APPENDIX 11.1: CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Construction Traffic Management Plan (CTMP)

Siemens BAM Document No. GRNS4-LT379-SEBAM-ENV-XX-RPT-OE-0002

Greens 400kV Substation

Scottish & Southern Electricity Networks (SSEN)

SSEN Document No. GRNS4-LT379-SEBAM-ENV-XX-RPT-OE-0002

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1 Introduction

1.1 Project Details

As part of the SSEN commitment to upgrade the electricity transmission network in the North of Scotland a new 400kV Substation is required within relative proximity to the existing substation at New Deer, Aberdeenshire, Scotland, AB53 5YP (the 'Site'). The new substation, known as Greens 400kV Substation, will enable increased generation in the North East of Scotland to connect to the transmission network, via the new Beauly – Blackhillock – New Deer – Peterhead 400kV Overhead Line (OHL). This OHL will allow power sharing between the West and East Corridors of the SHE Transmission Network. Currently there are insufficient bays available at the existing New Deer 400kV substation to accommodate the new connections.

Figure 1. ASTI Scheme Diagram

The new 400kV substation will be sized to accommodate 25 bays – 19 plus a further 6 bays for future provision. The subject site is situated approximately 6km to the West of the town of New Deer, Aberdeenshire and 1km North of the existing New Deer substation. The site comprises agricultural land and is only accessible via a network of minor public roads. Greens is a new build, greenfield site comprising the following key scope:

- Construction of a new 25 bay 400kV AIS substation
- A 1.2km access road + bellmouth from the C29S road on the east side of the site
- Construction of a new crossing over the Burn of Greens to facilitate the site access road
- Establishing site welfare, laydown areas and access tracks.
- Site clearance
- Bulk earthworks
- Construction of a level substation platform through a cut – fill balance
- Construction of a new substation platform using both site won material and imported stone
- Construction of 3 steel frame buildings, for operating the substation and housing the control equipment and computer systems
- AIS civils construction activities, including ducting, drainage, earthing etc.
- Installation and commissioning of all AIS equipment.
- Total land take of approximately 114 ha

Figure 2. Site Layout

1.2 Purpose of the CTMP

The aim for this Construction Traffic Management Plan (CTMP) is to set out the impact of the construction traffic on the surrounding road network and detail the mitigation measures which have been included within the design and would be implemented to mitigate, so far as is reasonably practical, the impact of traffic generated throughout the construction phase of the Proposed Development. As far as reasonably practicable, work will be programmed to minimise the impact on general traffic. This plan includes a description of the main access point and main construction delivery routes to site, as

well as a summary of the findings of the swept path analysis carried out for the delivery of abnormal loads.

Prior to commencing any work on site, the CTMP will be reviewed in close liaison with the Project Manager. The Project Manager will consult with external stakeholders on the contents of this CTMP before acceptance (as considered necessary by the Employer) giving due consideration to other influencing factors such as cumulative impact with other projects. The accepted version of this document will be in place as required under the schedule of deliverables for the project and will be incorporated into the construction contractor's documentation.

This CTMP is a live document for the duration of the project and reviews will be carried every quarter or when there is a significant change to the work method or transport arrangements or upon request of Aberdeenshire Council.

The objectives of the Traffic Management Plan are:

- Ensure that the movements of people, plant and materials are achieved in a safe, efficient, timely and sustainable manner
- To detail the volumes and types of traffic expected to be generated from the construction activities and ensure that traffic levels do not significantly exceed these accepted levels
- To detail any Abnormal Indivisible Loads (AIL) that are expected to come to site
- To detail the designated routes to site for both abnormal loads and general construction traffic, so as to limit the impacts of construction traffic on the local and strategic road networks
- To demonstrate how vehicle movements will be controlled and managed on the local and strategic road networks
- To show how the impact of construction traffic on the local road network and local communities will be minimised
- To demonstrate local traffic and pedestrian management requirements on the Aberdeenshire Council Road network, local to the site
- To establish how vehicle and pedestrian access will be achieved in to and inside the site boundary
- Ensure strategies and mitigation measures are implemented and adhered too, through continued monitoring, review and improvement of the CTMP

2 Construction Traffic

2.1 Introduction

This CTMP considers the construction phase of the Proposed Development only. Traffic management generated by the operation phase of the development will be minimal and associated with inspection and maintenance requirements.

2.2 Programme

The overall construction period is anticipated to last up to 48 months. Details may experience minor variation following the appointment / commencement of works by the Principal Contractor. However, all construction phase activity would be regulated, via the CTMP.

The CTMP sets out proposals for the traffic management including the access to and from the site, also including the storage of materials on site during the construction phase of the Proposed Development. Considerations to maintain the safety of pedestrians and cyclists within the vicinity of the site shall be considered and detailed by the CTMP.

2.3 Methodology

It is proposed that the access to the site shall be upgraded, and maintained within its current vicinity, to accommodate construction phase traffic movements. The proposed new access junction will be formed into a configuration to accommodate the volume and type of construction traffic that will be required to access / egress the site. These upgrade works will form part of a Section 56 and or Section 21 of the Roads (Scotland) Act 1984, which will control the technical aspects of its design and construction, for approval by Aberdeenshire Council. It should be noted that there is no existing infrastructure to support the movements of pedestrian or cyclists.

Due to the area available on the site, it is intended that all construction materials will be stored on the site and thus negating the need for an off-site storage facility. The site will be secured preventing access by members of the general public during times of construction, with use of a secure gate that will be manned to ensure only authorised personnel and construction deliveries are able to access the site.

2.4 Construction Vehicles Classification

There will be a variety of vehicle types that would be used for the construction of the Proposed Development. Vehicles will be required for the transportation of materials, workers and equipment to the site as well as vehicles for the exporting of any excess materials (e.g. soils).

For the construction of the Proposed Development; Light Goods Vehicles (LGVs), Heavy Goods Vehicles (HGVs) and Abnormal Indivisible Loads (AIL) will be required to transport personnel, materials and plant to and from the site. It should also be noted that the use of cars associated with the movement of personnel are expected. The following classifications in accordance with the Drivers and Vehicles Standards Agency Lorry types and weights Guide 1, the following classifications have been used for this CTMP:

- General construction traffic – cars, LGVs (vehicles 3.5 tonnes or below in gross weight) and HGVs (vehicles between 3.5 tonnes and 44 tonnes in gross weight).
- AIL traffic – specialist vehicles for the transportation of components & equipment which are classified as AIL due to their weight and/or size, this will include transformers, reactors and heavy plant such as cranes and quarrying equipment. An AIL is any load that cannot be broken down into smaller loads for transport without undue expense or risk of damage. These vehicles exceed one or more of the following parameters:
    - a weight of more than 44,000kg
    - an axle load of more than 10,000kg for a single non-driving axle and 11,500kg for a single driving axle
    - a width of more than 2.9 metres
    - a rigid length of more than 18.65 metres

2.5 General Construction Traffic

Due to the remote location of the site, the use of public transport or forms of active travel is not expected. The staff and construction operatives will generally travel to site in private cars, vans and minibuses. These will be parked in a designated parking area at the compound within the site boundary and as such will not impact local parking availability or impede traffic flows on the local road network. The majority of plant and material deliveries which come to site will be transported by LGVs and HGVs. A summary of the types of vehicles which will typically come to site is shown in the table below:

Description of haulage	Type of transport	Vehicle Class
Staff	Cars / Vans	Light
Workforce and subcontractor	Cars / Vans	Light
Site accommodation and maintenance	Vans	Light
Delivery of Civils materials	Flatbed lorry / Curtained	LGV(5-10t)
Skips	HGVs / Skip wagon	HGV (>10t)
Plant delivery (plus fuel)	Flatbed lorry	HGV (>10t)
Septic Tank waste removal	HGV	HGV (>10t)
Aggregates	Tipper lorry	HGV (>10t)
Ready-Mix concrete	Tipper lorry / Mixer wagon	HGV (>10t)
Pre-cast foundations	Flatbed lorry	HGV (>10t)
Delivery of Civils materials	Flatbed lorry / Curtained	HGV(>10t)
Substation road construction	HGV / Tipper lorry	HGV (>10t)
Delivery of M&E materials	Flatbed lorry/ Curtained	HGV (>10t)
Delivery of M&E materials	Various	LGV(5-10t)
Cable Drums	Flatbed lorry	HGV (>10t)

The frequency of these vehicle movements will fluctuate throughout the project. Based on current planning of the works operations, Siemens BAM have estimated the amount of construction traffic movements anticipated for each phase of the construction. These vehicle movements are summarised in Section 2.7.

The delivery routes to site for general construction traffic are detailed in Section 3.1. A route assessment will also be carried out to identify any sections of the route which are unsuitable for the anticipated type, weight or volume of construction traffic, with any upgrades or improvements submitted for agreement by Aberdeenshire Council. Prior to commencement of the works, these upgrades will be constructed through a scheme of localised Public Road Improvement works. This will include construction of passing places, widening of roads and construction of the bell mouth at the proposed entrance to site.

2.6 Abnormal Indivisible Loads

The construction of the substation will require a number of AIL deliveries which will come to site on specialist transport platforms or trailers. These deliveries will be identified well in advance of the main works and a swept path analysis will be completed to identify conflict areas where the delivery could cause obstruction to other road users or require temporary works to accommodate its safe movement on the road network.

As the size and weight of these items exceeds the acceptable limits for normal road traffic, a specialist haulage contractor will be utilised to assist with reporting, planning and executing the delivery of AIL. This will include any required assessment to determine the existing structures (e.g., bridges & culverts) weight restriction/loading capacity along the designated construction traffic routes, to ensure their capacity to accommodate the required loads.

A summary of the abnormal loads predicted to be required during the construction phase is shown in Section 2.7.

An assessment of the load types, weights, and dimensions has been carried out and a detailed breakdown of which deliveries require to approach site from the Southern route to site and which can come from the Northern route.

Southern Route (for Heavier Abnormal Loads)

For the largest and heaviest loads, such as the generators, transformers, rotors, TEWAC units, and flywheels, the Southern route must be used for the following reasons:

- **Manoeuvrability**: The northern route involves a sharp left turn on the B9170, which is challenging for oversized loads. Negotiating this turn would require extensive enabling works, including potential land modifications and tree removal, increasing both costs and environmental impact.
- **Reduced Enabling Works**: The southern route minimises the need for additional works, reducing risk and project delays. It has been previously assessed and is known to be capable of handling similar large, abnormal loads.
- **Safety and Compliance**: The southern approach has a more accommodating layout for police escort requirements and simplifies compliance with Temporary Traffic Regulation Orders (TTROs), which will be necessary for these large loads. Police Scotland will escort these loads along the route, and TTROs are planned in advance to ensure smooth passage.

These loads are classified as **Abnormal Indivisible Loads (AILs)** under UK legislation due to their size and weight, necessitating police escort, special order permits, and compliance with the Special Types General Order (STGO) regulations.

Northern Route (for Smaller Loads)

For the smaller items, the Northern route is a feasible alternative, pending availability and site logistics considerations.

Legal and Practical Rationale for Small Loads:

- **Additional Covers (7.5 tonnes)**: These items fall well within the standard haulage limits and can be transported via standard articulated lorries without any special permissions. They do not exceed the thresholds for width, length, or weight, and can safely access the site from either the north or south as preferred.
- **Main Covers (30.5 tonnes)**: These are considered **wide loads** (at 5.0 meters wide), meaning they exceed the 3.5-meter threshold under UK legislation but are not classified as abnormal loads. Therefore, they do require **notification to police and highway authorities** but do not necessitate a police escort or specific abnormal load routing.

2.7 Delivery Schedule & Details of Abnormal Loads

Construction Phase	Plant or Equipment	Route	Anticipated no. of loads	Deliver to Site	Remove from Site
Earthworks	50t Excavators - 4no. Rock crushers - 3no.	Northern Northern	14	September 2025 – July 2026	September 2027 – January 2028
Platform Works	Mobile cranes - 2no.	Northern	4	November 2026 – February 2027	June 2028 – September 2028
Building Works	Mobile cranes - 1no.	Northern	2	November 2026 – January 2027	July 2027 – October 2027

Construction Phase	Plant or Equipment	Route	Anticipated no. of loads	Deliver to Site	Remove from Site
M&E Installation (including AILs)	Transformers - 2no. Generators - 2no. Additional Cover- 2no. Rotor- 2no. TEWAC- 2no. Flywheel- 2no. Mobile cranes – 4no.	Southern Southern Northern Northern Southern Southern Southern	16	May 2028 – September 2028	January 2029 – July 2029

2.8 Anticipated Deliveries and Vehicle Movements

The below table shows a summary of the levels of general construction traffic expected to be generated during the construction phase of the project.

Description of haulage	Type of transport	Vehicle Class	Anticipated Delivery Window	Total Movements	Average Movements per Day for period
Staff	Cars / Vans	Light	Sep 2025 - Dec 2029	31352	30
Workforce and subcontractor	Cars / Vans	Light	Sep 2025 - Dec 2029	56840	53
Site accommodation and maintenance	Vans	Light	Sep 2025 - Dec 2029	948	1
Delivery of Civils materials	Various	LGV (5-10t)	Sep 2025 – Aug 2029	1292	2
Skips	HGVs / Skips	HGV (>10t)	Sep 2025 - Dec 2029	1612	2
Plant delivery plus fuel	Flatbed lorry	HGV (>10t)	Sep 2025 - Dec 2029	2836	3
Septic Tank waste removal	HGV	HGV (>10t)	Sep 2025 - Dec 2029	488	1
Aggregates	Tipper lorry	HGV (>10t)	Jan 2026 - Apr 2028	31360	56
Ready-Mix concrete	Tipper lorry / Mixer	HGV (>10t)	Apr 2026 - Aug 2028	2128	4
Pre-cast foundations	Flatbed lorry	HGV (>10t)	Sep 2025 - May 2027	1280	4
Delivery of Civils materials	Flatbed lorry/ Curtained	HGV(>10t)	Sep 2025 - Aug 2029	5400	6
Substation road construction	HGV / Flatbed lorry	HGV (>10t)	Apr 2028 - Nov 2028	640	4
Delivery of M&E materials	Flatbed lorry/ Curtained	HGV (>10t)	Jun 2027 – Dec 2028	1216	4
Delivery of M&E materials	Various	LGV (5-10t)	Jun 2027 - Dec 2028	2432	7
Cable Drums	Flatbed lorry	HGV (>10t)	Jul 2028 - Aug 2028	40	1
Misc M&E Ancillaries	Various	LGV (5-10t)	Jun 2027 - Dec 2028	1140	3

3 Intended Delivery Routes

3.1 Delivery Route for General Construction Traffic

The site boundary is as indicated by the red line on the diagram below:

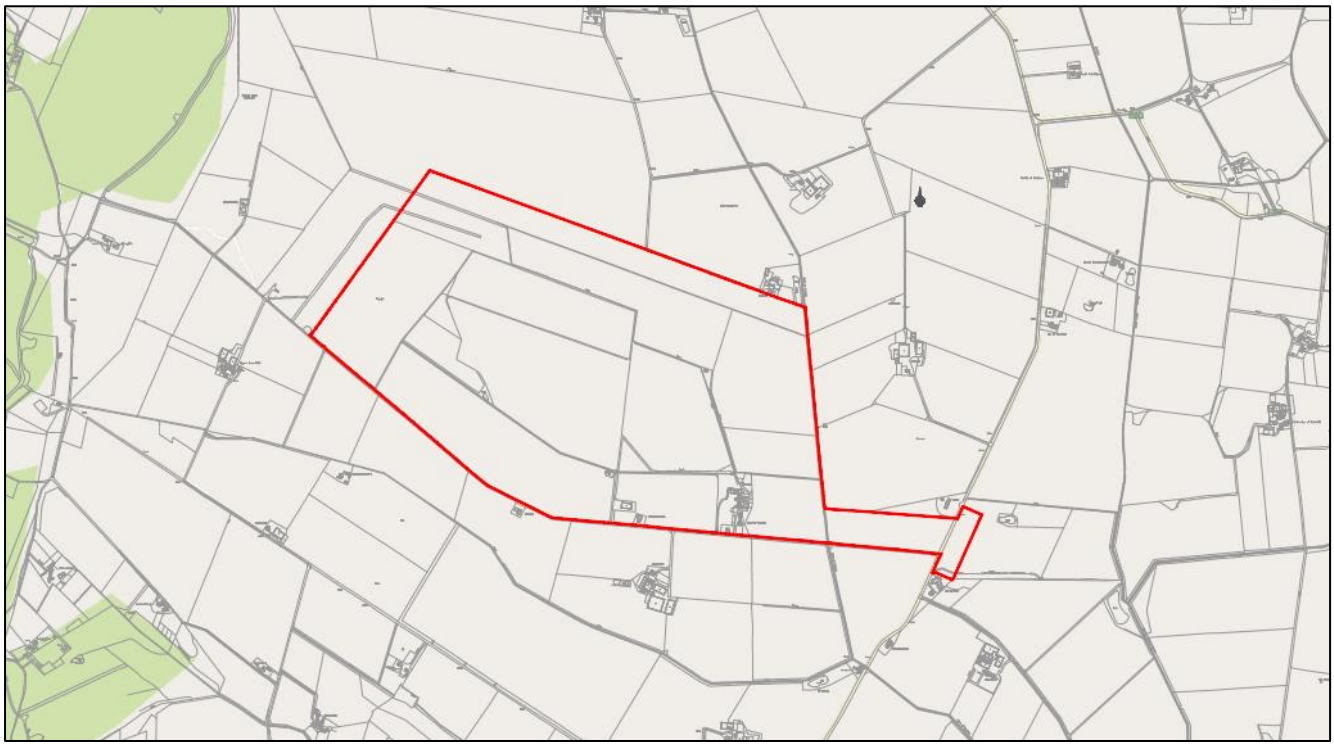

Figure 3. Red Line Boundary

All vehicles coming to site will come via New Deer, travelling onto the B9170 and then turning left onto the C29S on the eastern edge of the site boundary. HGV traffic will be subject to a voluntary speed limit of 20 mph to the west of and within the village of New Deer. This is proposed to reduce the impact of HGV traffic on pedestrian, cyclist and equestrian traffic in the interests of road safety. Vehicles will access the site compound by turning right off the C29S into the newly constructed bell-mouth at the site entrance. After checking in at the security cabin, they will travel up the access track to the site compound for further instruction.

