wynns.

## Workforce

As previously identified, workforce numbers will generally be approximately 40 to 50 per day and up to 70 at peak times. These workforce numbers are also shown on the indicative construction programme (Appendix 2).

Where the workforce will travel from is currently unknown as it will depend on the appointed contractor and the personnel assigned to the site. However, it is anticipated that many of the non-local workforce will stay at local accommodation and be transported to and from the site by minibus and/or van. This is typical of the construction industry where a groundworks ‘gang’ (or similar) travel together meaning workforce vehicle movements are minimised together with their impact on the highway network. The number of car trips to and from the site will therefore be limited primarily to those associated with site management staff and visitors.

A temporary car parking area (including spaces for minibuses and vans) will be provided within the on-site contractor’s compound. This will be of a sufficient size to ensure that all workforce, management, and visitor parking demand can be fully accommodated within the site thereby ensuring no parking takes place on the local highway network. It should be noted that the site area will be accessed via a new track from Hogshaw Road that will be approximately 500m in length, and, during the construction period, via a temporary haul road from East Claydon Road that will be approximately 975m in length. These distances further ensure no overspill parking to the local adopted highway.

## Typical Daily Profile of Construction Traffic Movements

Where possible, deliveries and collections by HGVs will be restricted to weekdays only and between 09:30 and 16:00 (outside of school term) and between 09:30 and 15:00 (during school term). These hours avoid the traditional highway peak hours and help minimise off-site traffic impact. They also avoid the start and end of the school day. The proposed construction traffic route (discussed in Section 3 below) passes through Winslow with the time restrictions ensuring no adverse impact on student and parent movements to and from Winslow Church of England Combined School, Furze Down Special Educational Needs School, Sir Thomas Freemantle Secondary School and Padbury Primary School.

Based on the above, it is possible to identify a typical daily profile of vehicle arrivals and departures during construction of the proposed BESS. This is shown below.

| Time | Workforce Vehicles (cars, vans, minibuses) | | Heavy Goods Vehicles (tippers, flat-beds, artics) | |
|---|---|---|---|---|
| | Arrive | Depart | Arrive | Depart |
| 07:00 – 08:00 | 18 | - | - | - |
| 08:00 – 09:00 | - | - | - | - |
| 09:00 – 10:00 | - | - | 4 | - |
| 10:00 – 11:00 | 4 | 4 | 6 | 4 |
| 11:00 – 12:00 | - | - | 6 | 6 |
| 12:00 – 13:00 | - | - | 4 | 6 |
| 13:00 – 14:00 | 6 | 6 | 4 | 4 |
| 14:00 – 15:00 | - | - | - | 4 |
| 15:00 – 16:00 | - | - | - | - |
| 16:00 – 17:00 | - | - | - | - |
| 17:00 – 18:00 | - | - | - | - |
| 18:00 – 19:00 | - | 18 | - | - |

The above represents the combination of winter working hours, school term delivery hours and the highest predicted number of HGV movements per day (48 two-way). It is also based on the maximum workforce of 70 (typical vehicle occupancy assumed to be 4) and allows for occasional car and vehicle movements during welfare breaks (to and from local shops or similar). The indicative programme identifies that the maximum workforce and the maximum HGV numbers are unlikely to occur at the same time with the above therefore representing a worst case scenario. Even so, the hourly traffic flows remain low and do not exceed 20 vehicle movements in any one hour.

## Operational Phase

Once operational the site will be unmanned (a passive installation) with post construction activity limited to occasional visits to undertake security checks and routine maintenance. It is unlikely to involve more than 3 or 4 visits by car or small van over a typical week with vehicle access being from Hogshaw Road.

## Decommissioning

With routine maintenance the batteries have an operational life of approximately 40 years. Once the batteries reach the end of their life, or earlier if a term is imposed through planning conditions, the site will be decommissioned with all electrical infrastructure removed and the land returned to agriculture. It is envisaged that a similar number of vehicle movements would be required to clear the site with these following the same route detailed in the following section.

# 3. Proposed HGV Route To and From the Site

## Route Description

The preferred HGV routes to the East Claydon BESS construction site are shown in red in **Figure 2**. This routing has been determined following detailed consideration of the options available. The standard of the local roads and junctions to the south of Granborough via Whitchurch and North Marston are not considered appropriate. Similarly, approaching the site via East Claydon Road or Hogshaw Road from the southwest would involve the use of inappropriate local roads. As such, construction traffic will approach the site from the north only.

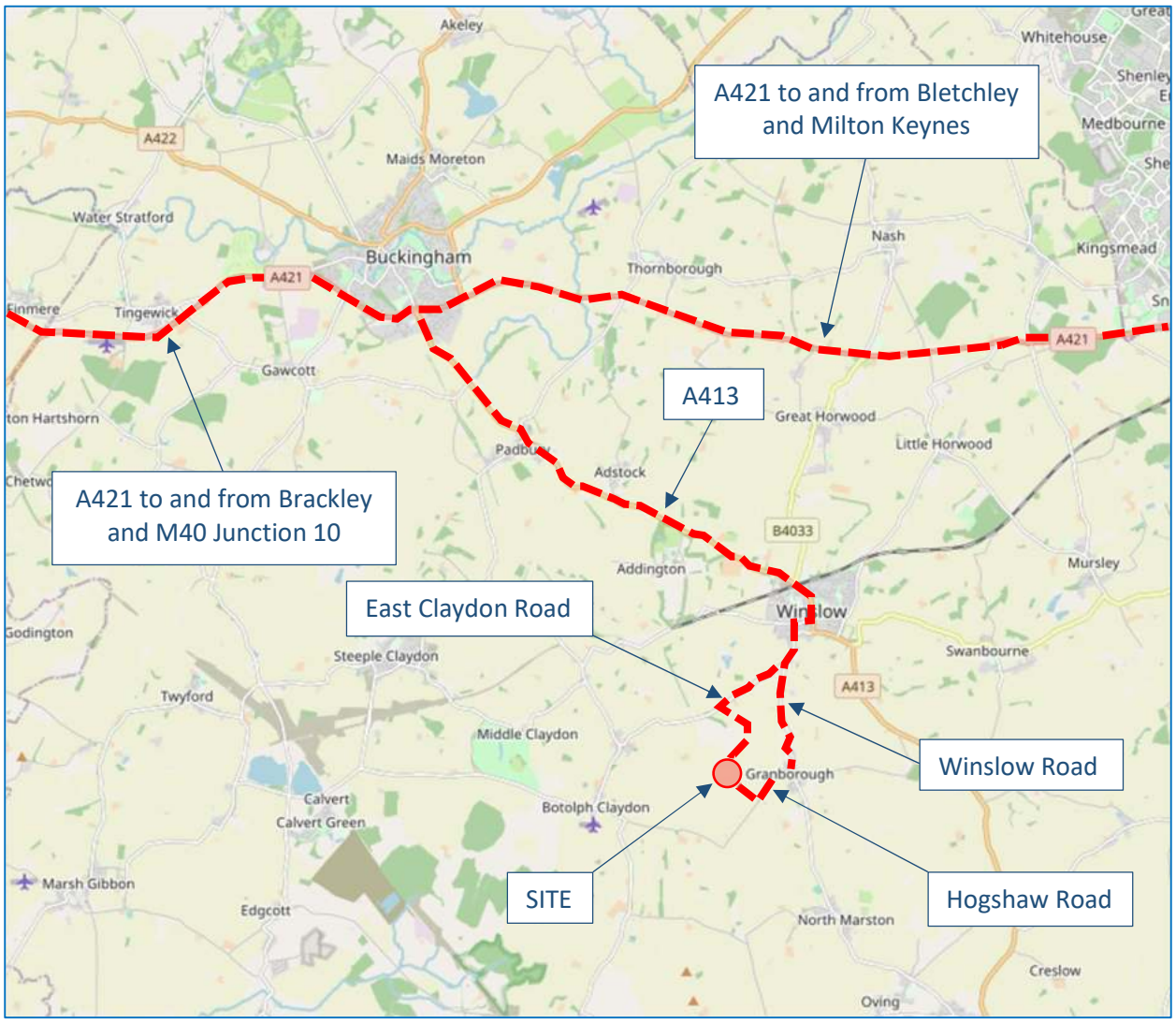



**Figure 2: Construction Delivery Routes**

The A421 travels east-west linking the M1 junction 13, Milton Keynes and Bletchley in the east with the A43, Brackley and M40 junction 10 in the west. It is a high standard single carriageway primary road that carries a high proportion of HGVs each day. At its approximate mid-point, the A421 bypasses Buckingham from which the A413 heads southeast towards Winslow and Aylesbury beyond. Again, the A421 is a good standard single carriageway road which regularly carries a high proportion of HGVs. Both the A421 and the A413 are elements of the HGV route network recommended by Buckinghamshire Council.

Within Winslow it is proposed that HGVs turn right from the A413 High Street onto Vicarage Road before turning left onto Burleys Road. This is the signed through route to The Claydons and Granborough and allows through traffic to avoid Winslow town centre. Vicarage Road and Burleys Road also have a more appropriate width and horizontal alignment than Horn Street in the town centre. Burleys Road joins Granborough Road at the southern exit from Winslow before continuing south to Granborough itself.

Primary construction access will be taken from East Claydon Road via a temporary haul road that will be removed once construction is complete. East Claydon Road leads away from Granborough Road just south of Winslow meaning for the most part construction vehicles will not be required to pass through Granborough village. However, the temporary haul road could be susceptible to occasional flooding with the Hogshaw Road access potentially being used as a secondary, alternative construction access until the flooding has cleared. The temporary bridges required on the haul road from East Claydon Road will also not have sufficient strength to accommodate the four AIL deliveries required with these therefore using Hogshaw Road to access the site.

Once south of the Granborough Road / East Claydon Road the secondary construction access route crosses the Claydon Brook via a single carriageway bridge before becoming Winslow Road where it enters Granborough village. In the village centre the route will turn right onto Hogshaw Road and continue southwest to the site access.

Construction vehicles departing the site will return to the A421 corridor via the reverse of the above routes.

The Department for Transport 'road traffic statistics' website identifies various count points along the above routes with details summarised in the following Table.

| Road Section | Count Point | Data Year | AAWT | HGV's |
|---|---|---|---|---|
| A421 just east of A413 junction | 7929 | 2021 | 21,039 | 1,230 |
| A413 just northwest of Winslow | 37125 | 2019 | 8,230 | 228 |
| Winslow Road, Granborough | 1871 | 2018 | 1,871 | 50 |
| East Claydon Road (Sept 2023 ATC) | - | 2023 | 2,458 | 20 |
| Hogshaw Road (April 2023 ATC) | - | 2023 | 393 | 2 |

The two-way Annual Average Weekday Traffic (AAWT) flow on the A421 is shown to be high before reducing to moderate on the A413 and then low on Winslow Road. A recent Automatic Traffic Counter (ATC) loop survey on East Claydon Road shows two-way daily flows to be moderate with another on Hogshaw Road showing two-way daily flows to be very low. The number of HGVs within the AAWT and ATC flows also reduces as the routes advance towards the site as would be expected given the reducing hierarchy of the roads as the routes get closer to the site.