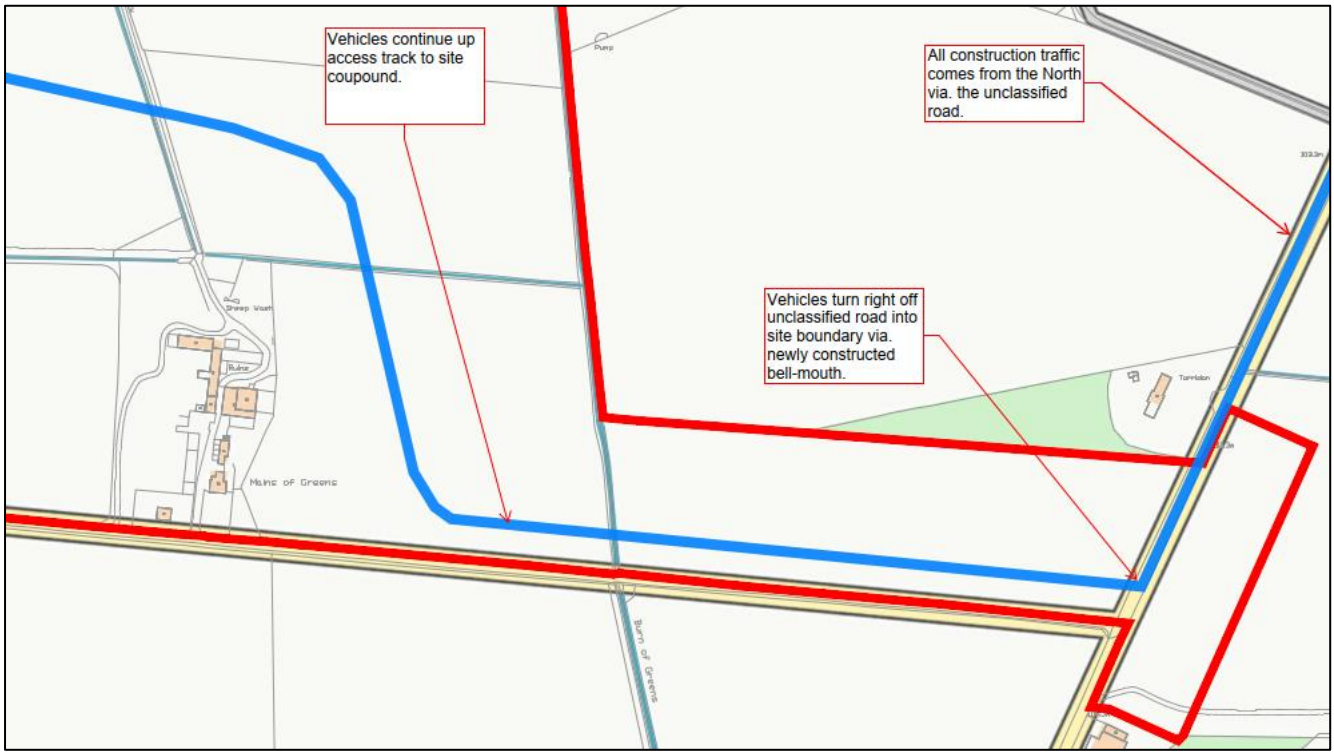

Figure 4. Access to Site

Following consultation with Aberdeenshire Council Roads Officers (ACRO) via a pre-application meeting held on the 14th May 2024 it was agreed that the three selected construction routes to site identified in report GRNS4-SEBAM-ZZ-ZZ-RPT-H-0901 were acceptable to them albeit with a preference priority as follows:

- Primary Route A90(T)-A948-B9170
- Secondary Route A96(T)-A920-B9170
- Tertiary Route A98-A950-A981-B9170

Route 1: A90(T)-A948-B9170 (Primary Route)

The A90(T) will provide the main primary route to site as far as possible, and as such full cognisance of Transport Scotland's High Load Grid (November 2022) document. Once construction traffic leaves the A90(T) at the A90(T) / A948 / Lintmill Brae (Ellon North) Roundabout construction traffic would follow the local road network under the jurisdiction of Aberdeenshire Council as follows: (south to north):

1. Turn left / right from A90(T) to A948
2. Continue on A948 through Auchnagatt and New Deer
3. Continue through New Deer (A948 terminates) onto B9170 Auchreddie Road West
4. Turn left onto C29S
   (Total Distance = 17.6 miles)

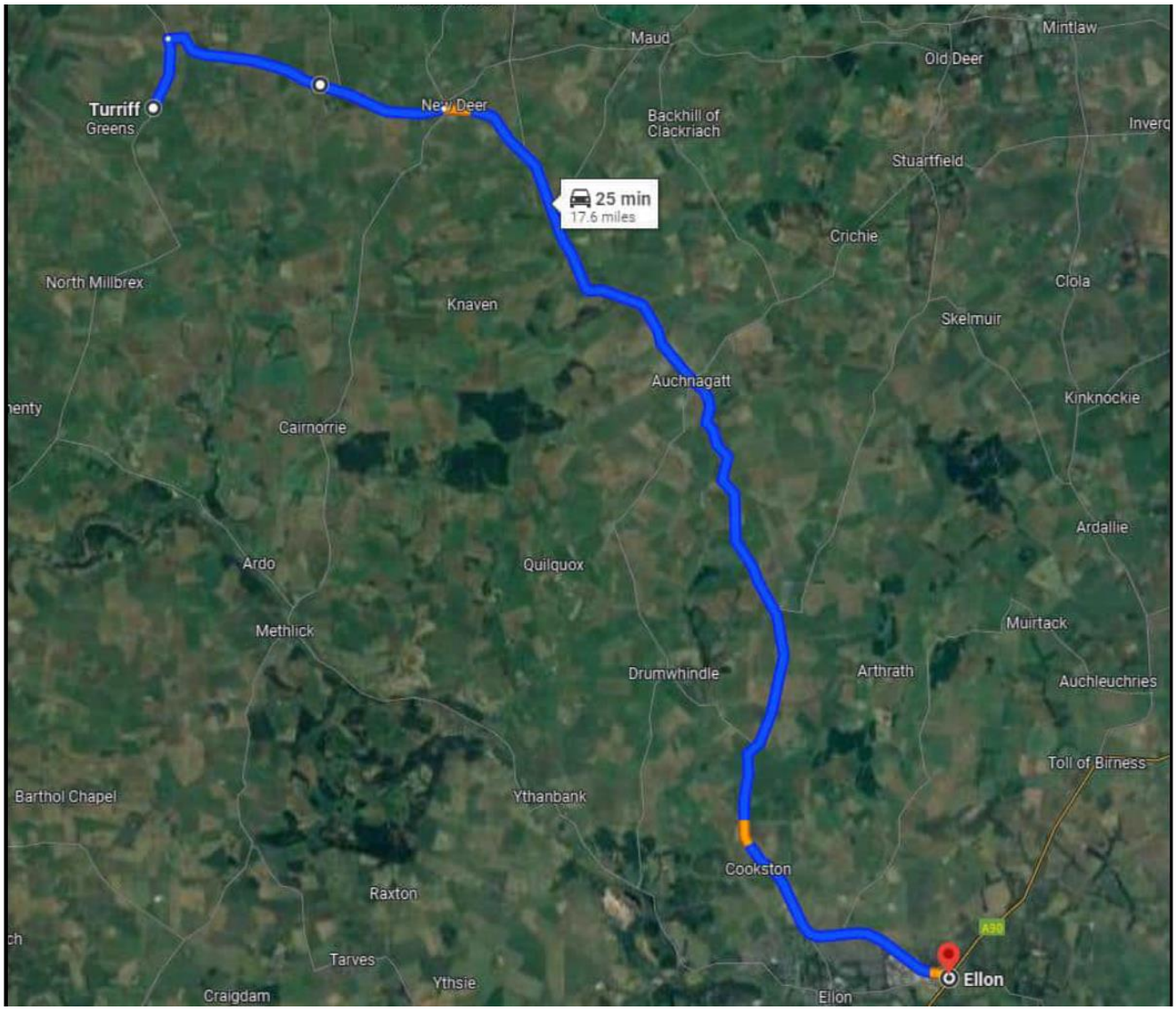

Figure 5. Route 1

Following consultation with ACRO, two sections of this route have been checked for potential geometric constraints:

- A948: Waulkmill Croft – Mill of Elrick – Auchnagatt (approx. distance 2.2 miles)
- B9170: Gellybrae Farm to C29S / B9170 junction (approx. distance 0.9 miles)

To carry out these assessments, Ordnance Survey mapping of these sections of road were obtained and an SPA was undertaken for a 16.5m Artic lorry running in both directions, with any constraints mitigated on a temporary basis.

The A948 SPA for Waulkmill Croft – Mill of Elrick – Auchnagatt is illustrated in Appendix A - which shows two sections of geometric pinch point:

1. At the Burn of Fortree Bridge Crossing where the carriageway narrows to 5.5m (parapet to parapet).

2. At a concealed access into some agricultural buildings within the hamlet of Mill of Elrick where carriageway width is actually 6m wide but is on a very tight bend in terms of horizontal curvature.

For both pinch-points the same temporary mitigation solution of providing Traffic Signs Regulations & General Directions (TSRGD) Chapter 8 temporary non prescribed signage stating 'Construction Traffic Carriageway Narrows Ahead' will be provided in both directions, as well as a 'SLOW' road marking provided in accordance with the TSRGD Diagram 1024. The approximate location of all these required signs and road markings is provided in Appendix A.

The B9170 SPA for Gellybrae Farm to C29S / B9170 junction is illustrated in Appendix A which shows three sections of geometric pinch point:

1. Along the development frontage of Gellybrae Farm where carriageway narrows to below 5.5m over a distance of 15m.
2. At the S-Bend in proximity to the access junction for Allathan House, tight horizontal curvature means that a HGV would straddle over the centre line of the road (at two locations).
3. At Dam Brig Bridge and the tight corner bend for Fairview Allathan Farm Buildings. The carriageway narrows to slightly below 5.5m over the Dam Brig and then has a tight corner horizontal radius (circa approx. 30-35m) as it passes Fairview Allathan Farm Buildings meaning that an HGV would straddle over the centre line of the road.

For all three pinch-points, TSRGD Chapter 8 temporary non prescribed signage stating 'Construction Traffic Carriageway Narrows Ahead' will be provided in both directions, as well as a 'SLOW' road marking provided in accordance with the TSRGD Diagram 1024 (the same as that stipulated for Waulkmill Croft – Mill of Elrick – Auchnagatt).

The approximate location of all these required signs and road markings is provided in Appendix A. The above mitigation solution has been agreed with ACRO via email correspondence received on the 18th June 2024.

Route 2 - A96(T)-A920-B9170 (Secondary Route)

The A96(T) will provide the secondary route to site as far as possible, and as such full cognisance of Transport Scotland's High Load Grid (November 2022) document. Once construction traffic leaves the A96(T) / A920 'ghost island' priority junction, they would follow the local road network under the jurisdiction of Aberdeenshire Council as follows: (south to north):

1. Turn left or right from A96(T) onto A920
2. Continue on A920 as far as the B9170
3. Turn left onto the B9170 and continue to New Deer via Methlick
4. Continue through New Deer onto B9170 Auchreddie Road
5. Turn left onto the C29S
   (Total Distance = 26.8 miles)

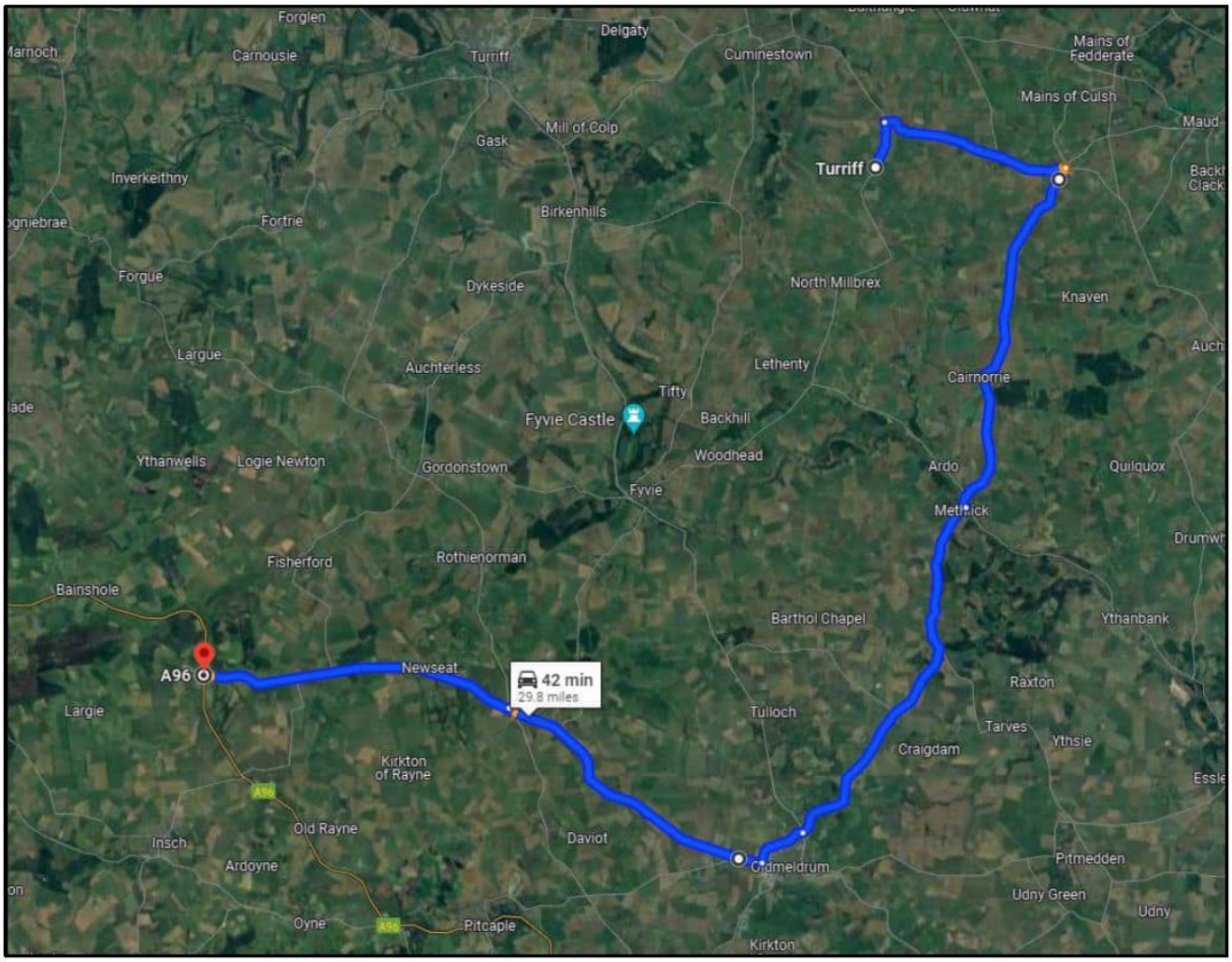

Figure 6. Route 2

Following consultation with ACRO, a single section of the route has been checked for potential constraints utilising the same methodology as that described for Route 1.

The section of road that was assessed is located in the north of Oldmeldrum around the A920 / A947 / B9170 Roundabout in proximity to the Meldrum House Hotel as well as the B9170 immediately to the north of the roundabout.

The SPA assessment is illustrated in Appendix A, which illustrates two sections of geometric pinch-point.

1. At the B9170 entry arm of the A920 / A947 / B9170 Roundabout where it interacts with the private access to the Meldrum House Hotel.

2. The carriageway width immediately to the north of the A920 / A947 / B9170 Roundabout where it reduces down to approx. 5m before widening out to 6m at the bend to the north.

The following measures will be implemented to make drivers more 'aware' of the pinch-points and make it easier for vehicles to react to each other and improve road safety, by:

- Installing TSRGD Chapter 8 temporary non prescribed signage stating 'Construction Traffic Carriageway Narrows Ahead' will be provided in both directions, as well as a 'SLOW' road marking provided in accordance with the TSRGD Diagram 1024 at both the northern and southern ends of the pinch-point.
- Installation of carriageway narrowing signage in both directions in accordance with TSRGD Diagram 516 complimented with a 'SLOW' road marking provided in accordance with the TSRGD Diagram 1024.
- Installation of Reflective Verge Marker Posts for grass verge protection around the bend in the road in accordance with TSRGD Diagram 561

These proposals are illustrated in Appendix A.

Route 3 A98-A950-A981-B9170 (Tertiary Route)

The A98 will provide a tertiary route to site, for any localised construction traffic coming from the north only. At the time of writing the route is not expected to be extensively used by construction traffic, with the route really only serving traffic needing to come from the relatively limited catchment of Fraserburgh, Banff or Portsoy. Feedback from ACRO on the 14th May 2024 also suggested that their preference would be for the trunk road network to facilitate as much construction traffic as possible, which this doesn't form part of. Notwithstanding this, once construction traffic leaves the A98 / A950 'ghost island' priority junction the specified route is as follows:

1. Turn left or right from A98 onto A950 and head southwards through New Pitsligo
2. Turn right onto A981
3. Continue ahead onto the B9028
4. Turn right onto A948 and continue towards New Deer
5. Continue onto B9170 Auchreddie Road West
6. Turn Left on C29S
   (Total Distance = 14.5miles)

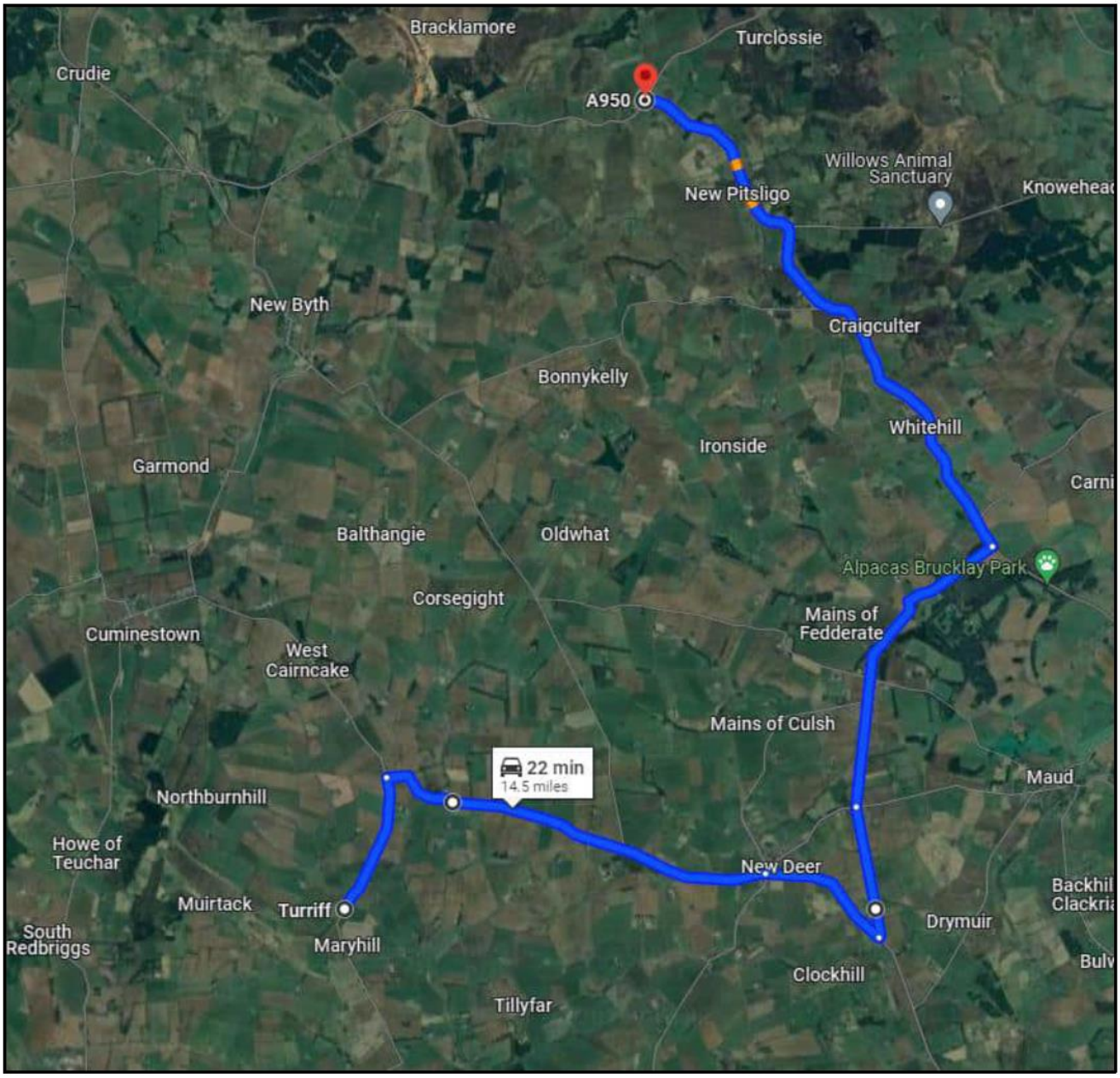

Figure 7. Route 3

3.2 Construction Staff

It is anticipated that construction staff will be made up of a combination of those who reside locally and those that live further away, with the majority of staff requiring to be given temporary accommodation in the local area during the working week before returning home at the weekend.

The majority of staff staying locally, on a temporary accommodation basis, will be transported to site for the beginning of the working day by bus. Those who reside locally permanently may make their own way to site, this is likely to represent only a minority of staff given the sites rural location, scale and duration of the construction programme. In both cases staff will be encouraged to plan their route appropriately and make use of the most suitable infrastructure available and will be advised of the approved construction traffic routes. It is envisaged that staff will use local roads and where appropriate approved construction traffic routes from their location to the access of the site.

3.3 Delivery Route for Abnormal Indivisible Loads

Refer to Appendix B - Abnormal Indivisible Loads Assessment

4 Route Traffic Management Considerations & Mitigation

4.1 Monitoring, Maintenance and Repair to the Public Road

Pre-start Condition Survey
A Pre-start road condition survey will be carried out prior to commencing any works, so as to establish a baseline as part of a Section 96 of the Roads (Scotland) Act 1984 agreement with Aberdeenshire Council Roads Authority. SSEN, and all affected contractors/stakeholders will be offered the opportunity to attend while this survey is undertaken. A video will be taken of the local route recording the following types of defects (not exhaustive):

- Wheel track cracking
- Wearing Course Deterioration (Major Cracking)
- Wearing Course Deterioration (Potholes)
- Edge Deterioration
- Verges
- Roadside drainage (ditches and filter drains)
- Fixed Signage

A Video/photographic survey will be undertaken at 50m intervals identifying details of specific defects within defined chainages along the public road and incorporated within a survey report. Chainages/ ref points shall be recorded in such a way that they can be easily identified during follow up surveys – e.g. through use of marker posts and / or reference to fixed reference points. This survey establishes a baseline to which any repairs or reinstatement will be measured against.

Monitoring During Construction Period
During the construction stage, the public roads surrounding site shall be inspected, to a time scale to be agreed with by Aberdeenshire Council, by the Siemens BAM and SSEN Construction Site Managers to determine any deterioration in the road condition. A record of these inspections shall be maintained, confirming the date of the inspection and details of the defects, these reports shall be provided to Aberdeenshire Council for consideration.

Post-works Condition Survey
Immediately following completion of the works, a final road condition survey shall be carried out similar to the pre-start condition survey. The inspection report shall record all areas that have deteriorated since the start of the works and will be provided to SSEN Project Manager and Aberdeenshire Council for agreement.

Maintenance and Repair
Siemens BAM will take every possible precaution to prevent damage to the road network caused by our construction

activities. In this instance Siemens BAM will carry out any such maintenance works as are necessary to maintain the roads in the vicinity of the works in a serviceable condition to the required standards of the Local Authority during the construction phase.

4.2 General Traffic Management Controls

Permitted Traffic Times
Dependant on the planning conditions, construction operations will be carried out on site between the hours of:

Monday – Sunday
0700 to 1900hrs

There will be no access to the site out with normal working hours unless arrangements have been made with SiemensBAM and agreed with SSEN Project Manager and Aberdeenshire Council. Access will be restricted to site personnel only and visitors who have pre-booked inductions.

The peak School times are approx. from 0830 to 0930 and 1530 to 1630, Monday to Friday with the School lunch break from approx. 1230 to 1330. All heavy construction traffic entering and leaving site will be reduced/restricted, where practicable, during these times to minimise/avoid conflict with children and pedestrians.

General Traffic Management Controls

Traffic management methods would be used to enhance safety conditions on the local road network that form the identified construction routes and where physical mitigation measures are impractical or cannot be accommodated during the construction period of the Proposed Development. The Traffic Signs Manual Chapter 8 states:

"The complexity of traffic management arrangements varies from scheme to scheme, but the primary objective is always:

- To maximise the safety of the workforce and the travelling public

The secondary objective is:

- To keep traffic flowing as freely as possible"

Traffic management on all roads (except dual carriageways with a speed limit of 50mph or more) would comply with the UK Government's Code of Practice 'Safety at Streetworks and Roadworks' (DfT, 2013) and would be agreed with the Aberdeenshire Council prior to the commencement of works.

Traffic Management signage would be in accordance with the Traffic Signs Regulations and General Directions (TSRGD) 2016 and Traffic Signs Manual Chapter 8. Signage will be installed along the designated construction traffic route to clarify the route for delivery drivers and make other road users aware of the presence of construction traffic

All traffic management works are to be completed by trained competent personnel from a specialist subcontractor. All Temporary Traffic Management Systems shall be designed and installed in accordance with Traffic Signs Manual Chapter 8. A risk assessment and method statement shall be completed for the installation of each TTMS and shall consider hazards associated with the scheme and necessary control measures.

Where reasonable and practicable, construction vehicles will avoid travelling in convoys on public roads. Construction staff using private vehicles to travel to the site will park their vehicles in designated construction site car parks and not on public roads.

Proposed Mitigation Measures

The following additional control measures will be implemented to mitigate the impact of the construction traffic on the public and local road network:

- Agreed construction access route to the site will be briefed in advance to the supply chain and to all operatives as part of a "Driver Code of Conduct" document that will be issued in advance of any construction movements
- Construction traffic will follow the predetermined route to minimise disruption in sensitive areas such as villages and schools. Where passage through sensitive areas is unavoidable, drivers will be briefed on their presence and advised of any additional measures to be undertaken, such as reduced speed for construction traffic through use of a Driver Code of Conduct.
- All vehicles coming to site are to report to the security check point, located after the bellmouth at the new site entrance.
- A road safety assessment and Road Safety Audit will be undertaken on the final layout and arrangements required for construction access to the site.
- To minimise the disruption to the local roads network, the traffic entering the main site entrance onto the access road will be given priority over that exiting the site.
- All parked vehicles waiting to enter/exit work sites or compounds will be required to park in a designated safe location, off the public road, and switch off their engines to avoid engine idling and minimise pollutants.
- All cyclists and pedestrians will be given the right of way at all times from traffic entering or leaving site onto the public road. To facilitate this, the entrance to the site will be controlled by onsite staff to ensure that pedestrians and cyclists can safely negotiate the site access bellmouth by monitoring and, if necessary, halting vehicular movements.
- Proper conduct in the use of passing places will be observed by all construction traffic. When passing pedestrians, cyclists and horse riders, drivers will slow down, pass cautiously and be prepared to stop.
- All tipper wagons transporting aggregates and loose, dry materials will be sheeted to minimize dust and prevent spillage on public roads.
- The primary access point for deliveries will be paved up to 15m from the bellmouth, and all on-site haul roads will be constructed from compacted aggregate to prevent mud being trailed onto the public road.
- In the event that mud and dust starts to accumulate on the local road network, a road sweeper will be utilised to clear any debris.
- Appropriate wheel washing facilities would be installed at access locations (contained within site) to allow removal of debris from construction vehicles prior to use of the local road network.
- Information regarding construction traffic activities and movements would be provided to the public. The means of communication could include online updates, letter drops, information boards and details of key contacts.
- Delivery records would be kept at the site Compound. Delivery records would allow vehicular activities to be recorded, monitored and managed throughout the construction of the Proposed
- Development to ensure compliance with the CTMP.

4.3 General Construction Traffic Signage

Advance warning signs will be displayed on the approaches to the site access to highlight the works/public traffic interface. All works traffic will use the routes described in **Section 3.1** for access to the site and site offices. All vehicles will be directed to the works location with Siemens BAM fingerboard signs, where site traffic and HGV movements will be coordinated further.

All signs, cones, lamps, road markings, barriers and temporary traffic control signals will always be kept clean and legible and will be inspected regularly.

Prior to any public signage plan being put into operation, guidance will be sought and agreed with the SSEN and Aberdeenshire Council.

Example of Signage on site:

Perimeter Fence Signage 600 x 600 mm

Example: Signage on route to site

Site Speed Limit & Crossing Point signage

Grass Verge and Passing Place signage

Project Site Entrance Signage

Example of Signage on public roads:

SLOW

CAUTION Construction Traffic

Carriageway Narrows Ahead

4.4 Additional Controls for Abnormal Indivisible Loads

Refer to Appendix B - Abnormal Indivisible Loads Assessment

The transportation of abnormal loads will be organised with a specialised haulage contractor who will ensure all the necessary consents and notifications are in place prior to the day of delivery. The haulage contractor will take responsibility for:

- Plotting the route from source to site
- Notification to relevant authorities, including Aberdeenshire Council, Transport Scotland, Police Scotland and the owners of any bridges or structures on the route (i.e. Network Rail or Transport Scotland)
- Providing transportation, escort vehicles and competent personnel to execute the delivery
- Organising a police escort
- Developing a convoy operation plan, detailing methodology, risks and controls for the transportation of the abnormal load

Police Scotland will be notified of the intention to move the abnormal load no less than 2 full working days prior to the day of delivery (or more in cases where an escort is required). Following Police Scotland guidance, abnormal loads are **not permitted** to travel during peak hours (Monday-Friday between 6.30am-9.30am and 3.30pm-6.30pm). There may also be additional restrictions on movements during the hours of darkness in some rural areas.

On the day of delivery, the load will be transported with escort vehicles to the front and rear. Escort vehicles will have full hazard markings as per Chapter 8 Guidance, as well as “Abnormal Load” lettered on the front and rear of each vehicle. Depending on the length and width of the load, there may also be additional markings on the load itself for anything projecting beyond the sides or ends of the vehicle.

Along the route there will also be locations requiring temporary closure of junctions, crossings and roundabouts, to stop the flow of traffic and allow safe passage of the convoy. In these instances, the police escort will advance in front of the

convoy to stop the traffic before the convoy enters the pertinent part of the route. The police escort will than radio the convoy to confirm the temporary closure is in place and the route is clear, holding the traffic until the load has safely passed. The below diagram shows an indicative arrangement for how these temporary junction closures will be achieved.

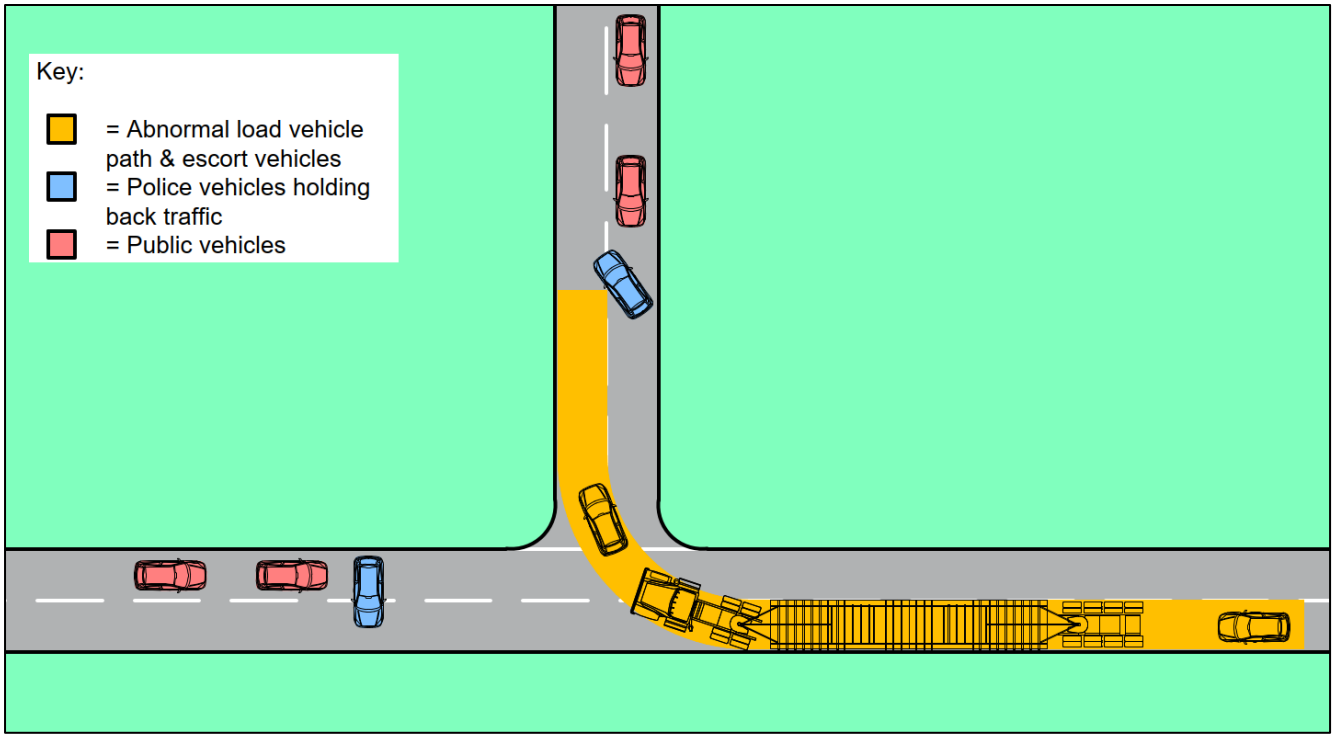

Figure 8. Temporary Junction Closures

4.5 Abnormal Load Convoy Composition & Signage

Refer to Appendix B - Abnormal Indivisible Loads Assessment

Due to the narrow lane width on the local roads which lead to site, it is expected that all abnormal loads coming to site will require a police escort. One police vehicle will travel in advance of the convoy to make upcoming road users aware of the approaching hazard and prepare for any temporary junction closures. The second police vehicle will accompany the convoy at all times.

In addition to the police escorts, there will be two civilian escort vehicles – one in front of the abnormal load and one at the rear. All drivers involved in the operation will be in constant radio contact, to ensure there is advanced warning for any approaching hazards and to coordinate movements during junction closures.

4.6 AIL Route Conflict Areas

Refer to Appendix B - Abnormal Indivisible Loads Assessment

4.7 Public Communication

The public will be made aware of the intended route for construction traffic during public consultation events which will provide a forum to address any concerns. The movement of abnormal load convoys will also be communicated through

letter drops to local residents and by providing information to local media outlets and radio stations to communicate the potential impacts on the road network during these operations.

SBAM and SSE will also keep in regular contact with Aberdeenshire Council to keep them updated on upcoming convoy movements to ensure there are no conflicts or issues on the proposed delivery dates.

5 C29S PRI Strategy Proposal

5.1 Introduction

It is Scottish & Southern Energy's (SSE) preferred PRI strategy to improve the standard of the existing C29S to permit the free flow of HGV vehicular traffic between the proposed site access point and the C29S / B9170 Road junction.

5.2 Existing Conditions

Measurements of the C29S were taken at 100m intervals, which found that the existing carriageway width varies between 4.5m-5.2m wide with a 0.5m to 2.0m verge on either side of the road.

Based on this current arrangement it would not be conducive to having HGV's being able to pass each other unconstrained in free flow. The existing typical conditions of the C29S are illustrated below.

Figure 9. C29S

5.3 Proposed Upgrades

To make the road conducive to the unconstrained free-flow of two-way HGV movements, the road will need to be upgraded to a 6.5m carriageway width with 2m wide verges on either side (as stipulated by ACRO).

An indicative general arrangement and SPA (including for the Transformer AILV) of this road upgrade has been undertaken on an Ordnance Survey mapping base. It is illustrated in Appendix A.

The indicative general arrangement has taken full cognisance of the Aberdeenshire Council Transportation and Infrastructure Standards for Roads Construction and Adoption guidelines will be made in terms of design, as well as where applicable the Design Manual for Roads & Bridges (DMRB).

A more detailed design is currently emerging and is subject to topographical survey (topo) being undertaken.

It is SSE's preferred strategy to submit these designs as a separate planning application to the overall 'Greens Sub-station'.

Once planning is achieved the detailed design of the road has been agreed by ACRO to be dealt with via a Roads (Scotland) Act 1984 Part VIII, Section 56 application as opposed to a Roads (Scotland) Act 1984 Part VIII, Section 21 Roads Construction Consent (RCC) application.

6 Site Traffic Management

6.1 Parking

To minimise inconvenience to the local residents, parking requirements will be assessed prior to works commencing to ensure adequate site car parking is available. A designated area will be provided at the main site compound to provide parking for site personnel, subcontractors, SSEN personnel and visitors. No parking is permitted on the access road to site.