A temporary construction route signage scheme will be in place at the various turning points to ensure drivers know which route to follow. Delivery drivers will also be provided with routing instructions in advance and instructed not to follow 'sat-nav' guidance.

Parts of the routes are constrained particularly where they pass through Winslow and Granborough. As such, a swept path analysis for a 16.5m articulated delivery vehicle passing through these constrained locations has been undertaken with the details shown on the plans attached as **Appendix 3**. These show that the large vehicles can undertake the necessary movements within the limits of the carriageway. No swept path analysis of the Granborough / East Claydon Road junction is considered necessary given the angled approach of the side road.

Subject to mitigation (below) the above site access routes are considered the most appropriate available.

Routing of AILs is covered separately in a report prepared by the specialist haulage contractor Wynns. In summary this identifies the AILs being transferred by road from Tilbury Docks via the M25 anticlockwise and then the M40 to junction 10. From here the AILs will follow the A43 northeast before turning right onto the A421 and joining the local access route described previously. This route has been cleared by all affected structural authorities with a Special Order Agreed Route notification having been received from National Highways (see Wynns AIL report for further details).

## Route Mitigation

It is acknowledged that the standard of parts of the proposed construction vehicle access routes are not ideal for frequent HGV movements and that mitigation measures are required to prevent adverse impacts on other road traffic. Statera Energy commit to fund and implement the following:

- Provision of temporary advanced warning signage (black wording on yellow sign plate) to advise drivers to expect additional HGV turning movements between the relevant dates. Signage to be erected at the High Street / Vicarage Road, Vicarage Road / Burleys Road and Burleys Road / Granborough Road junctions in Winslow, at the Granborough Road / East Claydon Road junction to the south of Winslow, and at the Winslow Road / Hogshaw Road junction in Granborough. Full details of the wording and locations to be discussed and agreed with the Highway Authority prior to erection.
- A temporary reduction in the speed limit from 60mph to 40mph on East Claydon Road between the Granborough Road junction and a point just west of the haul road access junction. This would be coupled with provision of temporary advanced warning signage (black wording on yellow sign plate) to advise drivers of the increased likelihood of meeting an HGV travelling in the opposite direction. Definitive extents and signage locations to be discussed and agreed with the Highway Authority prior to erection.
- Temporary advanced warning signage (black wording on yellow sign plate) on the approaches to the narrow Claydon Brook bridge again to advise drivers of the increased likelihood of meeting an HGV travelling in the opposite direction.
- All signage and traffic management will be designed, implemented, and maintained by an accredited traffic management sub-contractor with full details discussed with, and approved by the Highway Authority in advance.
- Introduction of two temporary passing bays within the verge of Hogshaw Road to allow background traffic flows and construction traffic to safely pass each other. Exact location and size to be discussed and agreed with the highway Authority prior to implementation.

Measures to provide information to the local community and to coordinate the arrival and departure times of HGVs are discussed in Section 7.

## Road Condition Survey

Statera Energy is willing to accept a planning condition requiring a road condition survey to be undertaken before, during and after construction of the BESS. It is suggested that the full extent and scope of this be discussed and agreed in writing with the Local Planning Authority and Highway Authority prior to undertaking the initial survey. A suggested wording for the condition is given below.

> *"The development shall not commence unless or until an initial road condition survey has been submitted and approved in writing by the Local Planning Authority. The extent and scope of the survey shall be first agreed with the Local Planning Authority."*

*"The condition of the construction access routes shall be monitored and reported to the Local Planning Authority every 3 months throughout the construction period of the development and any defects or damage attributable to the construction activity is to be rectified by the developer at their expense within 3 months of the defect being identified."*

The Site Manager will also regularly monitor the condition of the East Claydon Road and Hogshaw Road surfacing throughout the construction period and effect any temporary reinstatements or similar that may be required to ensure the safe operation of the local highway network.

# 4. Vehicle Access to the Site

Construction vehicle access to the site will primarily be taken via a temporary haul road leading from East Claydon Road with the operational access from Hogshaw Road providing a secondary alternative route should the haul road be unavailable due to flooding.

## East Claydon Road

A temporary construction vehicle access will be provided on East Claydon Road as shown on the plan that forms part of **Appendix 4**. The access will be a simple priority junction comprising a bell mouth with a 15m radius to the east and a 6m radius to the west. The different radii will help ensure that larger vehicles only access the site to and from the Winslow direction. The bell mouth leads to a 6m wide access gate located 17m back from the edge of the East Claydon Road carriageway. This offset distance will allow a full size articulated delivery vehicle to wait clear of the carriageway should it need to do so while the gate is opened (into the site).

The 17m distance between the edge of carriageway and the gate will have a sealed surface with full details to be agreed with Buckinghamshire Council Highways during the detailed design process. Once within the site, the temporary haul road will be a consolidated stone construction with the 17m length of sealed surface ensuring no migration of loose materials on to the public highway.

A speed survey has identified 85$^{th}$ percentile traffic speeds on East Claydon Road as being 55.3mph when heading east and 56.9mph when heading west. These speeds equate to visibility splay requirements of 176m to the left on egress from the site access and 185m to the right. The required visibility can be provided can be provided in both directions although there is a requirement for cutting back of the existing hedgerows on either side of the access. Statera Energy is willing to accept a standard planning condition to ensure the visibility splays are provided and maintained throughout the construction period and that the access is removed once construction is complete.

A swept path assessment of the proposed site access junction is also shown on the access plan (Appendix 4). This shows the turning movements of a 16.5m articulated vehicle (the largest vehicle requiring regular access to the site) travelling to and from the Winslow direction.

## Hogshaw Road

Access to the site from Hogshaw Road will be taken via an existing private agricultural field access which will be upgraded to an initial 6m width with a 15m radius to the northeast and a 6m radius to the southwest, as shown on the plan that is also attached as part of Appendix 4. The different radii will help ensure that larger vehicles only access the site to and from the Granborough direction as per the secondary HGV route discussed previously.

The bellmouth will lead to a security gate positioned 17m back from the edge of Hogshaw Road thereby allowing a 16.5m articulated vehicle to wait clear of the public highway should the gate be closed on first arrival. This 17m length will have a tarmac or concrete surface (to be agreed with Buckinghamshire Council through the detailed design process) thereby ensuring no migration of loose materials on to the public highway. The improved access will be retained post construction to allow for on-going maintenance access to the BESS site.

A speed survey has identified 85$^{th}$ percentile traffic speeds on Hogshaw Road as being 50.7mph when heading northeast and 51.7mph when heading southwest. These speeds equate to visibility splay requirements of 167m to the left on egress from the site access and 145m to the right. The required visibility is readily available given the straight alignment of Hogshaw Road and the wide highway verge on the nearside (3m to 4.5m).

Statera Energy is willing to accept a standard planning condition to ensure the required visibility splays are provided and maintained.

A swept path assessment of the proposed site access junction is also shown on the access plan (Appendix 4). This shows the turning movements of a 16.5m articulated vehicle travelling to and from the Granborough direction. The width of Hogshaw Road requires turning vehicles to use the full width of the carriageway.

Construction vehicle access will primarily be taken from East Claydon Road with the Hogshaw Road access effectively being a 'back up' option only. Any use of Hogshaw Road by construction vehicles will therefore be very occasional (if at all) and short term only.

### Both Access Locations

Advanced 'Works Access', 'Slow' and 'Large Vehicles Turning' signage will be provided in both directions at both access locations to warn of the presence of the site accesses and the potential for increased turning movements. This signage will be designed, implemented, and then maintained throughout the construction works by an accredited traffic management signage sub-contractor. The signage arrangements will be discussed and agreed with the Highway Authority prior to their implementation.

A Banksman will also be provided at the site access locations when HGV movements are expected so that HGV access to the site can be appropriately managed and controlled. The Banksman will not have legal powers to stop through traffic on East Claydon Road or Hogshaw Road but will ensure the access within the site is clear when HGVs arrive and only allow HGVs to depart the site when the roads are clear of passing traffic and it is safe to do so. With traffic flows on East Claydon Road and Hogshaw Road being less than 2,500 two-way vehicles and 400 two-way vehicles respectively, there is no requirement for temporary traffic signals or similar. It should also be noted that provision of the visibility splays (as above) will ensure good levels of forward visibility for drivers approaching either access junction.

# 5. Management of On-Site Areas

## Controlled Access

During construction the site will be accessed via Site Security Checkpoints located beside the East Claydon Road and Hogshaw Road accesses. Unrestricted vehicle and/or pedestrian access to the site will not be permitted with all members of the workforce required to first go through a Site-specific Induction, Assessment and Approval process. In the absence of this training and approval, visitors to site will always be escorted by a site member in possession of this training and authorisation.

It is proposed the East Claydon BESS site will be a 'Safe 6' construction site and all personnel working or carrying out deliveries to the site will require as a minimum Safety Helmet (Hard Hat), Hi-Vis Tabard, Coveralls, Gloves, Light Eye Protection and Safety Boots. For temporary visitors, spare sets of Light Eye Protection and Hard Hats will be provided but it is the expectation that all delivery drivers and similar will have all the equipment with them. It is a requirement that all site personnel and visitors sign in and out of the site on all occasions.

## Construction Compound

A temporary compound area will be established within the construction site itself with this being of a sufficient size to accommodate welfare facilities for the workforce, parking for workforce vehicles, secure storage of materials and the unloading requirements of the delivery vehicles. The area will also be of a size that will allow the largest delivery vehicles to turn such that they can both enter and depart the site in a forward gear. In this way there will be no queuing, parking, unloading or materials storage on the public highway.

The Site Manager or his designated deputy will be responsible for supervising, controlling, and monitoring vehicle movements within the site and ensuring that there are suitable arrangements for the safe delivery and collection of vehicle loads. All plant, delivery/collection vehicles and cranes will be supervised by a Banksman when reversing.

## Site Access Tracks

5m to 6m wide tracks will be provided within the site to enable vehicle access to the various areas of BESS batteries, the control equipment and sub-station. These will be of a sufficient standard for the construction activities and will be retained post construction to allow occasional access for maintenance purposes during the operational stage. Topsoil will be removed before 200mm of 75mm crushed stone is laid and compacted on an appropriate geotextile membrane. **Figure 3** overleaf shows a similar access track which has proven to be appropriate on BESS sites elsewhere.

Height Restriction Barriers (Goal Posts) will be installed over the haul road and access tracks where there is a potential for accidental contact with overhead infrastructure. Similarly, any restricted access areas will be identified and barriered.

**Figure 3: Typical On-Site Access Track**

## Unloading of Larger Elements

Various elements will be delivered directly to the required location within the site and unloaded by mobile crane. The crane requires a swivel radius of at least 6m as shown in **Figure 4**. To facilitate unloading a clear distance of at least 2m will be maintained to neighbouring obstacles such as fences and trees with any overhead power lines also being taken into consideration.