6.2 Traffic Rules for Vehicles on Site

The following traffic management requirements will be implemented to ensure vehicle movements on site are controlled:

- Only fit for purpose vehicles are permitted to access the site
- A 10mph speed limit will be imposed on all vehicles entering the main site compound and substation with 5mph restrictions in place where there are higher levels of pedestrian activity
- As far as reasonably practicable, a one-way system will be implemented within the compound areas
- All traffic must turn inside compounds, either via use of a banks-person or in a forward gear, before exiting and must exit the site in a forward gear. There will be no reversing onto local or strategic roads permitted
- Use of orange beacons are mandatory on site; excluding office compound and access road
- All heavy plant and delivery vehicles must be fitted with a reversing alarm
- Heavy plant has priority on all areas of the site; accordingly, all drivers must give way to heavy plant and/or vehicles
- Drivers/pedestrians should not approach plant working until they have been signalled or acknowledged by the plant operator.

6.3 HGV & Abnormal Load Movements

Any articulated vehicle deliveries or abnormal loads shall be met at the site entrance. All other vehicle movements that are within the compound at this time will temporarily be suspended, until delivery vehicle is clear of security check point.

Deliveries to site will be planned to ensure that access is not restricted by waiting delivery vehicles and ensures that this Traffic Management Plan is adhered to. Siemens BAM will ensure all necessary authority permissions are obtained prior to deliveries being undertaken.

A site delivery schedule shall be issued at the end of each week, detailing the traffic movements for the week ahead. This will ensure that the flow of traffic is not significantly disrupted during such times. Convoy of delivery vehicles will be avoided.

All visitors and deliveries will be informed of any changes to site access route by the security gateman, with all site personnel informed during the daily briefing and notice board updated.

In the event a delivery will not be able to reach site within normal working hours they will need to park off site until the following morning. Delivery companies will be notified of overnight parking in areas close to the site.

6.4 Plant and Pedestrian Segregation

A pedestrian footpath will be established around site office and welfare units, segregating vehicles and pedestrians. Where pedestrian and vehicle traffic routes cross, a pedestrian walkthrough barrier, clearly marking the egress and access of appropriate crossing points.

6.5 Route to Hospital

A map showing the route to the nearest Accident and Emergency hospital will be posted up in the welfare units and briefed out at the site daily briefing to the workforce.

For all incidents requiring both accident and emergency hospital treatment and non-accident and emergency treatment, the nearest Hospital is:

Fraserburgh Hospital
Lochpots Road
Fraserburgh
AB43 9NH

The Hospital is located approximately 20 miles from site, with an expected journey time of 30-40 minutes.

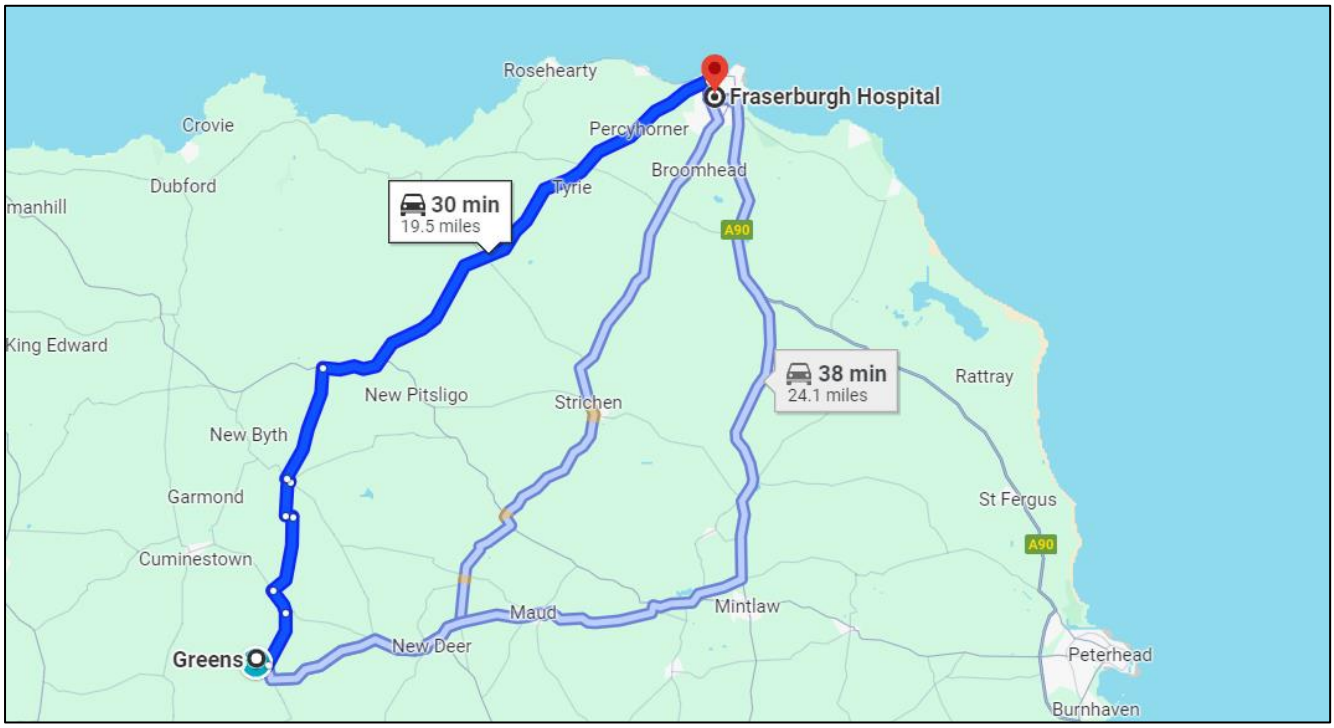

Figure 10. Route to Hospital

7 Monitoring and Compliance

7.1 Monitoring

In order to ensure that the objectives and mitigation measures which are set out in the CTMP are met and managed, the Project Manager would ensure that a CTMP management group are in place prior to and during the construction of the Proposed Development.

A CTMP management group would have the following responsibilities:

- Communicate and monitor the CTMP and its mitigation measures;
- Ensure records of HGV movements are maintained and reported;
- Install CCTV cameras or traffic counters at the entrance to the access to ensure compliance with HGV arrival and departure procedures;
- Be the first point of contact for the public, stakeholders and the Project contractors;
- Hold regular update meetings as required with the local roads authority and relevant stakeholders;
- Record near misses, incidents, hazards and resolve issues as informed by the contractors and the public; and
- Monitor, review and improve, where necessary the CTMP and associated mitigation measures.

The Project Manager would continue liaising with stakeholders throughout the construction of the Proposed Development. Regular contact would help to inform the levels of CTMP monitoring, review and improvement as necessary.

7.2 Compliance

The CTMP management group and the appointed Principal Contractor are to ensure that the CTMP is complied with by all staff, sub-contractors and deliveries to the site.

Compliance with safety rules and the provisions of this CTMP are to be monitored and positive action taken if they are breached. Results of the monitoring shall be documented in the monthly/quarterly/six-monthly progress reports prepared for progress meetings. Sub-contractors' drivers are to follow the provisions of this Plan.

Ensuring all personnel (workers) receive site inductions covering the use of vehicles, traffic rules on site, traffic routes and speed restrictions. A record of inductees and attendees will be held on site.

Where practicable, vehicles should be fitted with trackers to demonstrate compliance with the CTMP and access and egress of HGV movements at the access junction is monitored using CCTV, where appropriate, or traffic counters. Where construction vehicles fail to adhere to the CTMP, there will be a two-strike / red card policy. After two strikes, the contractor will be removed from site.

It is the responsibility of drivers to ensure loose soil is removed from wheels prior to exit onto public roads. Access roads and public roads will be kept clean of any excess mud or dirt (using a mechanical road sweeper or similar approved method). Roads should be inspected on a daily basis for compliance.

8 Summary

Inevitably with the construction of such a large engineering project in a remote location, there will be some increased pressure on the local network which is unavoidable. However, with the proposed measures of public road enhancements, inspection & maintenance of local roads, designated delivery routes and warning signage detailed in this plan, the impacts of the construction traffic on the roads leading to site will be kept to a minimum and ensure they can still be safely used by local residents and businesses.

In consultation with ACRO these routes have been identified as the preferred solutions, aiming to cause as little disruption to the surrounding community as possible. Existing traffic levels on the local road network are not considered to be significant, and the addition of up to 630 extra vehicle movements per day (250 HGV) is not expected to cause detriment or delay to existing users, especially if it is spread out over a 12-hour working day.

The preferred road improvement scheme for the C29S has been discussed with ACRO. This will further mitigate any issues caused by HGV traffic as a result of the project.

Conclusion of AIL contained within Appendix B – Abnormal Indivisible Loads Assessment.

Appendix A - Preferred Construction Traffic Routes to Site & Mitigation

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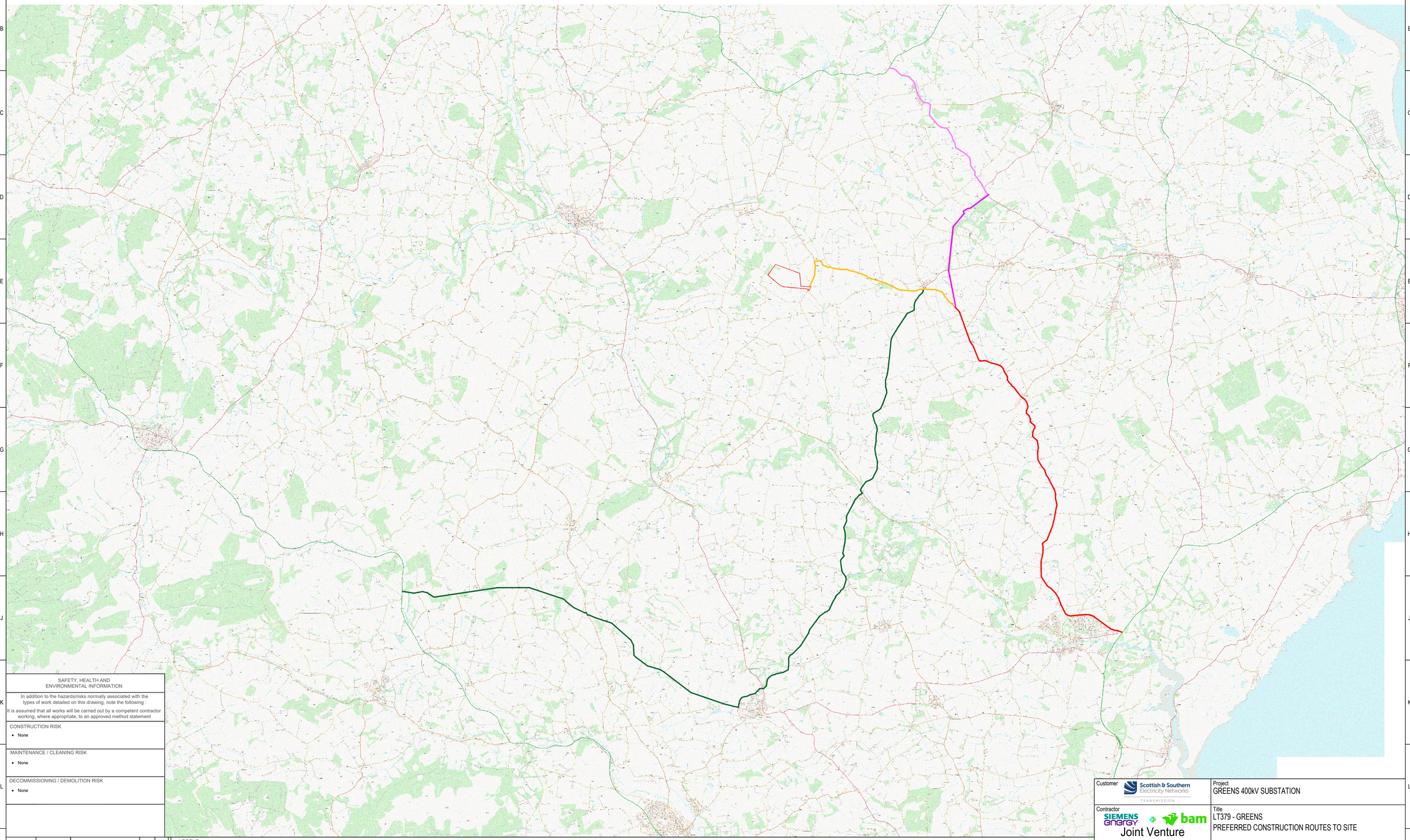

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following : It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement
CONSTRUCTION RISK • None
MAINTENANCE / CLEANING RISK • None
DECOMMISSIONING / DEMOLITION RISK • None

LEGEND

- PRIMARY ROUTE
- COMBINED ROUTE
- SECONDARY ROUTE
- TERTIARY ROUTE

DRAWING STATUS: ISSUED			
	REVISION:	P01	
	DRAWN:	NB	11.06.2024
	CHECKED:	DS	11.06.24
	APPROVED:	DS	11.06.24

PROJECT REF: GRNS4-LT379
FIRST ISSUE

Customer: Scottish & Southern Electricity Networks TRANSMISSION

Contractor: SIEMENS energy + bam
Joint Venture
Substation Delivery Framework

Subcon. Drawing No.: FAIRHURST
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0909

Project: GREENS 400kV SUBSTATION

Title: LT379 - GREENS
PREFERRED CONSTRUCTION ROUTES TO SITE

Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0909

Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0909

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ACCESS PLAN
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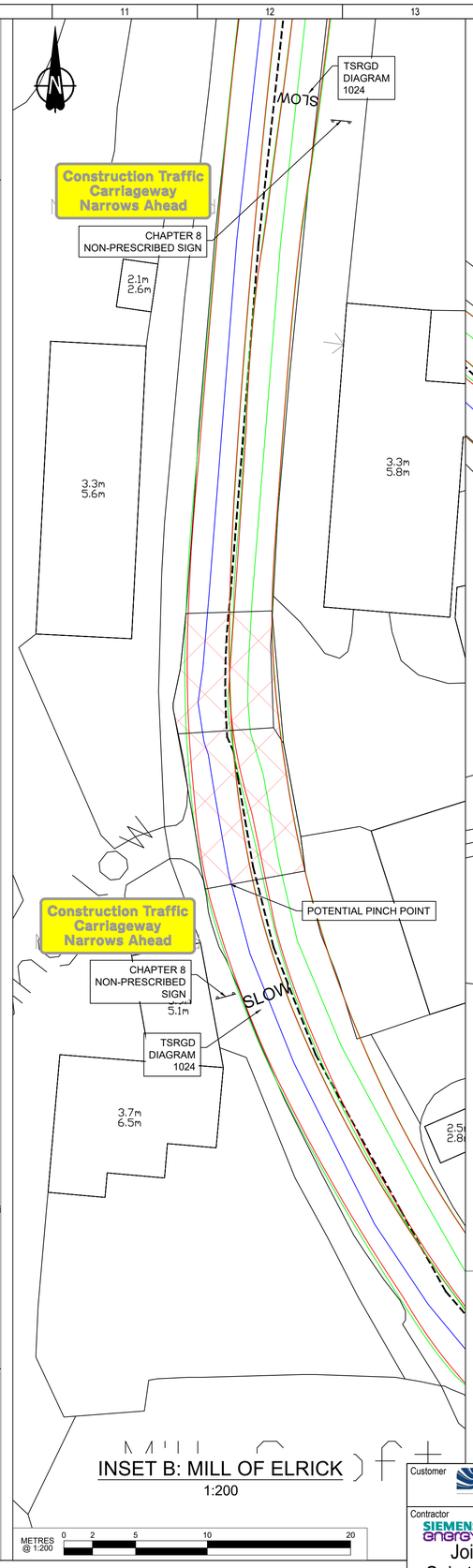

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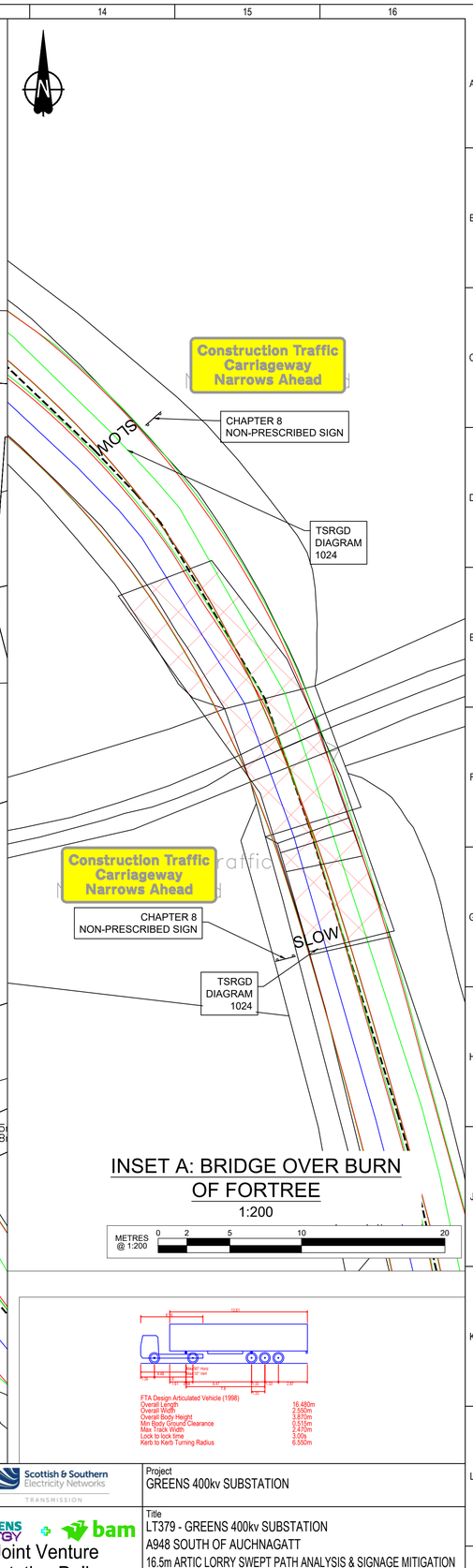

INSET A: BRIDGE OVER BURN OF FORTREE
1:200

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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	6.500m

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

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	DRAWN:	AC	30/05/2024
	CHECKED:	NB	30/05/2024
	APPROVED:	CG	30/05/2024

PROJECT REF: GRNS4-LT379 — FIRST ISSUE

Customer	Scottish & Southern Electricity Networks TRANSMISSION
Project	GREENS 400kv SUBSTATION
Contractor	SIEMENS energy + bam Joint Venture Substation Delivery Framework
Title	LT379 - GREENS 400kv SUBSTATION A948 SOUTH OF AUCHNAGATT 16.5m ARTIC LORRY SWEPT PATH ANALYSIS & SIGNAGE MITIGATION
Subcon. Drawing No.	FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0910
Contractor Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0910
Customer Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0910

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AC	AC	NB	CG	30/05/2024	As Shown	A1	1 of 1	P01

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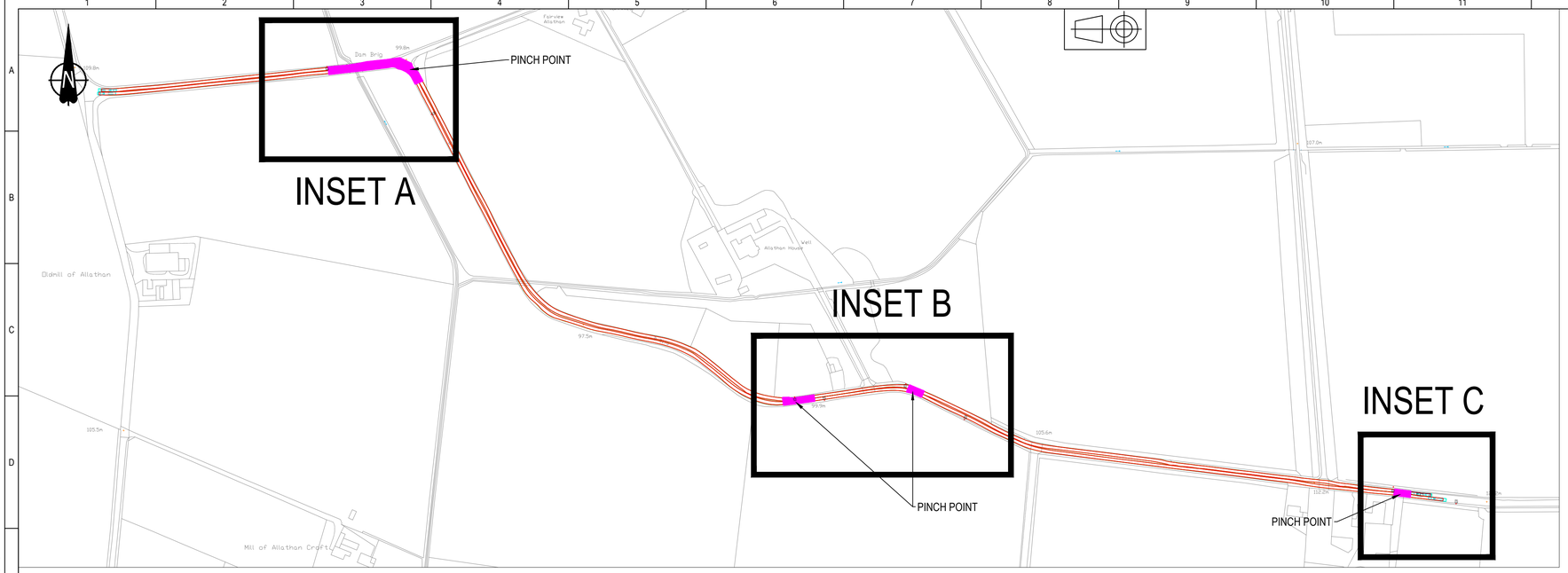

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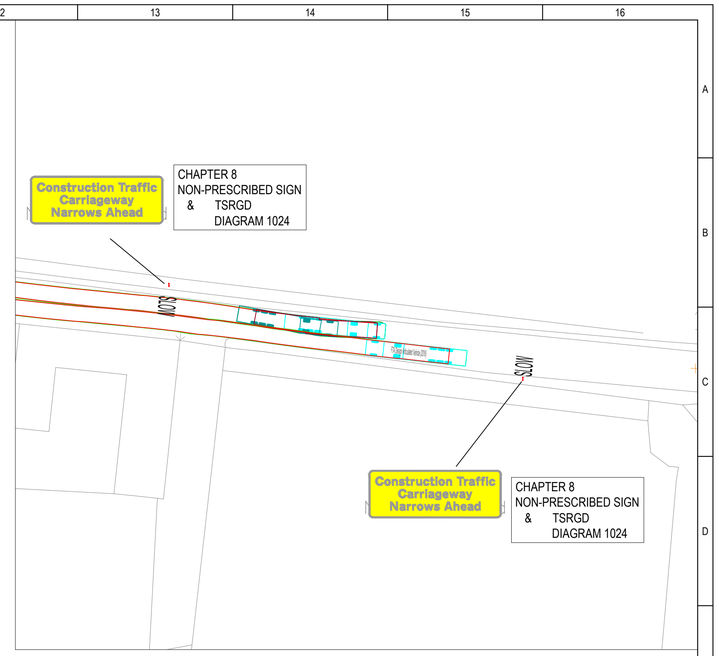

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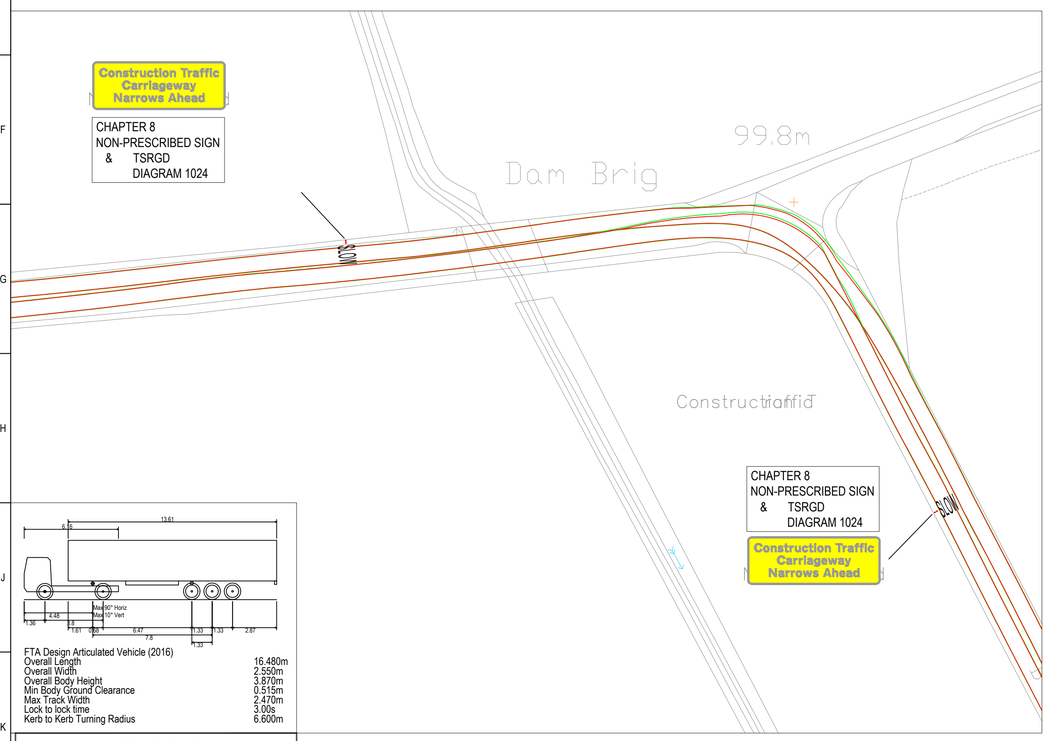
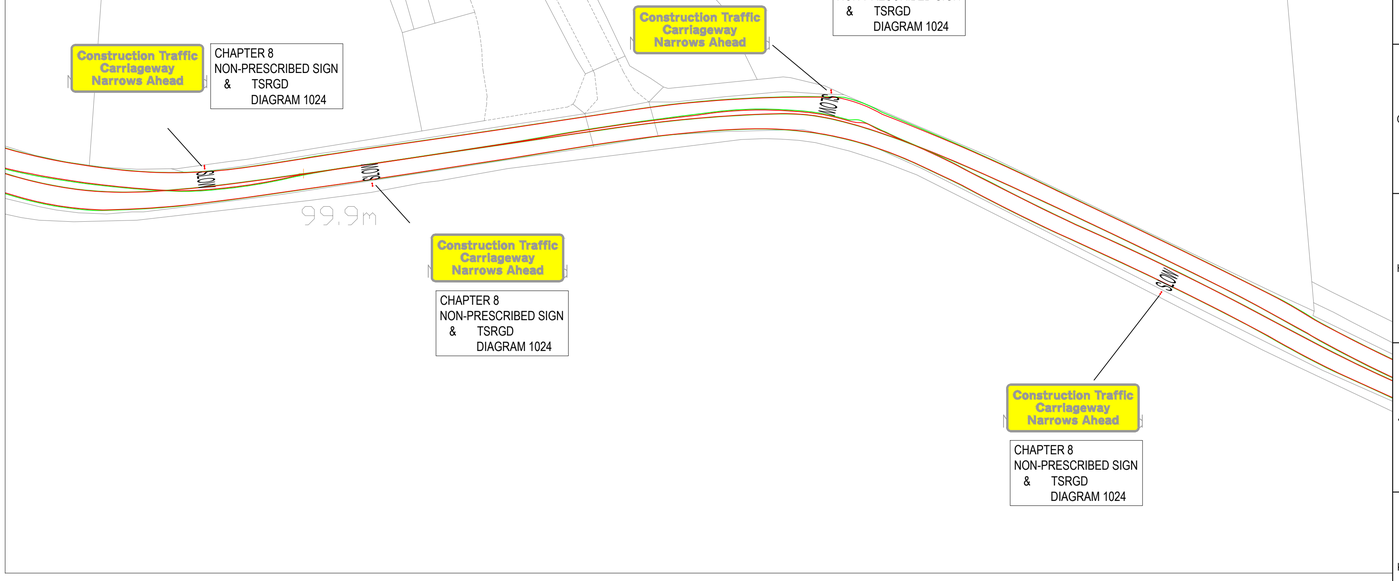


FTA Design Articulated Vehicle (2016)

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	6.600m

INSET A
1:500



INSET B
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CONSTRUCTION RISK • None
MAINTENANCE / CLEANING RISK • None
DECOMMISSIONING / DEMOLITION RISK • None

METRES @ 1:500: 0 4 10 20 50
METRES @ 1:2500: 0 20 50 100 250

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DRAWING STATUS: ISSUED

REVISION:	P01	
DRAWN:	NB	11.06.24
CHECKED:	DS	11.06.24
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PROJECT REF: GRNS4-LT379
RISO ISSUE

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0911

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS 400kv SUBSTATION
PRI ROUTES TO SITE ALLATHAN PINCHPOINTS
SWEPT PATH ANALYSIS
16.5m RIGID ARTIC LORRY
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0911
Customer Drawing No.: GRNS4-LT379--SEBAM-ZZ-ZZ-D-H-0911

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
NB	NB	DS	DS	11/06/24	1:1000	A1	1 of 1	P01

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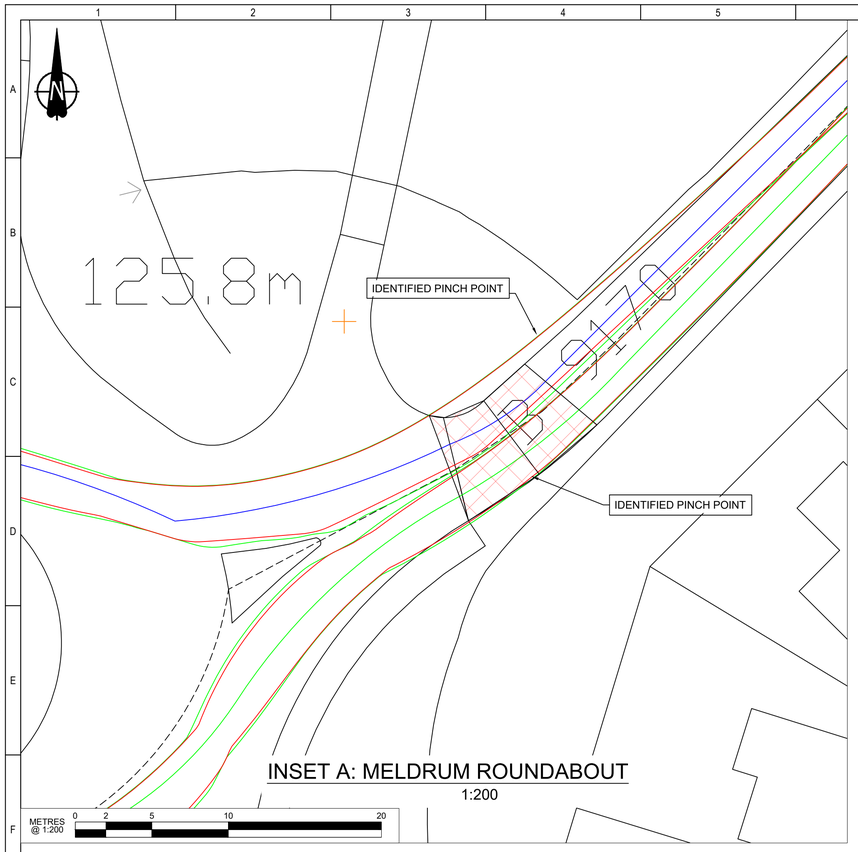

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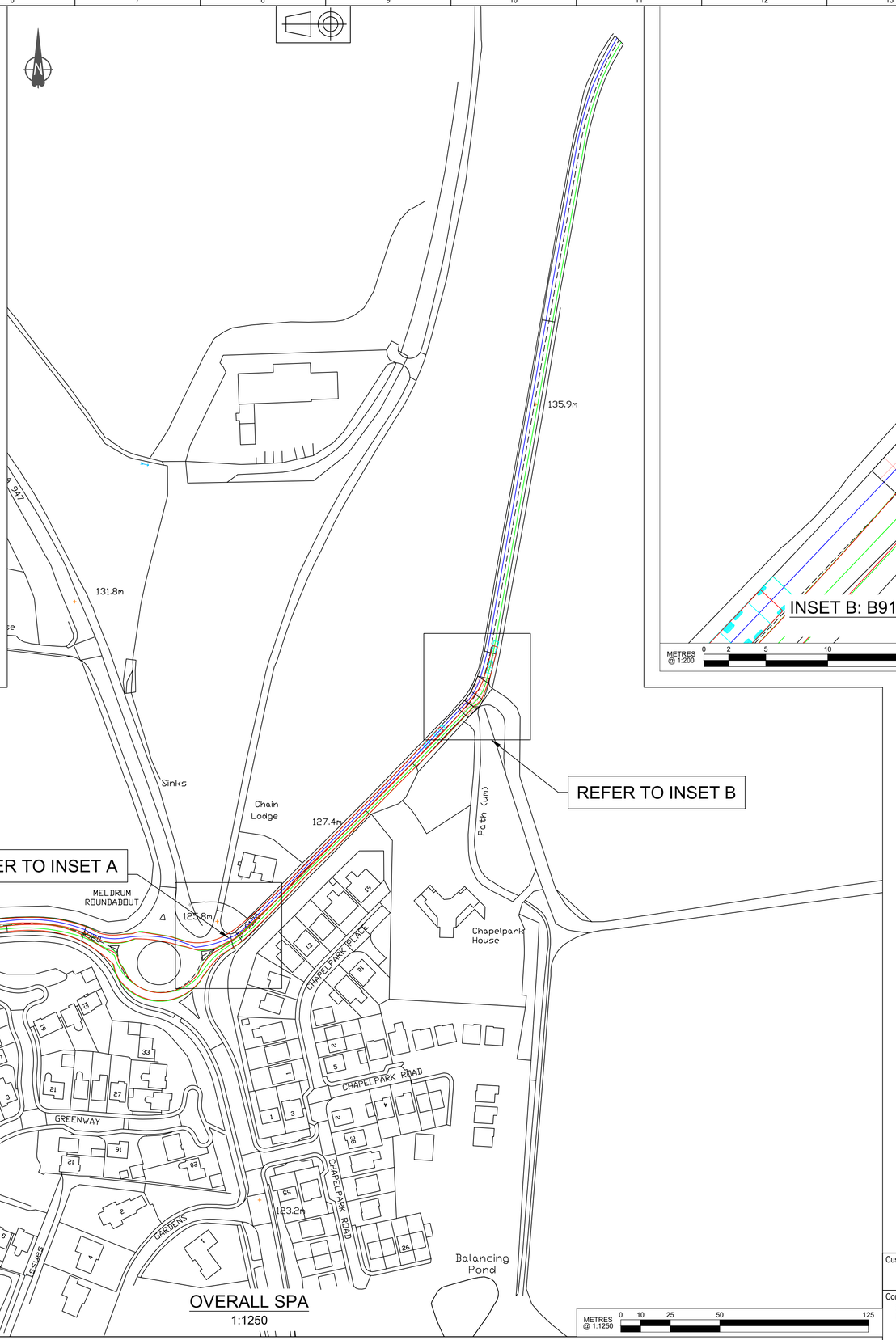

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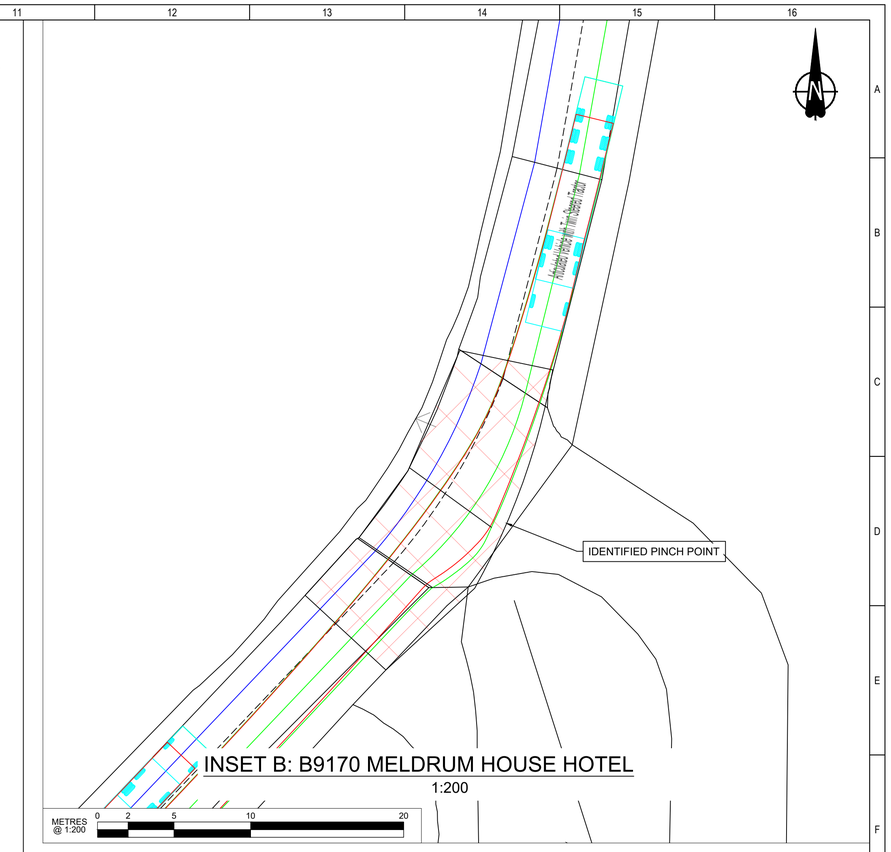