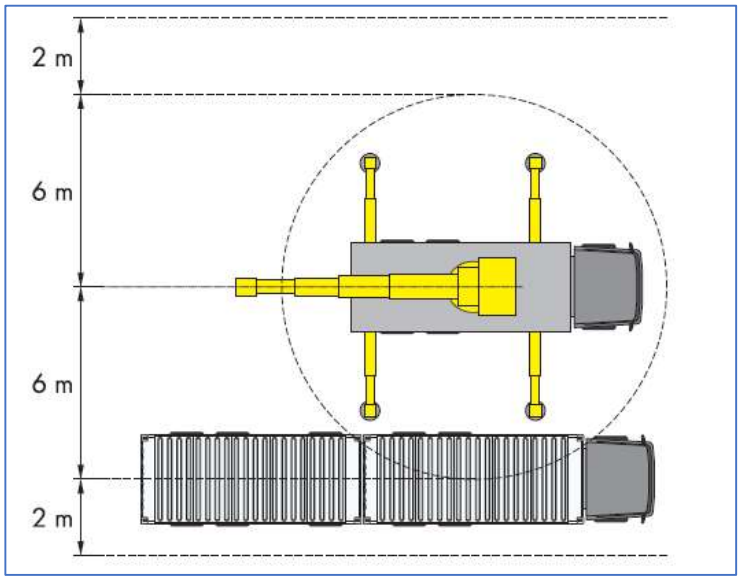



**Figure 4: Crane Handling Requirements**

The four transformers required have a weight of 112t and will be delivered as AILs. These will require a much larger mobile crane, similar to that shown in **Appendix 5**, to unload the delivery vehicles and correctly position the transformers. Safe working space will be advised by the specialist crane provider / operator and provided as required.

## Vehicle Wheel Washing Facilities

BESS sites require ground works to create the access tracks and foundations for the battery units and the transformers. These excavations will generate spoil that could dirty the wheels of construction related vehicles. For the most part delivery and workforce vehicles that enter and depart the site will not be required to travel on unmade ground as all such movements will be contained within the compound area or will follow the site access tracks, both of which will be of a 'stoned' construction.

This will serve to minimise the collection of mud on vehicle wheels. There is also a travel distance of 975m between the BESS site and East Claydon Road (500m to Hogshaw Road) which, if mud were to form on vehicle wheels, provides a sufficient distance to displace mud from tyre treads ('clean' the wheels) before reaching the public highway. Formal wheel washing facilities are therefore not considered necessary.

Notwithstanding, all HGVs leaving the site will be inspected by the Banksman prior to departure to ensure that their wheels are sufficiently clean to access the public highway. Wheel washing facilities in the form of a jet washer and water supply will be provided adjacent the site accesses and used should the need arise.

The Site Manager will also monitor the cleanliness of the local highway network on a regular basis and hire in a mobile road sweeper should this be found to be necessary.

### Site Materials Migrating on to the Public Highway

BESS sites do not generate significant volumes of waste material which minimises the risk of materials migrating on to the public highway. The site will be controlled by a Site Waste Management Plan (SWMP) which will be submitted to the Local Planning Authority prior to construction. This will assist in controlling any residual risks.

The Banksman stationed at the site accesses will also be tasked with ensuring that all vehicle loads are appropriately sheeted and that the surfacing of the access is kept clear of loose stones and similar. Appropriate equipment will be provided to assist.

# 6. Public Rights of Way

There are two Public Rights of Way (PRoW) that pass close to the site and could be impacted by construction vehicle movements associated with the BESS site. These are shown in **Figure 5** and are discussed further below.

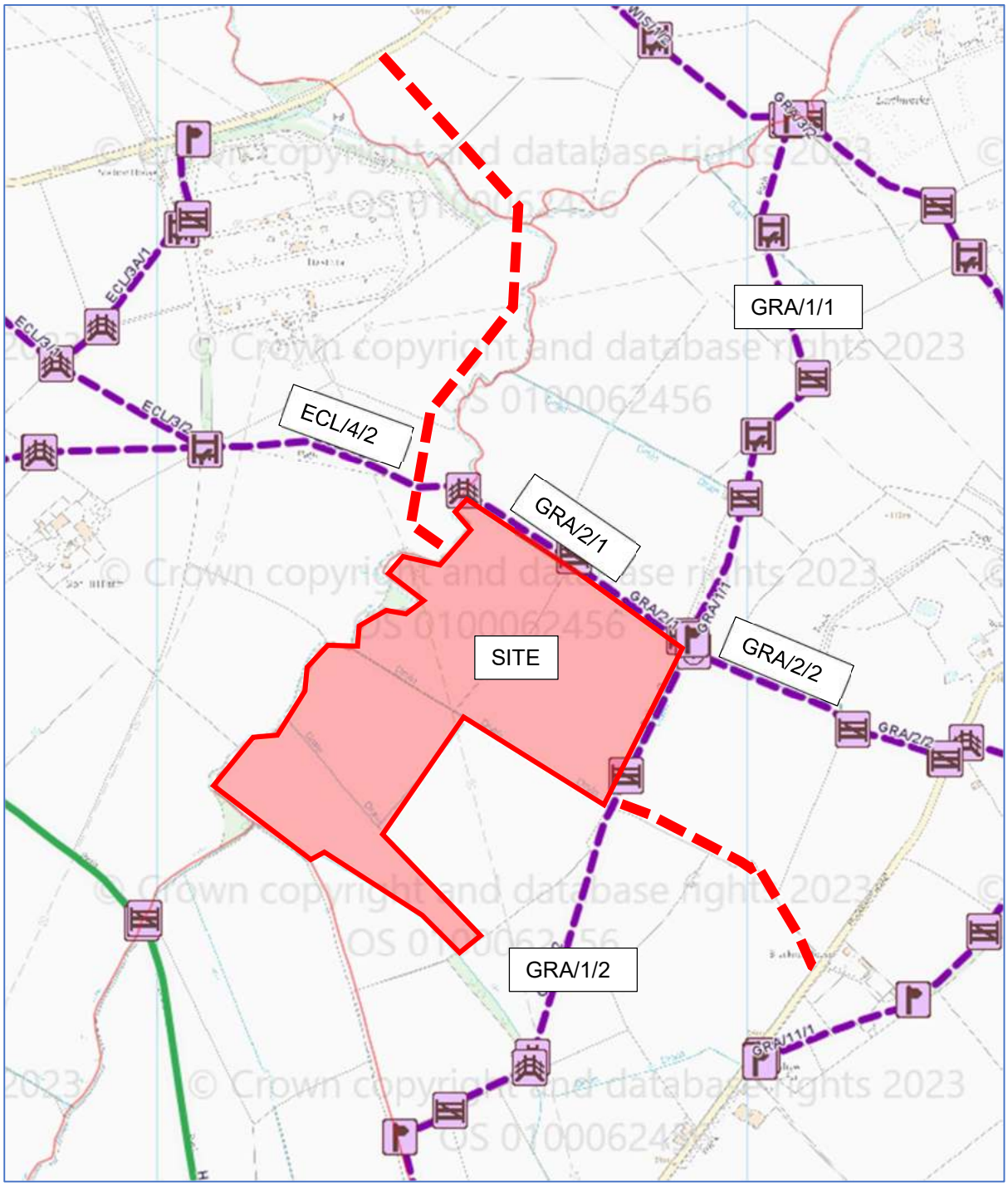



**Figure 5: Public Rights of Way (annotated extract from Buckinghamshire PRoW Map)**

Public Footpath GRA/1/2 runs broadly north-south along the eastern boundary of the site while Public Footpath GRA/2/1 (becoming ECL/4/2) runs broadly east-west along the northern boundary of the site. Both these Footpaths will be outside the boundary fence line of the site with their routes therefore always being available for public use, both during construction and operation of the BESS facility.

The only potential impact will be where the permanent vehicle access track from Hogshaw Road crosses the line of GRA/1/2 and where the temporary construction haul road from East Claydon Road crosses ECL/4/2. During the construction period, warning signage for pedestrians will be provided on the approaches to both PRoW crossings with this signage being as shown in **Figure 6** below, or similar to be agreed with the Highway Authority.


**Figure 6: Pedestrian Warning Signage**

Surfacing of the PRoW at the crossing points will be as per the standard site access tracks discussed previously and as shown in Figure 3. Levels will be maintained flush with the existing ground levels to avoid any trip hazards.

The open nature of the land will ensure good levels of visibility between drivers on the access track / haul road and walkers on the Public Footpath (and vice versa) thereby reducing the risk of conflict. This will be further assisted through the implementation of a 10mph speed restriction along the length of the vehicle access track.

# 7. Management of Construction Traffic

## Cumulative Impacts

It is acknowledged that construction traffic will impact on the local highway network particularly over the HGV routes identified in Section 3. This impact could be exacerbated if there are other developments in the local area that are being constructed at the same time and reliant on the same general vehicle access routes. Schemes such as Tuckey Solar Farm, National Grid's expansion of the East Claydon Substation, the High Speed 2 rail line, and East-West Rail could all be under construction during the same timeframe as the proposed East Claydon BESS requiring careful coordination of construction vehicle movements.

A start date for construction of the East Claydon BESS cannot be identified as planning permission has yet to be granted. It is not therefore possible to identify whether any other developments will also be under construction at the same time as the proposed BESS. Should the need arise in due course, Statera Energy will engage proactively in dialogue with the other developers to identify their build programmes and construction routing, and, if shown to overlap, seek to implement a joint 'Road Booking System'.

The Booking System would allow the respective Site Managers to discuss and coordinate their HGV movements in advance with the aim of ensuring that total movements on a particular day or across a particular week do not have a significant adverse impact on the shared elements of the site access routes. It is envisaged that each developer would effectively 'book' particular days for any significant construction traffic movements with the other developers agreeing to adjust their HGV movements to suit. It would clearly be in all parties' best interest to implement and comply fully with such a system.

## Traffic Management Principles

It is important that the interaction between site related traffic and general traffic on the local highway network is managed to maximise construction efficiency and safety while minimising risk, inconvenience, and nuisance to the public. This will be achieved through careful management, programming and co-ordination of all construction works and associated traffic accessing the site.

To assist in minimising the impact of construction related traffic on East Claydon Road, Hogshaw Road and the wider construction access route, the following traffic management principles will be observed (over and above those discussed previously).

- The access routes to and from the site will be discussed further with, and approved by, the Highway Authority prior to commencement of construction. This will include full details of the location and message given by temporary advanced warning signage, full details of the route mitigation measures to be applied at various locations along the route, and the extents of the temporary speed limit reduction proposed for East Claydon Road.
- The Parish Council's along the construction access routes (between Buckingham and the site) will be contacted once the construction period is known to advise them of increased HGV traffic on the local roads and the relevant dates. Highway Notices will also be erected in the various towns and villages along the route to provide similar information.
- Contact details of the Site Manager will be provided to the Parish Council's such that they can raise any traffic concerns that may arise during the construction period.
- Properties within Granborough village will be subject to a 'letter drop' to provide local residents with information on the construction programme and the periods over which HGV access is likely to be required. Residents will be advised and requested not to park vehicles on Winslow Road and Hogshaw Road during these periods.