INSET B: B9170 MELDRUM HOUSE HOTEL
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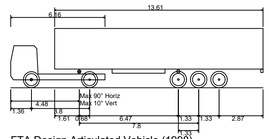
REFER TO INSET B



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MAINTENANCE / CLEANING RISK • None
DECOMMISSIONING / DEMOLITION RISK • None

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DRAWING STATUS: ISSUED			PROJECT REF: GRNS4-LT379
REVISION:	P01		
DRAWN:	NB	11.06.24	
CHECKED:	DS	11.06.24	
APPROVED:	DS	11.06.24	

FOR MITIGATION REFER TO DRAWING
GRNS-LT379=SEBAM-ZZ-ZZ-D-H-0913

Customer: Scottish & Southern Electricity Networks TRANSMISSION

Contractor: SIEMENS energy + bam
Joint Venture
Substation Delivery Framework

Subcon. Drawing No. FAIRHURST
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0912

Project: GREENS 400kv SUBSTATION

Title: LT379 - GREENS 400kv SUBSTATION
PRI ROUTES TO SITE OLDMELDRUM PINCHPOINTS
SWEPT PATH ANALYSIS 16.5m ARTIC LORRY

Contractor Drawing No.
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0912

Customer Drawing No.
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0912

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
NB	FK	NB	NB	10/06/2024	As Shown	A1	1 of 1	P01

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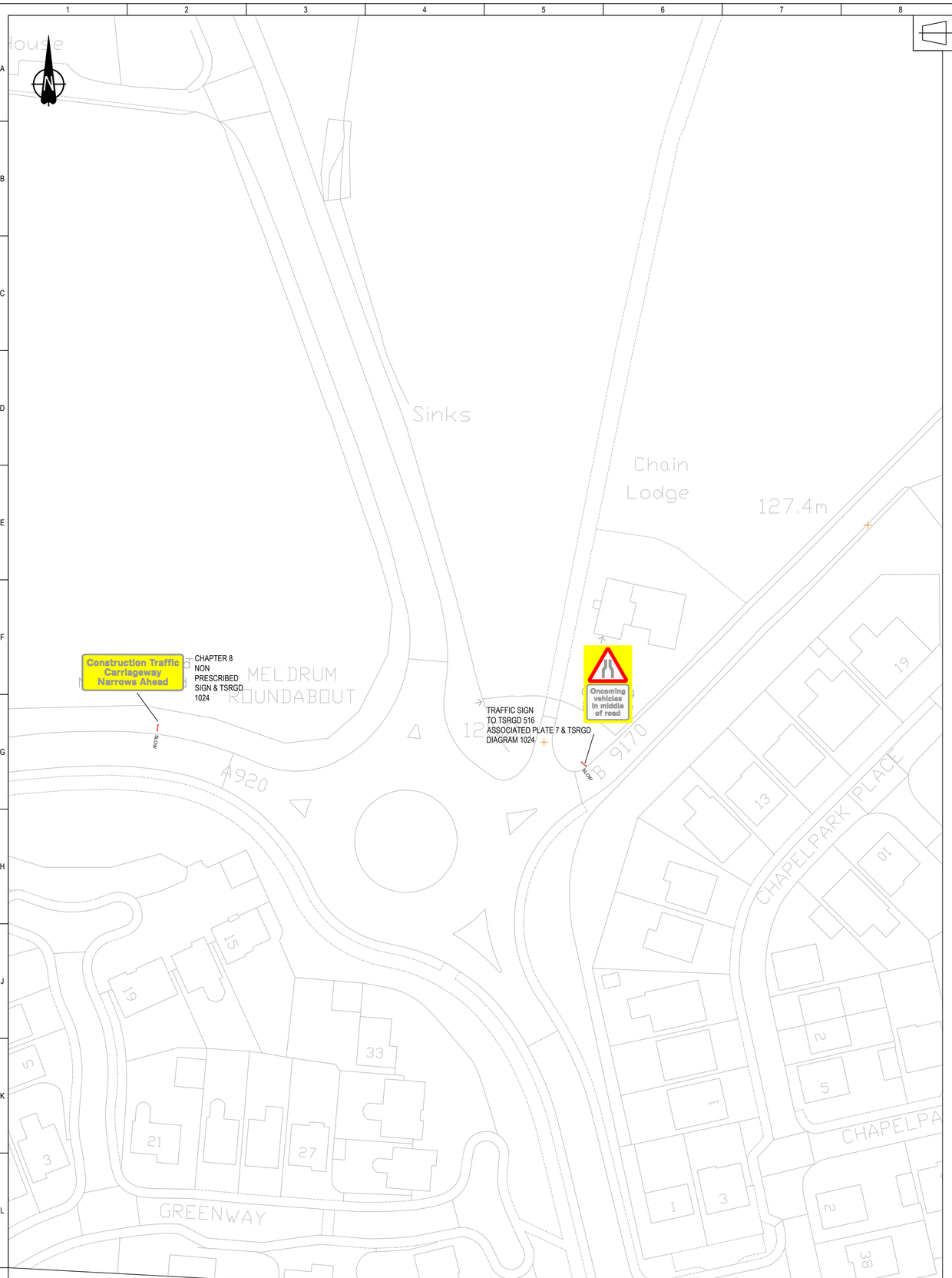

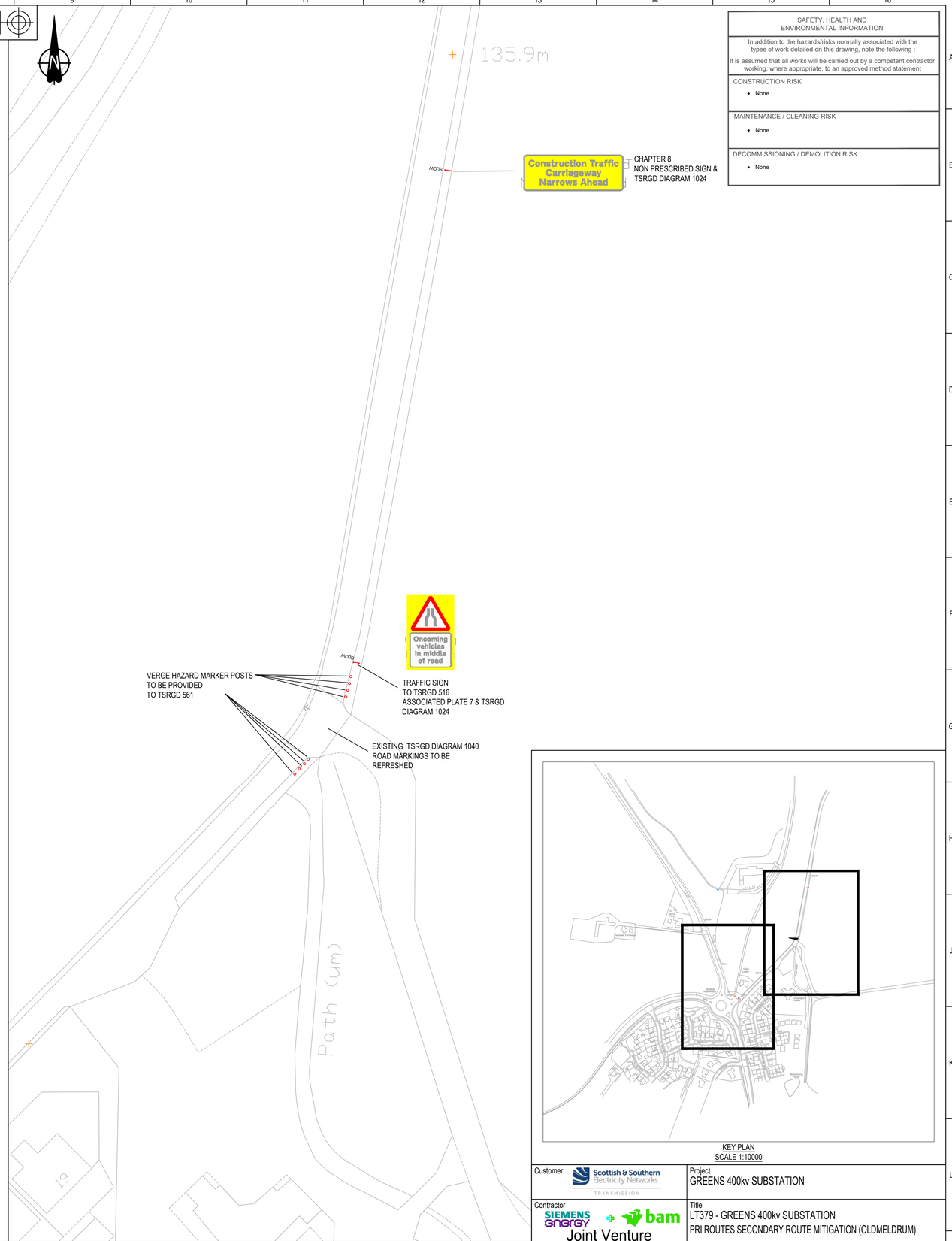

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following : It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement
CONSTRUCTION RISK • None
MAINTENANCE / CLEANING RISK • None
DECOMMISSIONING / DEMOLITION RISK • None

KEY PLAN
SCALE 1:10000

METRES @ 1:500 0 4 1 20 50

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Customer	Scottish & Southern Electricity Networks TRANSMISSION
Contractor	SIEMENS energy + bam Joint Venture Substation Delivery Framework
Subcon. Drawing No.	FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0913
Project	GREENS 400kv SUBSTATION
Title	LT379 - GREENS 400kv SUBSTATION PRI ROUTES SECONDARY ROUTE MITIGATION (OLDMELDRUM)
Contractor Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0913
Customer Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0913

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
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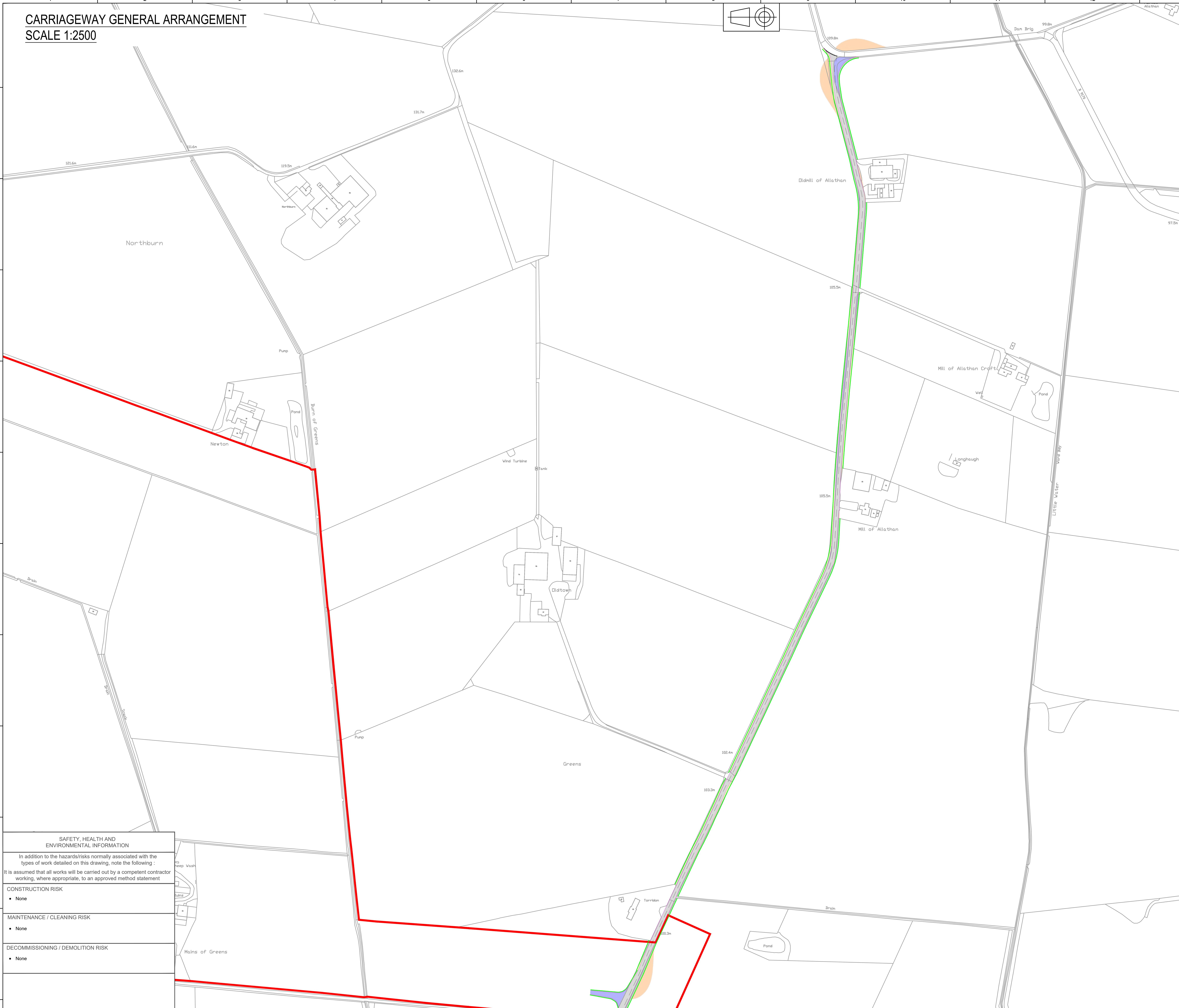
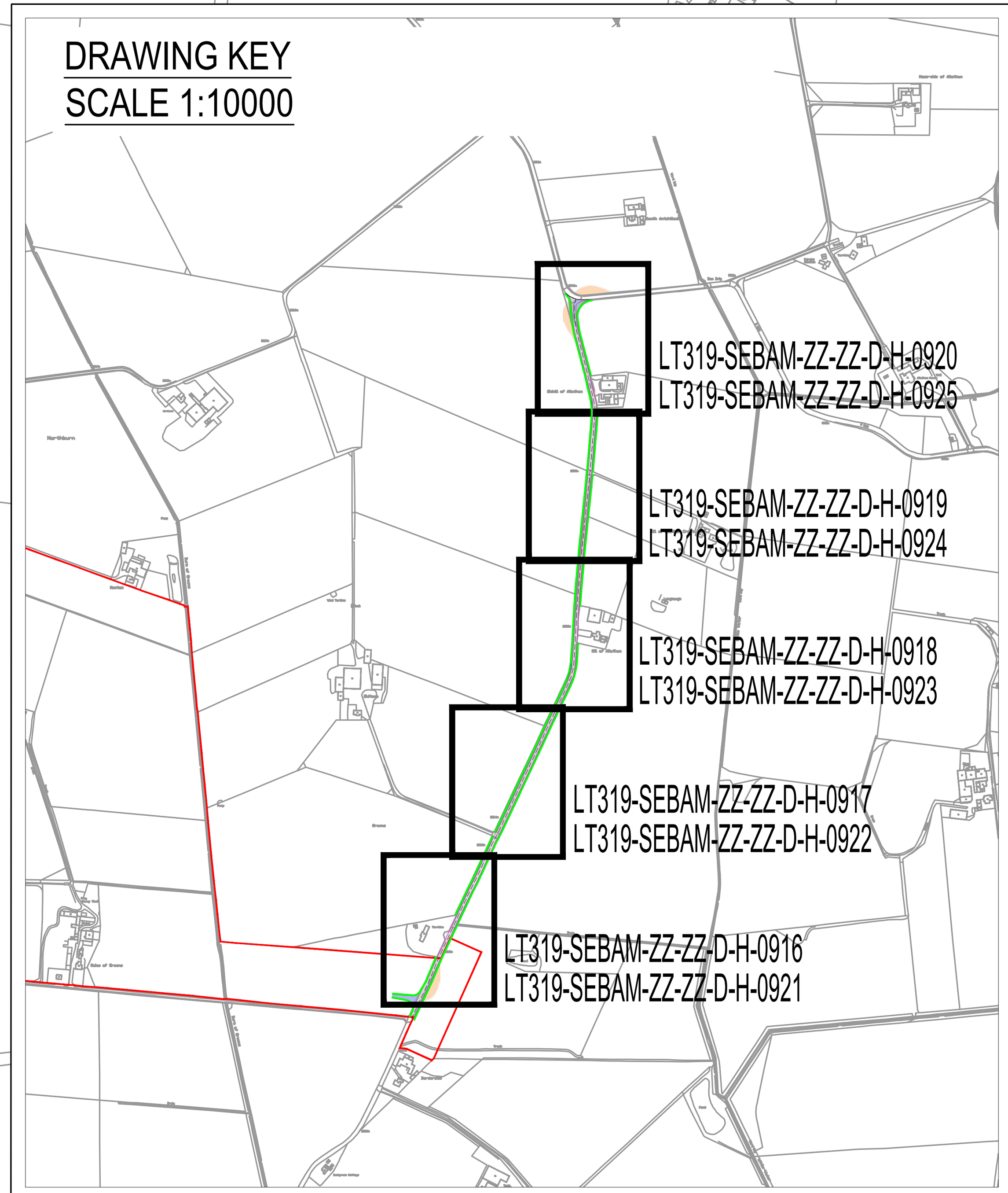
PROJECT REF: GRNS4-LT379		
REV ISSUE		

CARRIAGEWAY GENERAL ARRANGEMENT
SCALE 1:2500



DRAWING KEY
SCALE 1:10000



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

LEGEND

- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL
- TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:

PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:2500: 0 20 50 100 250

DRAWING STATUS: ISSUED			PROJECT REF. GRNS4-LT379	FIRST ISSUE
	REVISION:	P01		
	DRAWN:	FK 19.06.24		
	CHECKED:	NB 19.06.24		
	APPROVED:	CG 20.06.24		

Customer: Scottish & Southern Electricity Networks TRANSMISSION

Project: GREENS 400kV SUBSTATION

Contractor: SIEMENS energy + bam Joint Venture Substation Delivery Framework

Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 1 OF 11)

Subcon. Drawing No. FAIRHURST
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0915

Contractor Drawing No. GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0915

Customer Drawing No. GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0915

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
NB	FK	CG	CG	19/06/24	1:2500	A1	1 of 11	P01

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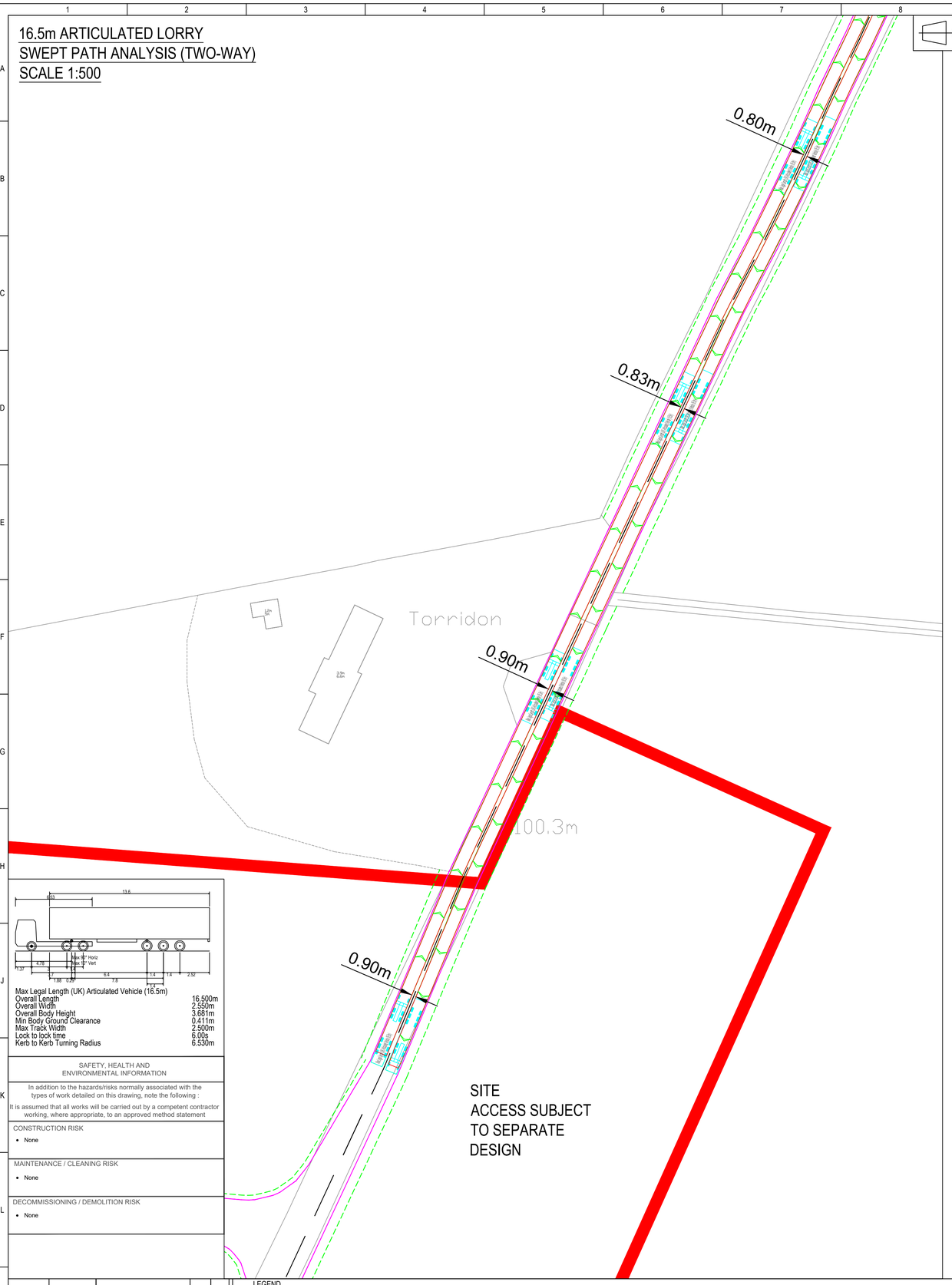
16.5m ARTICULATED LORRY SWEPT PATH ANALYSIS (TWO-WAY)
SCALE 1:500



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

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

CARRIAGEWAY GENERAL ARRANGEMENT LAYOUT
SCALE 1:500

LEGEND
- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:
PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:500 — 0 5 10 20 50

DRAWING STATUS: ISSUED	REVISION:	P01
	DRAWN: FK	19.06.24
	CHECKED: NB	19.06.24
	APPROVED: CG	19.06.24
PROJECT REF: GRNS4-LT379	FIRST ISSUE	

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0916

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS C29S UPGRADE WORKS (SHEET 2 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0916
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0916

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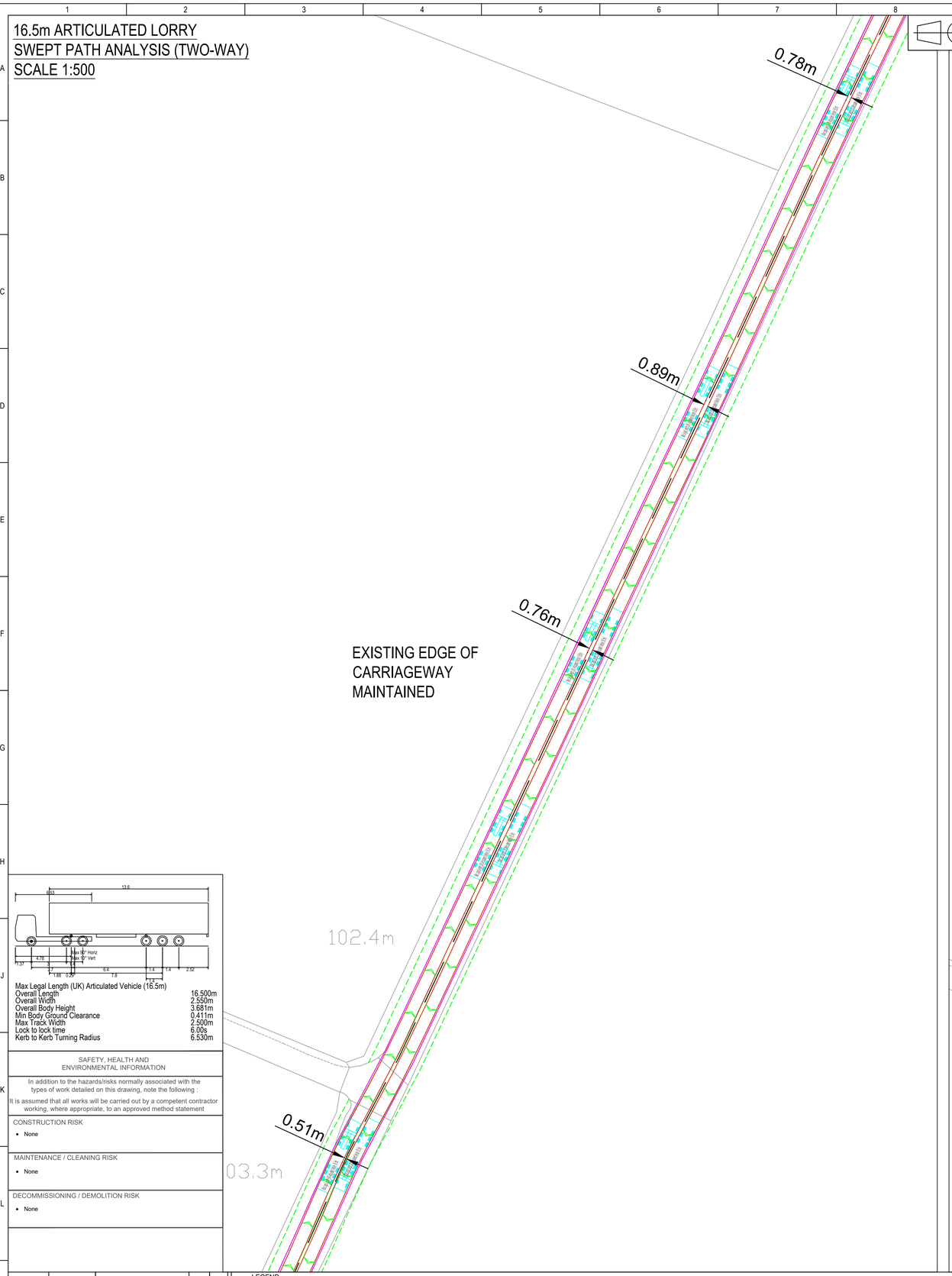
16.5m ARTICULATED LORRY SWEPT PATH ANALYSIS (TWO-WAY)
SCALE 1:500



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

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

CARRIAGEWAY GENERAL ARRANGEMENT LAYOUT
SCALE 1:500

DRAWING STATUS: ISSUED				PROJECT REF: GRNS4-LT379	FIRST ISSUE
	REVISION:	P01			
	DRAWN:	FK	19/06/24		
	CHECKED:	NB	19/06/24		
	APPROVED:	CG	19/06/24		

LEGEND
- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL
- TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:
PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:500 — 0 5 10 20 50

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0917

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 3 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0917
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0917

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
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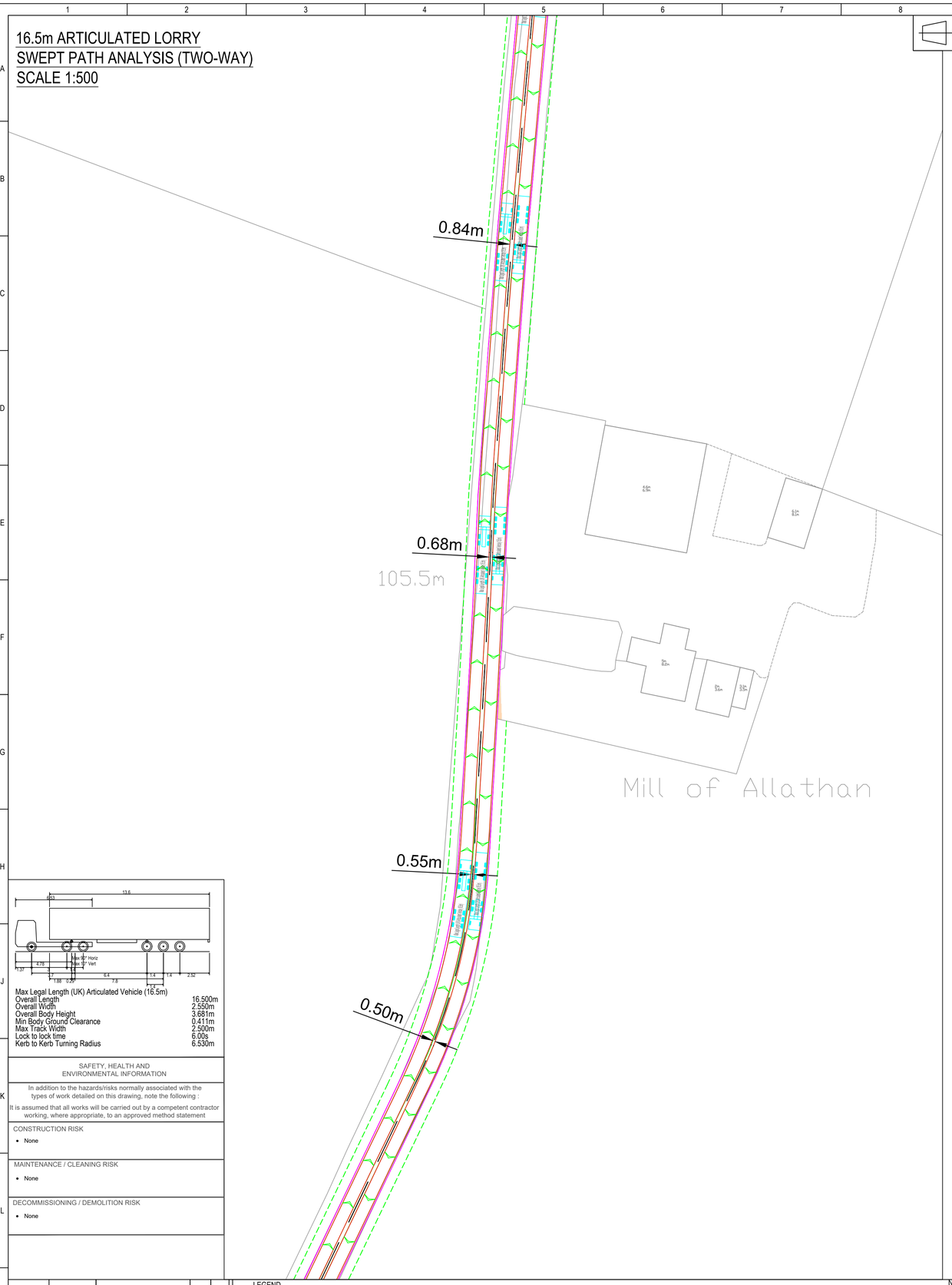
16.5m ARTICULATED LORRY SWEPT PATH ANALYSIS (TWO-WAY)
SCALE 1:500



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

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

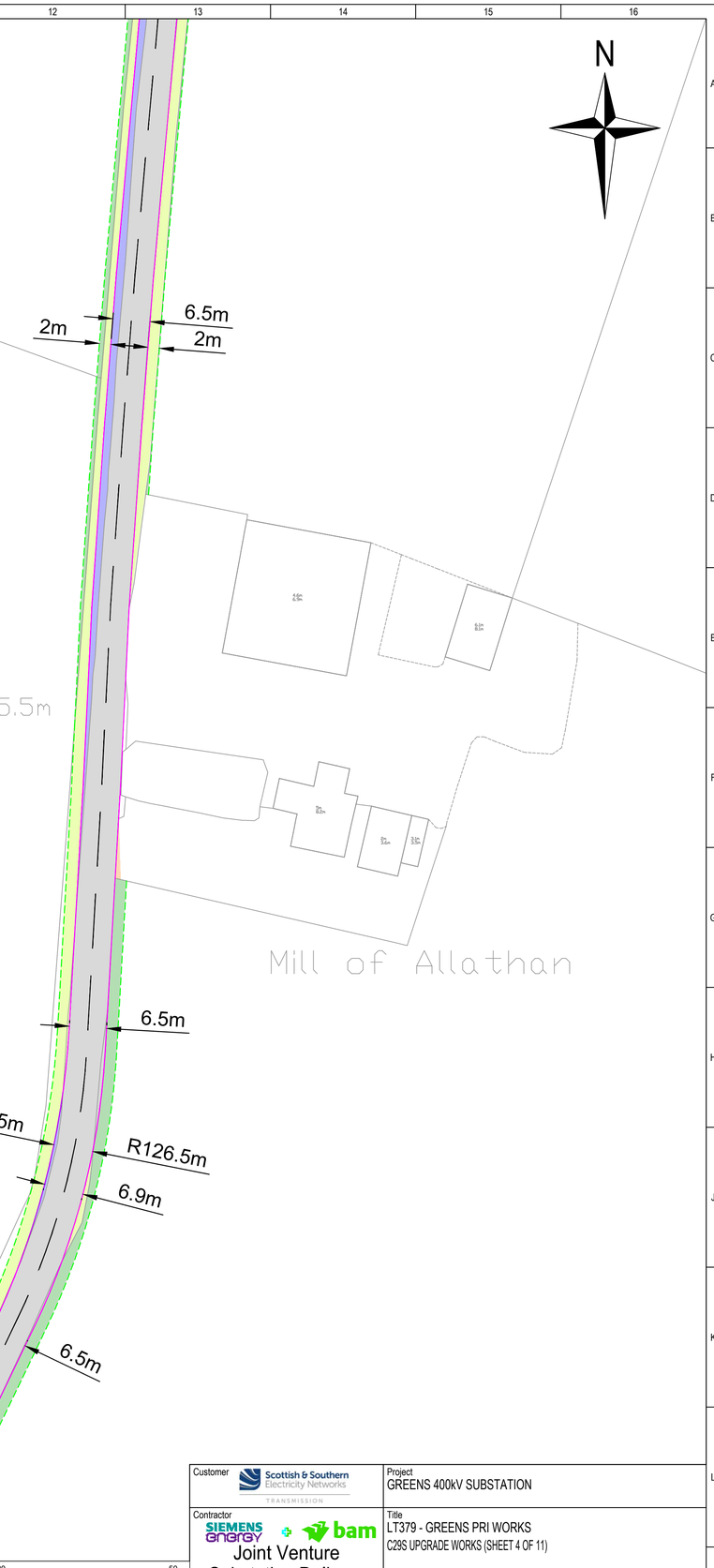
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

CARRIAGEWAY GENERAL ARRANGEMENT LAYOUT
SCALE 1:500



METRES @ 1:500: 0 5 10 20 50

LEGEND
- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL
- TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:
PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

DRAWING STATUS: ISSUED

REVISION:	P01	
DRAWN:	FK	19/06/24
CHECKED:	NB	19/06/24
APPROVED:	CG	19/06/24

PROJECT REF: GRNS4-LT379
FIRST ISSUE

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0918

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 4 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0918
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0918

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16.5m ARTICULATED LORRY SWEPT PATH ANALYSIS (TWO-WAY)
SCALE 1:500

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

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

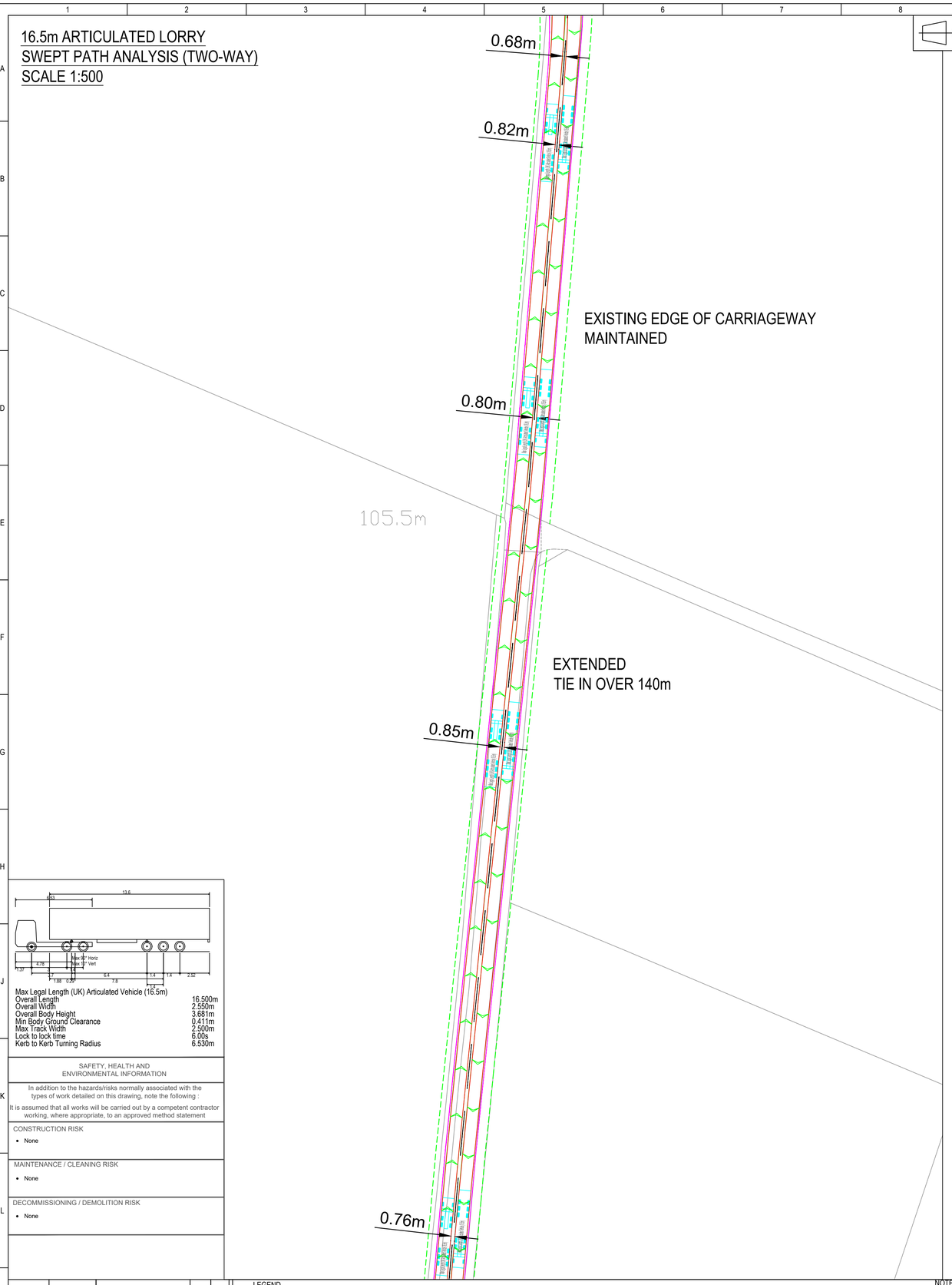
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