- The telephone contact number of the Site Manager will be provided at the East Claydon Road and Hogshaw Road site access junctions so that any issues relating to vehicle movements can be quickly reported by the public and suitably addressed.
- The Site Manager will be responsible for coordinating delivery vehicle movements to and from the site and assigning these a specific time for arrival. In this way HGV movements will be spread evenly throughout the daily delivery period.
- Delivery drivers will be required to contact the Site Manager (by mobile telephone or similar) whilst on route to confirm their time of arrival and to enable the Banksman to prepare for that arrival. Such contact will also allow the Banksman to hold back any HGV about to depart the site until such time as the inbound HGV has arrived thereby minimising the risk of two opposing HGVs meeting while using East Claydon Road or Hogshaw Road.
- All materials delivered to the site will be consolidated as far as possible to minimise the overall number of HGV movements required.
- Where possible, drivers will be encouraged to turn off vehicle engines when parked, waiting to unload, or when vehicles are not in use. This will reduce the noise impact on the surrounding area and will result in lower vehicle emissions.
- All large delivery vehicles arriving and departing the site will be appropriately sheeted, netted or strapped to prevent any loss of materials during transit.
- Contractors and sub-contractors will be given an induction by the Site Manager through which the routing requirements and traffic management measures contained within this CTMP will be fully communicated.
- The CTMP will be incorporated as part of the overall Health and Safety policy for the site. Any breach of the principles contained within the document by haulage contractors or their drivers will therefore be subject to a warning with any subsequent breach resulting in a ban from the site.

# APPENDIX 1 – Site Layout Plan

N

0 25 50 100 150m

SCALE 1:2,000

Footbridge

Pond

Scrub

New woodland

Proposed attenuation pond

SUBSTATION

Water tanks

GATE

WILDFLOWER GRASSLAND

Pond

Rookery Farm

Pond

Pond

Pond

Pond

Brocknell House

Legend

- Site boundary
- Existing trees
- Existing hedgerows
- New woodland planting
- New native shrub planting
- New substation compound
- 2.5m high weld-mesh security palisade fencing
- Crushed stone access track
- 5.5 wide crushed stone access track
- Existing hedgerow removed
- Attenuation pond
- Loose permeable gravel
- Wildflower grass
- Overhead electricity clearance zone
- Flood zone boundary
- Proposed hedgerow planting
- Public Right of Way
- Proposed trees
- Inverter building (total 37)
- Transformer
- Battery container (total 888)
- Storage container
- Control room (total 7)

| Revision | Date | Comment |
|---|---|---|
| - | - | - |

STATERA
BALANCING THE GRID

ON BEHALF
STATERA

PROJECT
EAST CLAYDON BESS

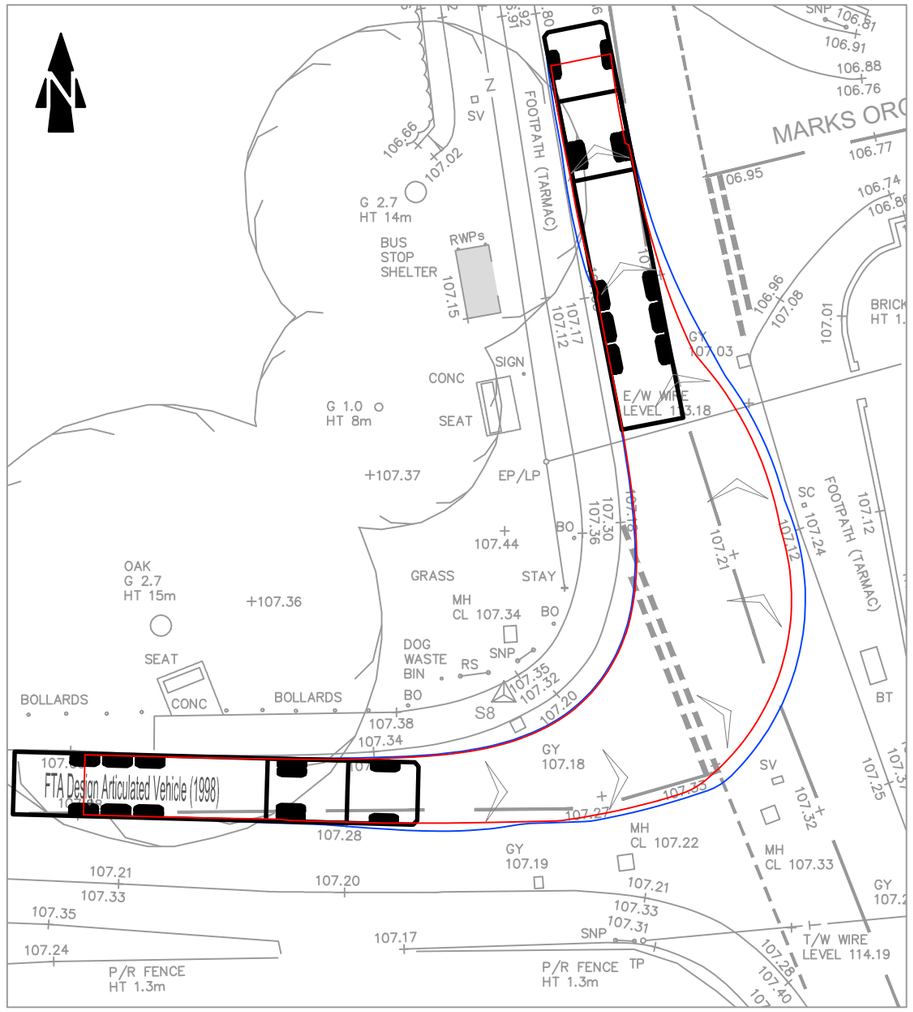
DATE 15 February 2023
SCALE 1 : 2,000 @ A1
DWG No SL261__L__X__GA__1
APPROVED CMcD

TITLE
MASTERPLAN

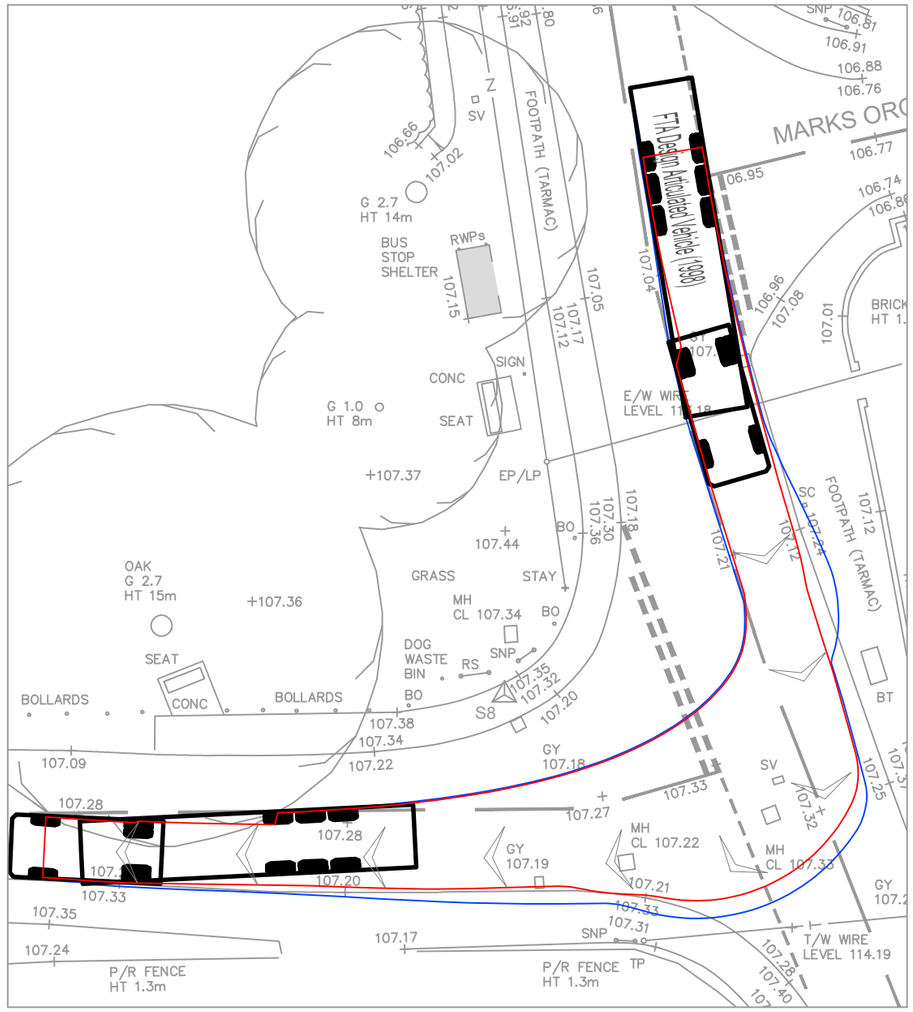
# APPENDIX 2 – Indicative Construction Programme

| MONTH | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | TOTAL HGVs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Compound, welfare cabins, plant deliveries | 20 | | | | | | | | | | | | | | | | | | 20 |
| Earthworks for access tracks and battery bases | 35 | 35 | 35 | 35 | 35 | | | | | | | | | | | | | | 175 |
| Stone for access tracks | | 50 | 50 | 50 | 50 | 50 | | | | | | | | | | | | | 250 |
| Concrete and steelwork for battery bases | | | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | | | | | | | | 400 |
| Import and installation of battery containers | | | | | | | | | | | | 370 | 370 | 370 | 370 | 370 | 370 | | 2220 |
| Electrical infrastructure and connections | | | | | | | 60 | 60 | 60 | 60 | 60 | 80 | 80 | | | | | | 460 |
| Miscellaneous | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 360 |
| Removal of compound and welfare cabins | | | | | | | | | | | | | | | | | | 20 | 20 |
| | | | | | | | | | | | | | | | | | | | |
| TOTAL HGVs per month | 75 | 105 | 105 | 155 | 155 | 120 | 130 | 130 | 130 | 130 | 130 | 470 | 470 | 390 | 390 | 390 | 390 | 40 | 3905 |
| TOTAL HGVs per week (average) | 18.8 | 26.3 | 26.3 | 38.8 | 38.8 | 30.0 | 32.5 | 32.5 | 32.5 | 32.5 | 32.5 | 117.5 | 117.5 | 97.5 | 97.5 | 97.5 | 97.5 | 10.0 | |
| TOTAL HGVs per day (average) | 3.8 | 5.3 | 5.3 | 7.8 | 7.8 | 6.0 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 23.5 | 23.5 | 19.5 | 19.5 | 19.5 | 19.5 | 2.0 | |
| TOTAL WORKFORCE per day | 20 | 30 | 30 | 70 | 70 | 60 | 55 | 55 | 55 | 55 | 55 | 25 | 25 | 10 | 10 | 10 | 10 | 10 | |

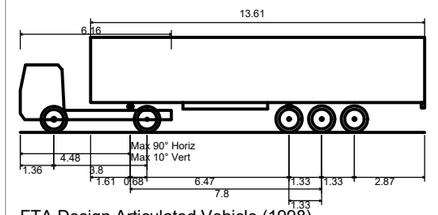
# APPENDIX 3 – Swept Path Analysis of Construction Access Route




LEFT TURN FROM HOGSHAW ROAD TO WINSLOW ROAD
(SCALE 1:250)




RIGHT TURN FROM WINSLOW ROAD TO HOGSHAW ROAD
(SCALE 1:250)




| FTA Design Articulated Vehicle (1998) | |
|---|---|
| Overall Length | 16.480m |
| Overall Width | 2.550m |
| Overall Body Height | 3.870m |
| Min Body Ground Clearance | 0.515m |
| Max Track Width | 2.470m |
| Lock to lock time | 3.00s |
| Kerb to Kerb Turning Radius | 6.550m |

16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)

| REV | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| | | | | |

NOTES:
1. Do not scale from this drawing.
2. This drawing is for illustrative purposes only and not for construction.
3. This drawing is to be read and printed in colour.

PROJECT: EAST CLAYDON BATTERY ENERGY STORAGE

CLIENT: STATERA ENERGY LTD

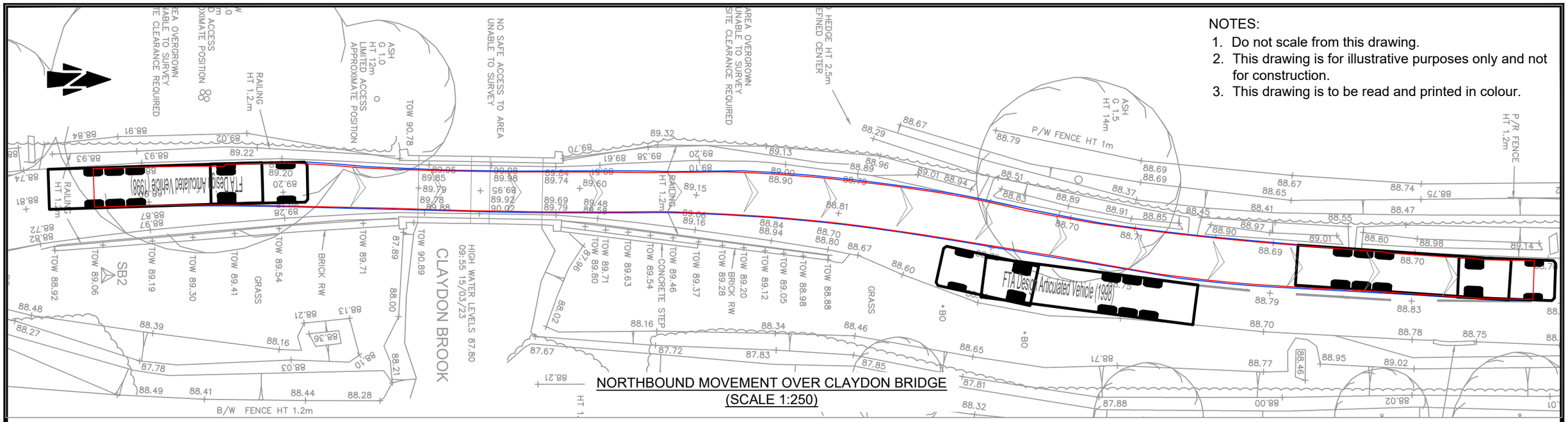
DRAWING TITLE:
# HOGSHAW ROAD / WINSLOW ROAD 16.5m ARTICULATED VEHICLE SWEPT PATH ANALYSIS

MILES WHITE TRANSPORT

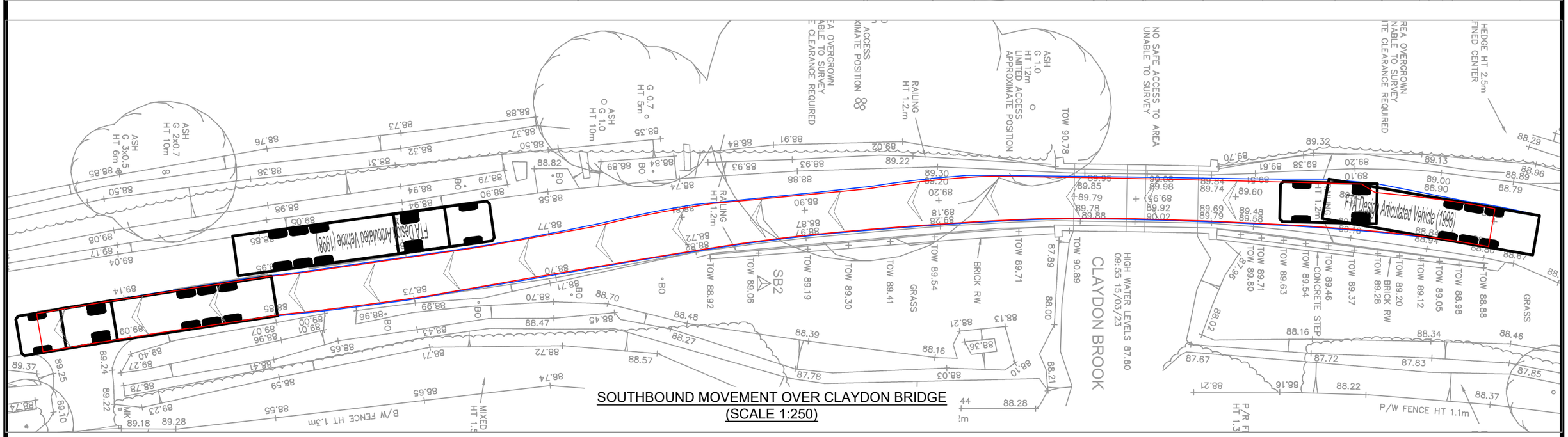
| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 30.05.2023 | 1:250 | A3 | 23030-SPA01 | - |

NOTES:

1. Do not scale from this drawing.
2. This drawing is for illustrative purposes only and not for construction.
3. This drawing is to be read and printed in colour.

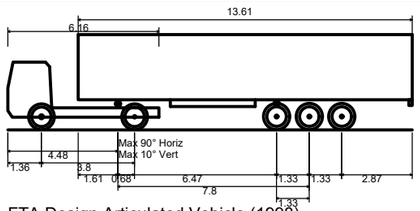



NORTHBOUND MOVEMENT OVER CLAYDON BRIDGE
(SCALE 1:250)




SOUTHBOUND MOVEMENT OVER CLAYDON BRIDGE
(SCALE 1:250)

| REV | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| | | | | |




16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)

FTA Design Articulated Vehicle (1998)

| | |
|---|---|
| Overall Length | 16.480m |
| Overall Width | 2.550m |
| Overall Body Height | 3.870m |
| Min Body Ground Clearance | 0.515m |
| Max Track Width | 2.470m |
| Lock to lock time | 3.00s |
| Kerb to Kerb Turning Radius | 6.550m |

PROJECT: EAST CLAYDON BATTERY ENERGY STORAGE

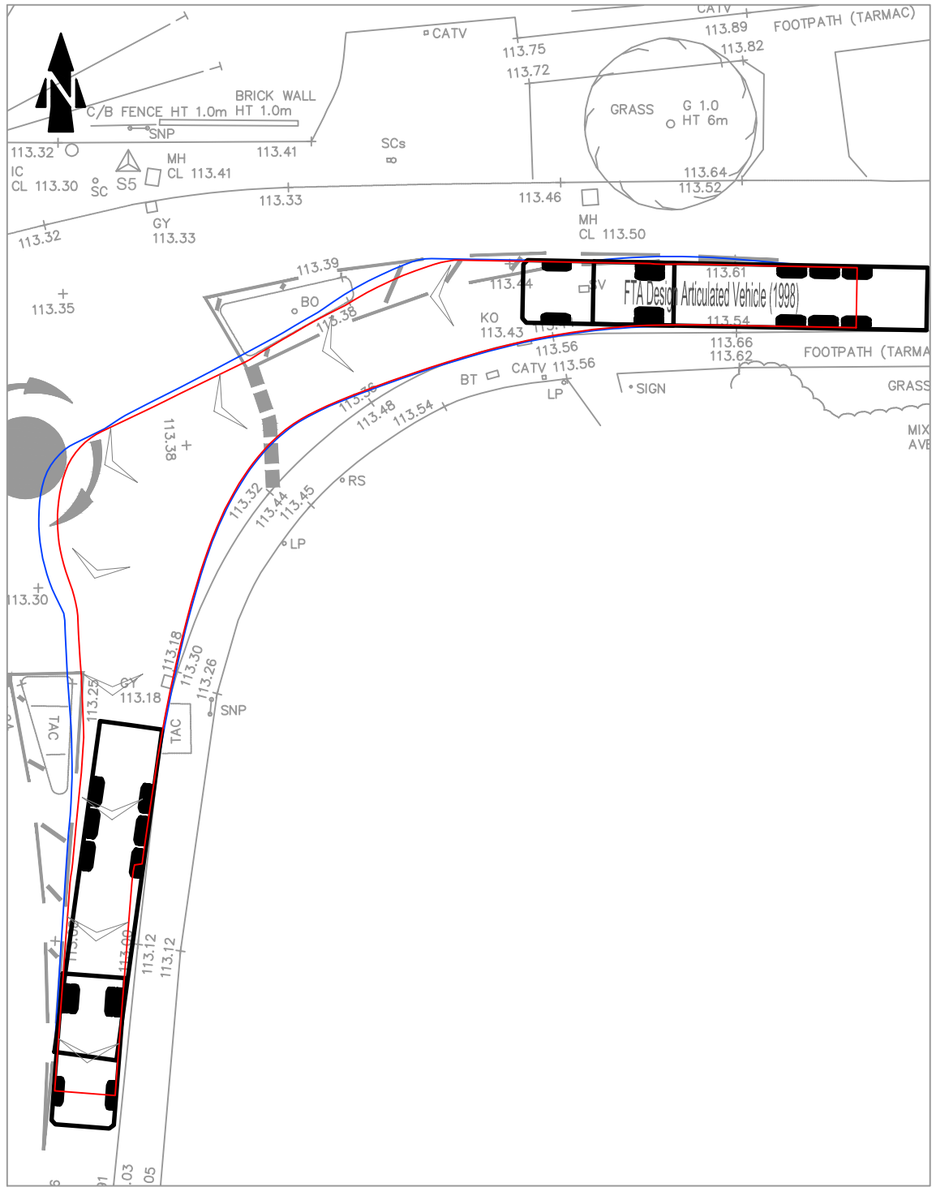
CLIENT: STATERA ENERGY LTD

DRAWING TITLE:

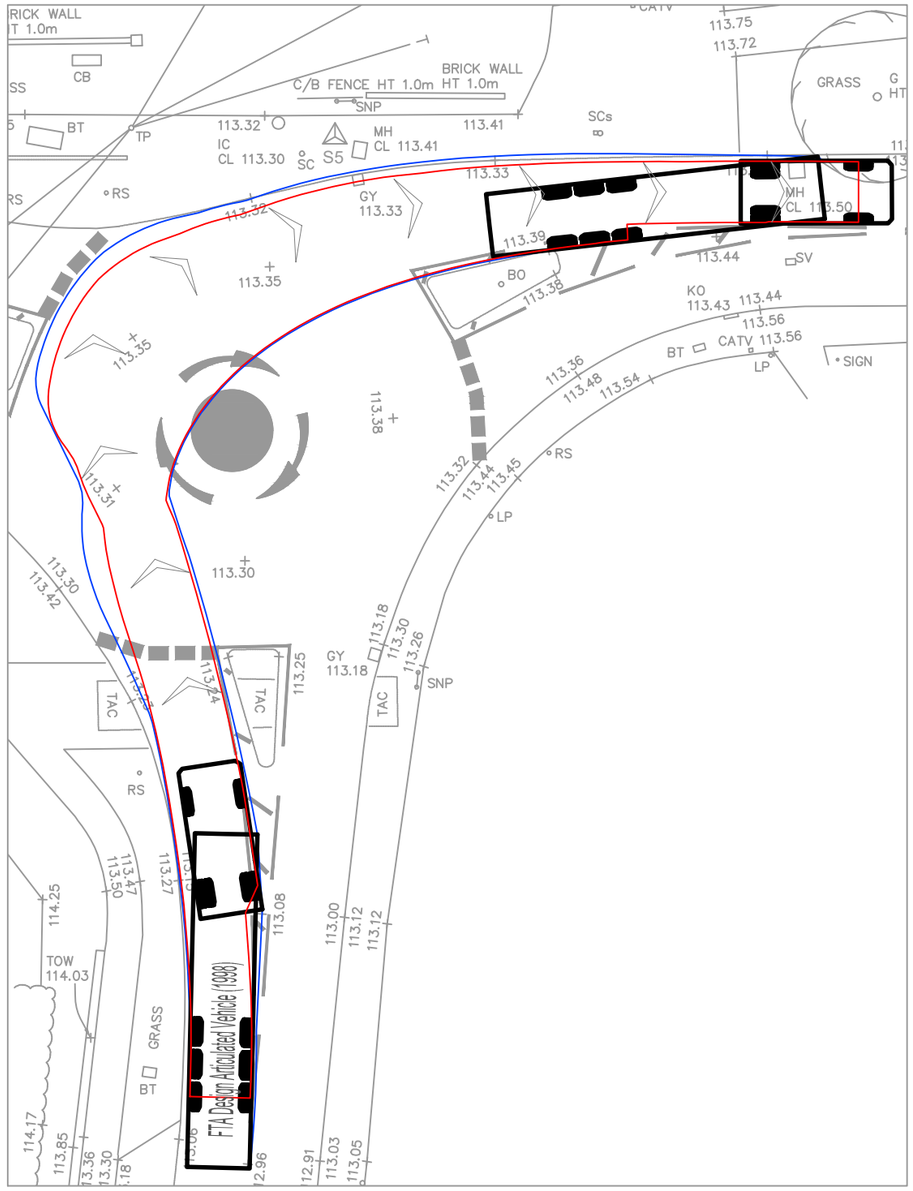
# CLAYDON BROOK BRIDGE
# 16.5m ARTICULATED VEHICLE SWEPT PATH ANALYSIS

MILES WHITE TRANSPORT

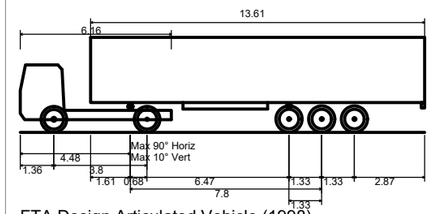
| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 30.05.2023 | 1:250 | A3 | 23030-SPA02 | - |




LEFT TURN FROM VICARAGE ROAD TO BURLEYS ROAD
(SCALE 1:250)




RIGHT TURN FROM BURLEYS ROAD TO VICARAGE ROAD
(SCALE 1:250)




| FTA Design Articulated Vehicle (1998) | |
|---|---|
| Overall Length | 16.480m |
| Overall Width | 2.550m |
| Overall Body Height | 3.870m |
| Min Body Ground Clearance | 0.515m |
| Max Track Width | 2.470m |
| Lock to lock time | 3.00s |
| Kerb to Kerb Turning Radius | 6.550m |

16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)

| REV | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| | | | | |

NOTES:
1. Do not scale from this drawing.
2. This drawing is for illustrative purposes only and not for construction.
3. This drawing is to be read and printed in colour.

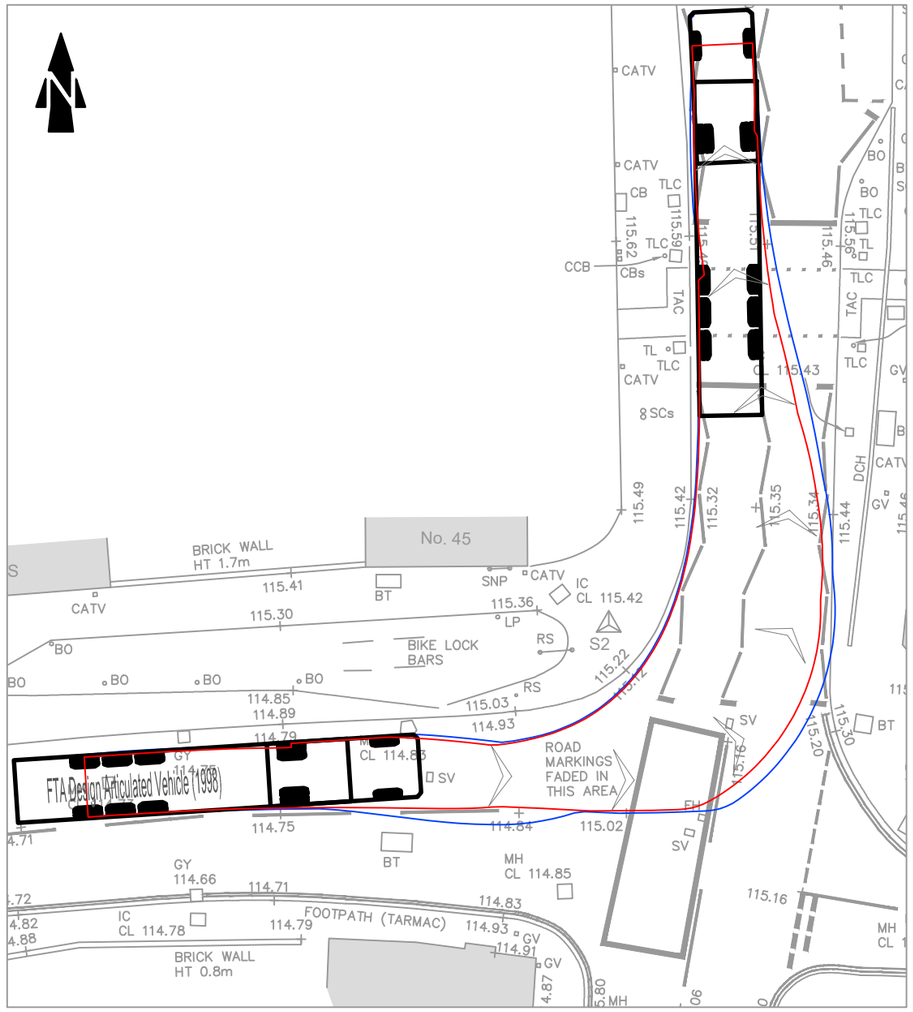
PROJECT: EAST CLAYDON BATTERY ENERGY STORAGE

CLIENT: STATERA ENERGY LTD

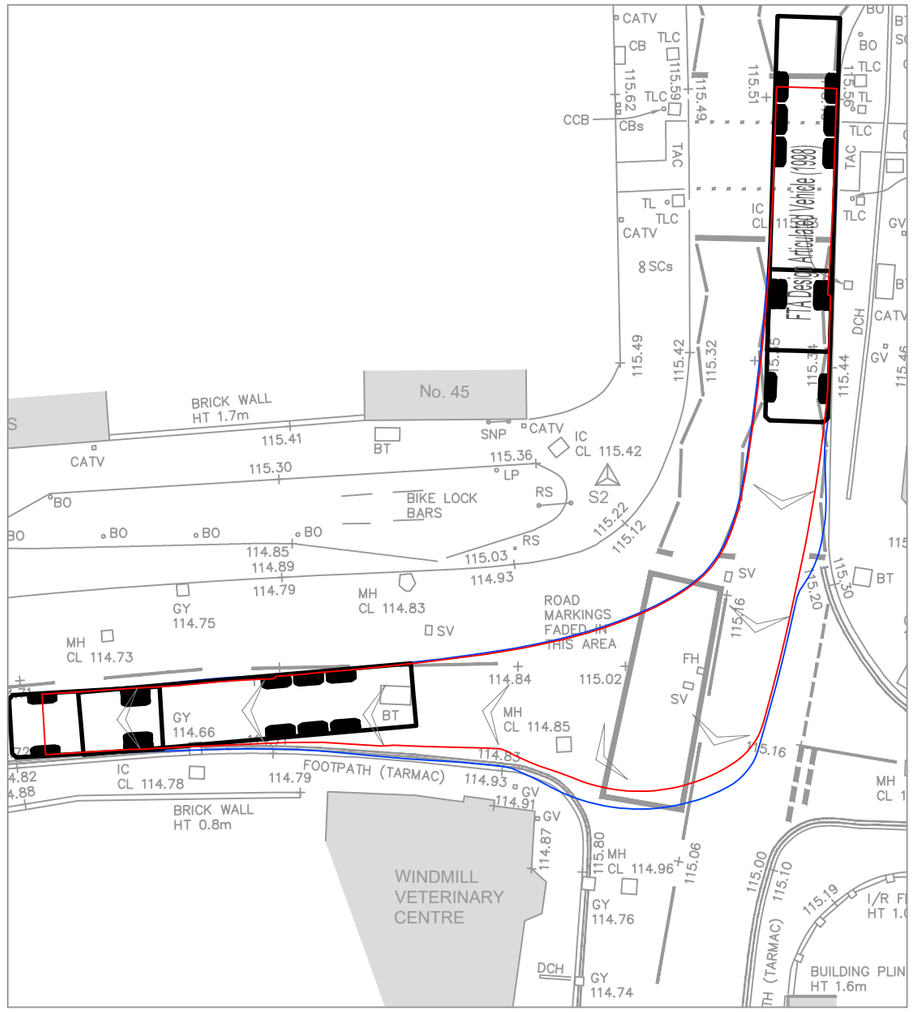
DRAWING TITLE:
# BURLEYS ROAD / VICARAGE ROAD 16.5m ARTICULATED VEHICLE SWEPT PATH ANALYSIS

MILES WHITE TRANSPORT

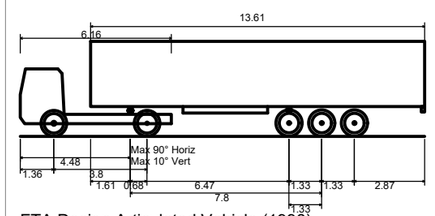
| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 30.05.2023 | 1:250 | A3 | 23030-SPA03 | - |




LEFT TURN FROM VICARAGE ROAD TO HIGH STREET
(SCALE 1:250)




RIGHT TURN FROM HIGH STREET TO VICARAGE ROAD
(SCALE 1:250)




| FTA Design Articulated Vehicle (1998) | |
|---|---|
| Overall Length | 16.480m |
| Overall Width | 2.550m |
| Overall Body Height | 3.870m |
| Min Body Ground Clearance | 0.515m |
| Max Track Width | 2.470m |
| Lock to lock time | 3.00s |
| Kerb to Kerb Turning Radius | 6.550m |

16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)

| REV | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| | | | | |

NOTES:
1. Do not scale from this drawing.
2. This drawing is for illustrative purposes only and not for construction.
3. This drawing is to be read and printed in colour.

PROJECT: EAST CLAYDON BATTERY ENERGY STORAGE

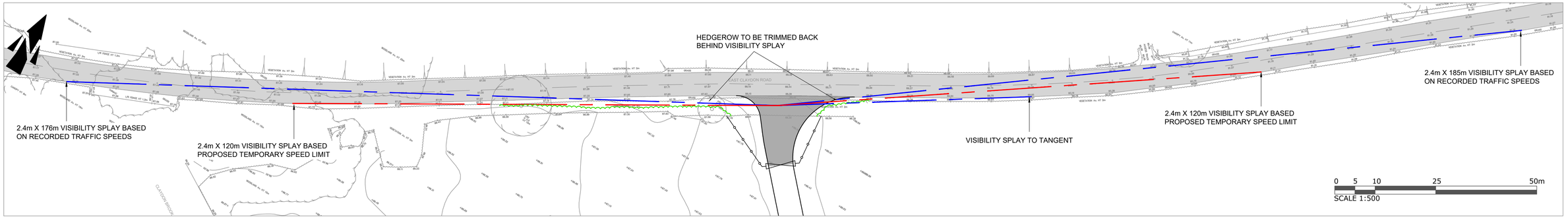
CLIENT: STATERA ENERGY LTD

DRAWING TITLE:
# VICARAGE ROAD / HIGH STREET 16.5m ARTICULATED VEHICLE SWEPT PATH ANALYSIS

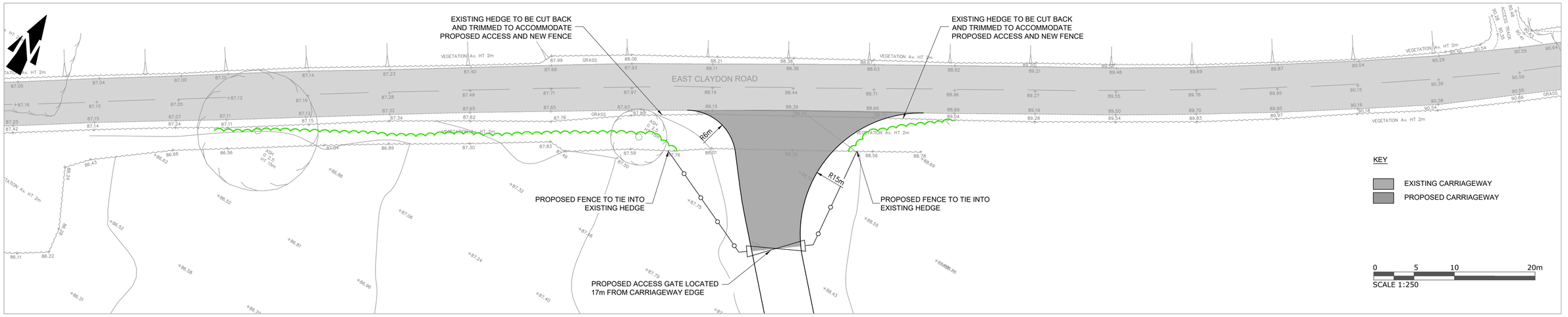
MILES WHITE TRANSPORT

| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 30.05.2023 | 1:250 | A3 | 23030-SPA04 | - |

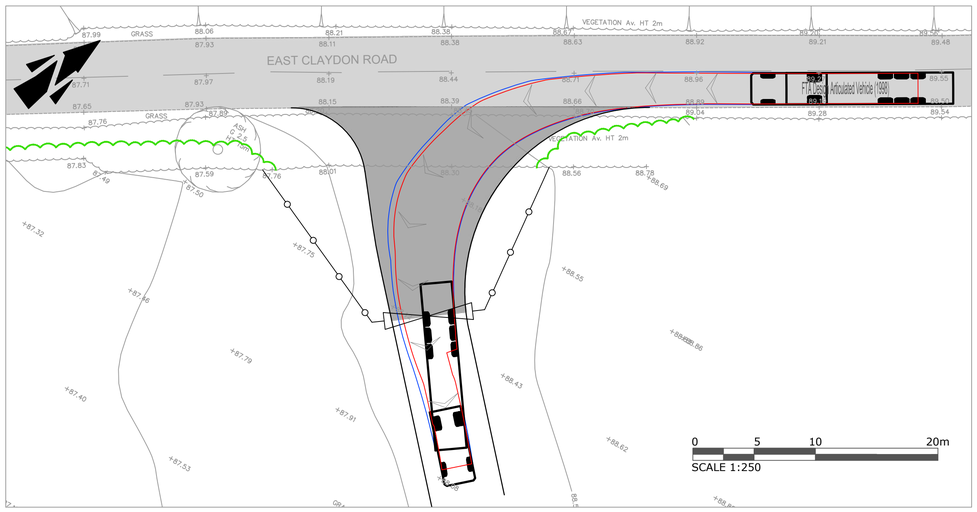
# APPENDIX 4 – East Claydon Road and Hogshaw Road Access Plans



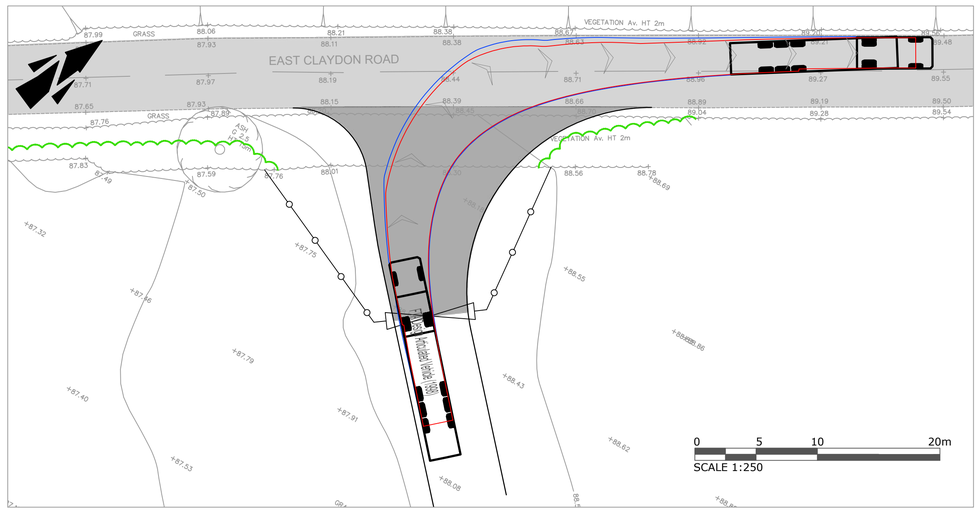

PROPOSED ACCESS VISIBILITY SPLAYS
(SCALE 1:500)



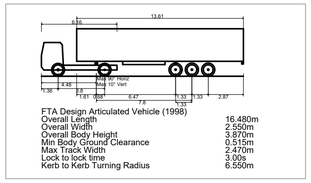

PROPOSED SITE ACCESS ARRANGEMENT
(SCALE 1:250)




16.5m ARTICULATED VEHICLE LEFT TURN INTO SITE MANOEUVRE
(SCALE 1:250)




16.5m ARTICULATED VEHICLE RIGHT TURN OUT OF SITE MANOEUVRE
(SCALE 1:250)



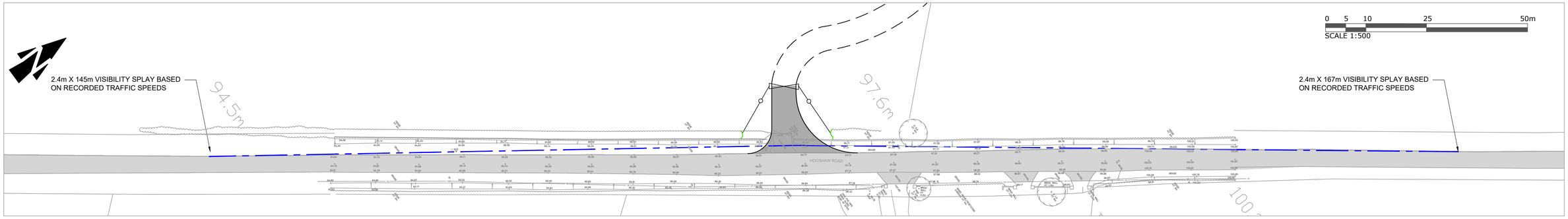

16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)

| REV: | DETAILS | DRAWN: | CHECKED: | DATE |
|---|---|---|---|---|
| | | | | |

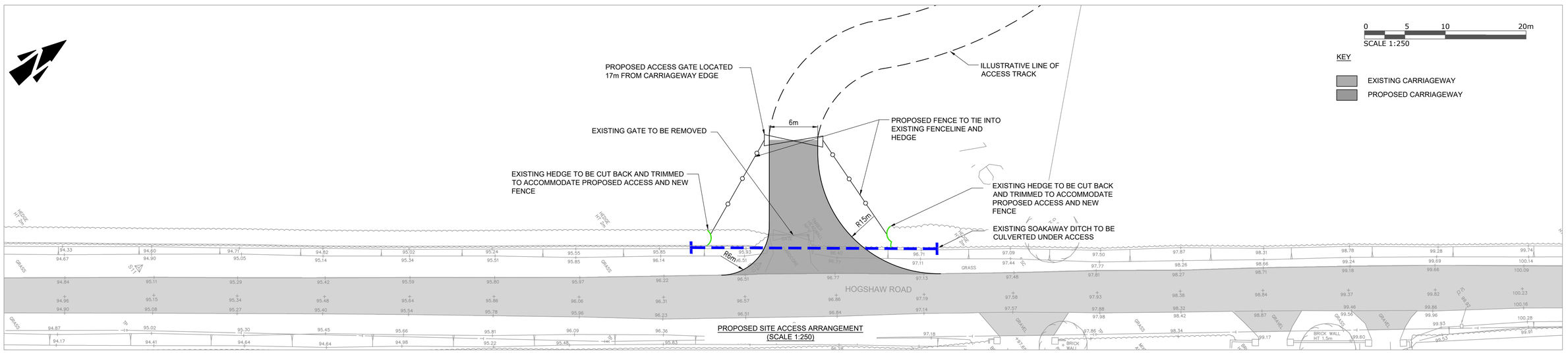
NOTES:
1. This drawing is for illustrative purposes only and not for construction.
2. This drawing is to be read and printed in colour.

| | |
|---|---|
| PROJECT: | EAST CLAYDON BATTERY ENERGY STORAGE |
| CLIENT: | STATERA ENERGY LTD |
| DRAWING TITLE: | CONSTRUCTION ACCESS FROM EAST CLAYDON ROAD |

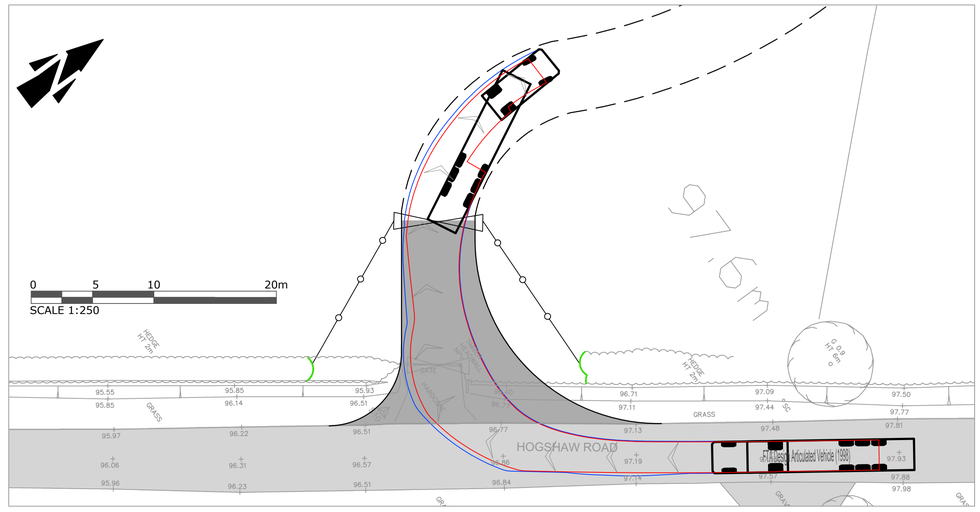
| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 13.10.2023 | As Shown | A1 | 23030-GA02 | - |



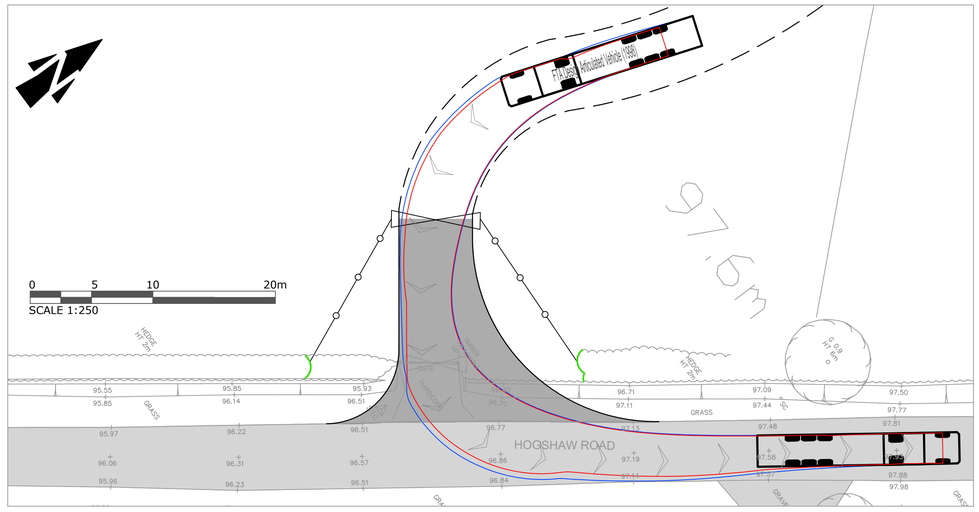

PROPOSED ACCESS VISIBILITY SPLAYS
(SCALE 1:500)




PROPOSED SITE ACCESS ARRANGEMENT
(SCALE 1:250)




16.5m ARTICULATED VEHICLE RIGHT TURN INTO SITE MANOEUVRE
(SCALE 1:250)

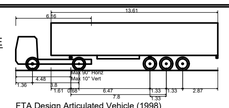



16.5m ARTICULATED VEHICLE LEFT TURN OUT OF SITE MANOEUVRE
(SCALE 1:250)

| REV. | DETAILS | DRAWN | CHECKED | DATE |
|---|---|---|---|---|
| A | TOPOGRAPHICAL SURVEY ADDED PLAN ADJUSTED TO SUIT. | SLW | CDM | 25.05.2023 |

NOTES:
1. This drawing is for illustrative purposes only and not for construction.
2. This drawing is to be read and printed in colour.

16.5m ARTICULATED VEHICLE PROFILE
(SCALE 1:250)




FTA Design Articulated Vehicle (1998)

| | |
|---|---|
| Overall Length | 16.480m |
| Overall Width | 2.550m |
| Overall Body Height | 3.870m |
| Min Body Ground Clearance | 0.515m |
| Max Track Width | 2.470m |
| Lock to lock time | 3.00s |
| Kerb to Kerb Turning Radius | 6.550m |

PROJECT: EAST CLAYDON BATTERY ENERGY STORAGE

CLIENT: STATERA ENERGY LTD

DRAWING TITLE: SITE ACCESS FROM HOGSHAW ROAD

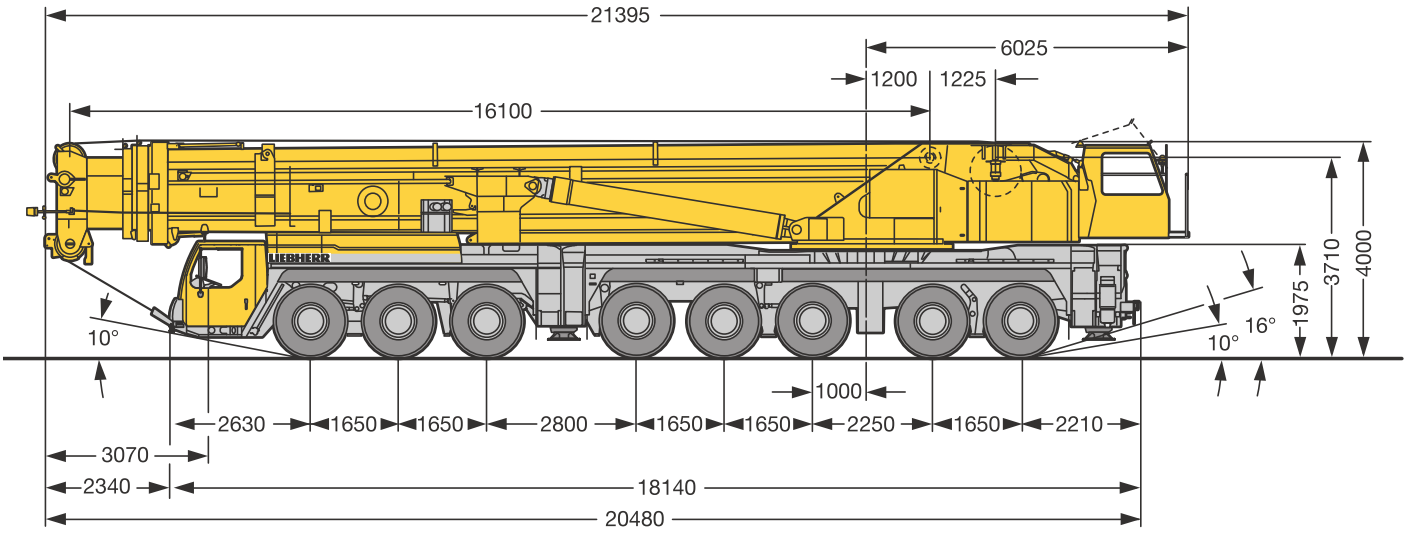
MILES WHITE TRANSPORT

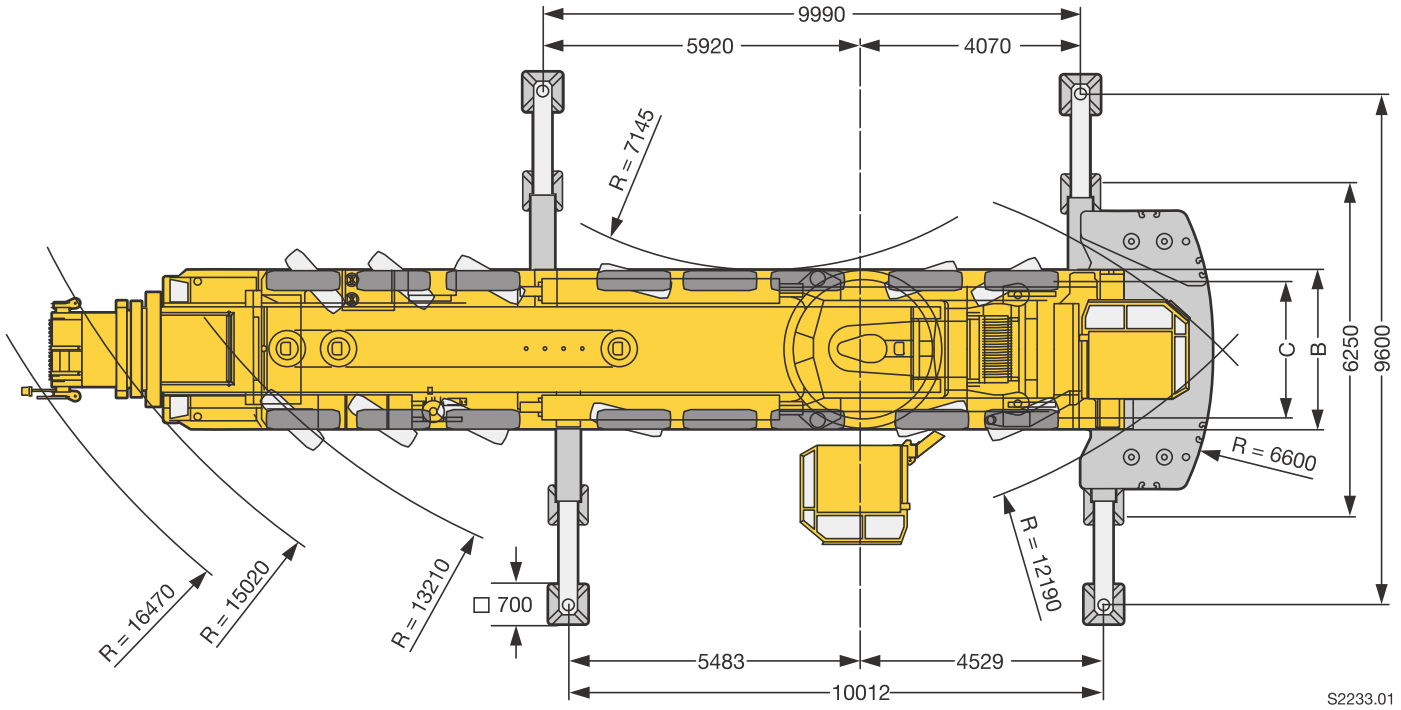
| DRAWN: | CHECKED: | DATE: | SCALES: | SHEET SIZE: | DRAWING NUMBER: | REVISION: |
|---|---|---|---|---|---|---|
| SLW | CDM | 05.05.2023 | As Shown | A1 | 23030-GA01 | A |

# APPENDIX 5 – Typical Large Crane Details

# Maße
# Dimensions
## Encombrement · Dimensioni
## Dimensiones · Габариты крана

50 m




Bereifung 385/95 R 25 (14.00 R 25) · Tyres 385/95 R 25 (14.00 R 25) · Pneumatiques 385/95 R 25 (14.00 R 25) · Pneumatici: 385/95 R 25 (14.00 R 25)
Neumáticos: 385/95 R 25 (14.00 R 25) · Шины: 385/95 R 25 (14.00 R 25)

| | Maße · Dimensions · Encombrement · Dimensioni · Dimensiones · Размеры mm | |
|---|---|---|
| | B | C |
| 385/95 R 25 (14.00 R 25) | 3000 | 2612 |
| 445/95 R 25 (16.00 R 25) | 3000 | 2552 |
| 525/80 R 25 (20.5 R 25) | 3230 | 2702 |