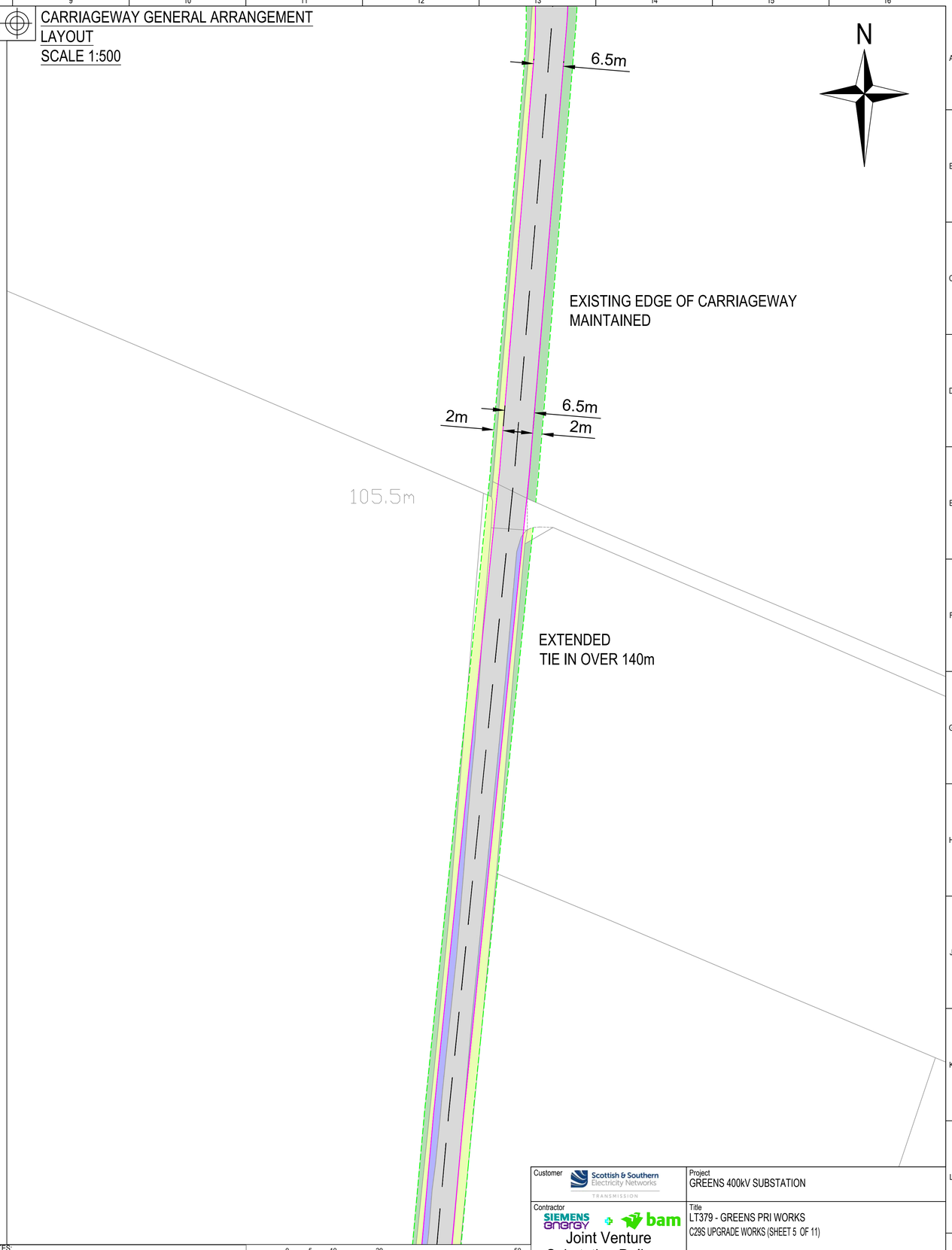
CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None



CARRIAGEWAY GENERAL ARRANGEMENT LAYOUT
SCALE 1:500



DRAWING STATUS: ISSUED			
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CHECKED:	NB	19/06/24	
APPROVED:	CG	19/06/24	

PROJECT REF: GRNS4-LT379
FIRST ISSUE

LEGEND
- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL
- TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:
PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:500 — 0 5 10 20 50

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST — GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0919

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 5 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0919
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0919

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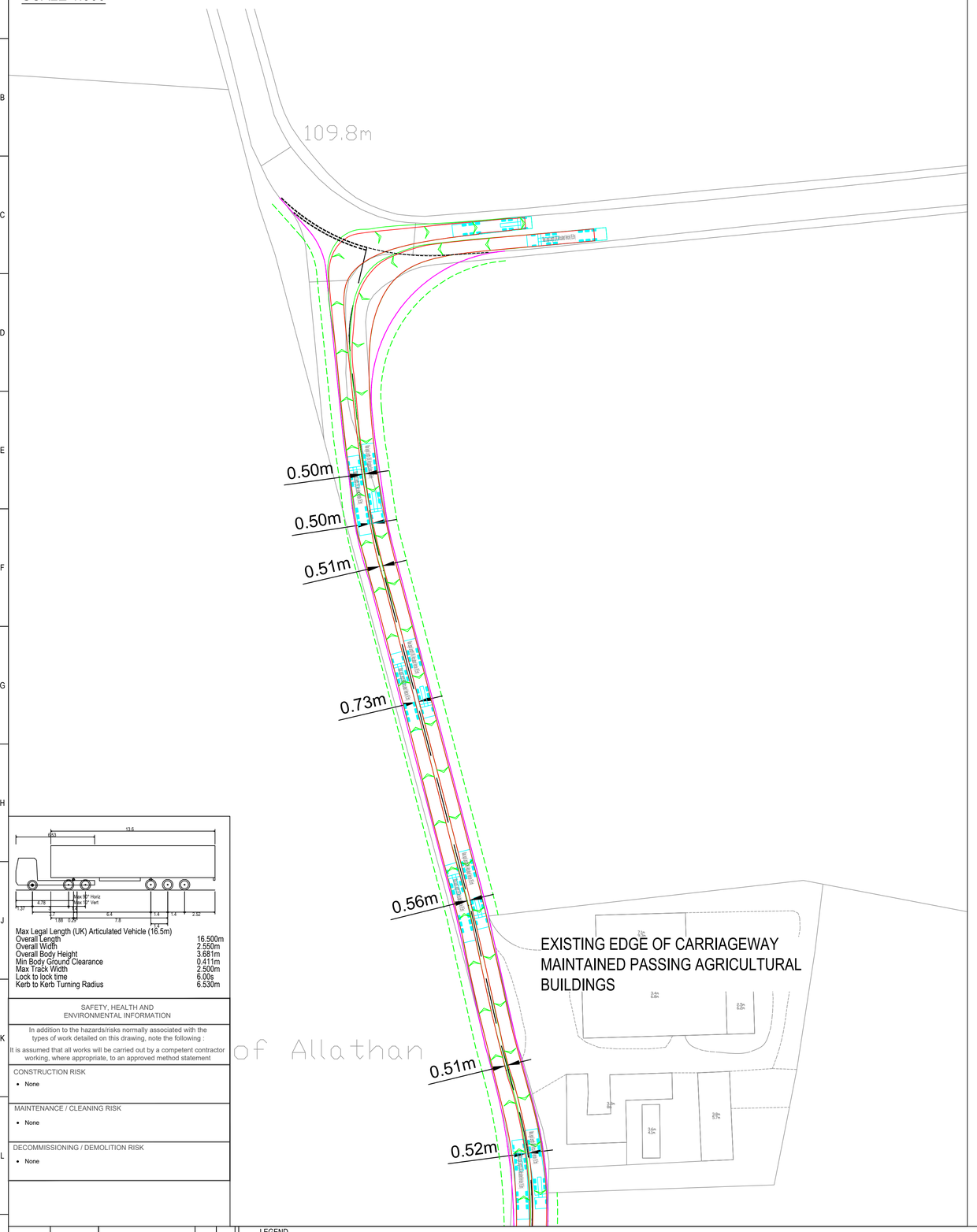
16.5m ARTICULATED LORRY SWEPT PATH ANALYSIS (TWO-WAY)
SCALE 1:500



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

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following :

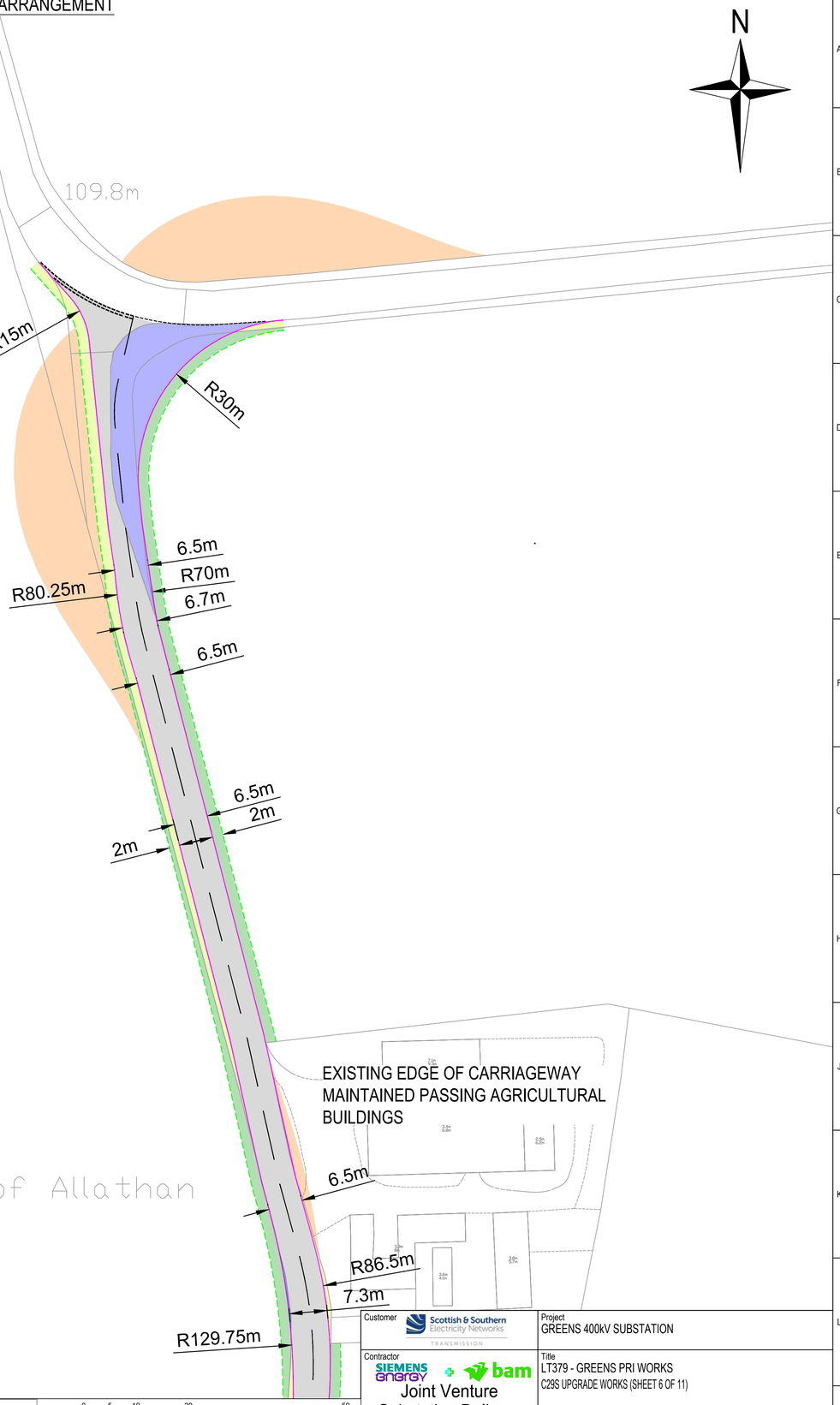
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

CONSTRUCTION RISK
- None

MAINTENANCE / CLEANING RISK
- None

DECOMMISSIONING / DEMOLITION RISK
- None

CARRIAGEWAY GENERAL ARRANGEMENT LAYOUT
SCALE 1:500



LEGEND
- SITE BOUNDARY
- PROPOSED CARRIAGEWAY EDGE
- PROPOSED VERGE EDGE
- PROPOSED CARRIAGEWAY WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED CARRIAGEWAY OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE WITHIN EXISTING ADOPTED ROAD BOUNDARY
- PROPOSED VERGE OUTWITH EXISTING ADOPTED ROAD BOUNDARY
- AREA OF LAND FOR AILV OVER SAIL
- TREES/ FENCES ETC MAY NEED TO BE REMOVED (LAND MAY NEED TO BE UNDER SSE CONTROL)

NOTES:
PROPOSED CARRIAGEWAY LAYOUT BASED ON OS DATA
MORE DETAILED DESIGN SUBJECT TO TOPOGRAPHICAL SURVEY
LAND OWNERSHIP DETAILS WILL BE SUBJECT TO TOPOGRAPHICAL SURVEY
TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:500: 0 5 10 20 50

DRAWING STATUS: ISSUED	REVISION:	P01	
	DRAWN:	FK	19/06/24
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	APPROVED:	CG	19/06/24
PROJECT REF: GRNS4-LT379	FIRST ISSUE		

Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0920

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 6 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0920
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0920

Designed	Drawn	Checked	Approved	Date	Scale	Size	Sheet	Revision
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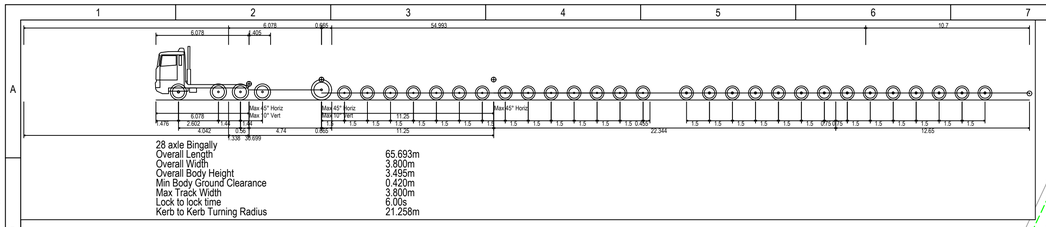

28 axle Bingally	
Overall Length	65.693m
Overall Width	3.800m
Overall Body Height	3.495m
Min Body Ground Clearance	0.420m
Max Track Width	3.800m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	21.258m

TRANSFORMER AILV
SWEPT PATH ANALYSIS (SOUTHBOUND)
SCALE 1:500

TRANSFORMER AILV
SWEPT PATH ANALYSIS (NORTHBOUND)
SCALE 1:500

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
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DRAWING STATUS: ISSUED			PROJECT REF: GRNS4-LT379	FIRST ISSUE
REVISION:	P01			
DRAWN:	FK	21.06.24		
CHECKED:	NB	21.06.24		
APPROVED:	CG	21.06.24		

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TREES & FENCES MAY NEED TO BE REMOVED (SUBJECT TO TOPOGRAPHICAL SURVEY)

METRES @ 1:500 — 0 5 10 20 50

Customer	Scottish & Southern Electricity Networks TRANSMISSION
Project	GREENS 400kV SUBSTATION
Contractor	SIEMENS energy + bam Joint Venture Substation Delivery Framework
Title	LT379 - GREENS PRI WORKS C29S UPGRADE WORKS (SHEET 7 OF 11)
Subcon. Drawing No.	FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0921
Contractor Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0921
Customer Drawing No.	GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0921

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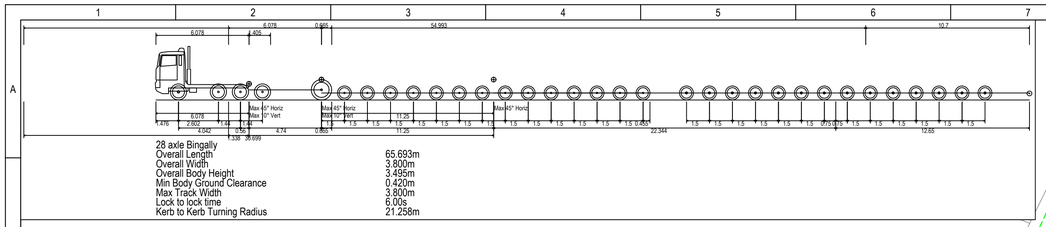
2023



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Overall Width	3.800m
Overall Body Height	3.495m
Min Body Ground Clearance	0.420m
Max Track Width	3.800m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	21.258m

TRANSFORMER AILV
SWEPT PATH ANALYSIS (SOUTHBOUND)
SCALE 1:500

EXISTING EDGE OF CARRIAGEWAY MAINTAINED

102.4m

03.3m

TRANSFORMER AILV
SWEPT PATH ANALYSIS (NORTHBOUND)
SCALE 1:500

N

EXISTING EDGE OF CARRIAGEWAY MAINTAINED

102.4m

103.3m

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PROJECT REF: GRNS4-LT379
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METRES @ 1:500 — 0 5 10 20 50

Customer: Scottish & Southern Electricity Networks TRANSMISSION

Contractor: SIEMENS energy + bam
Joint Venture
Substation Delivery Framework

Subcon. Drawing No. FAIRHURST
GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0922

Project: GREENS 400kV SUBSTATION

Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 8 OF 11)

Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0922

Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0922

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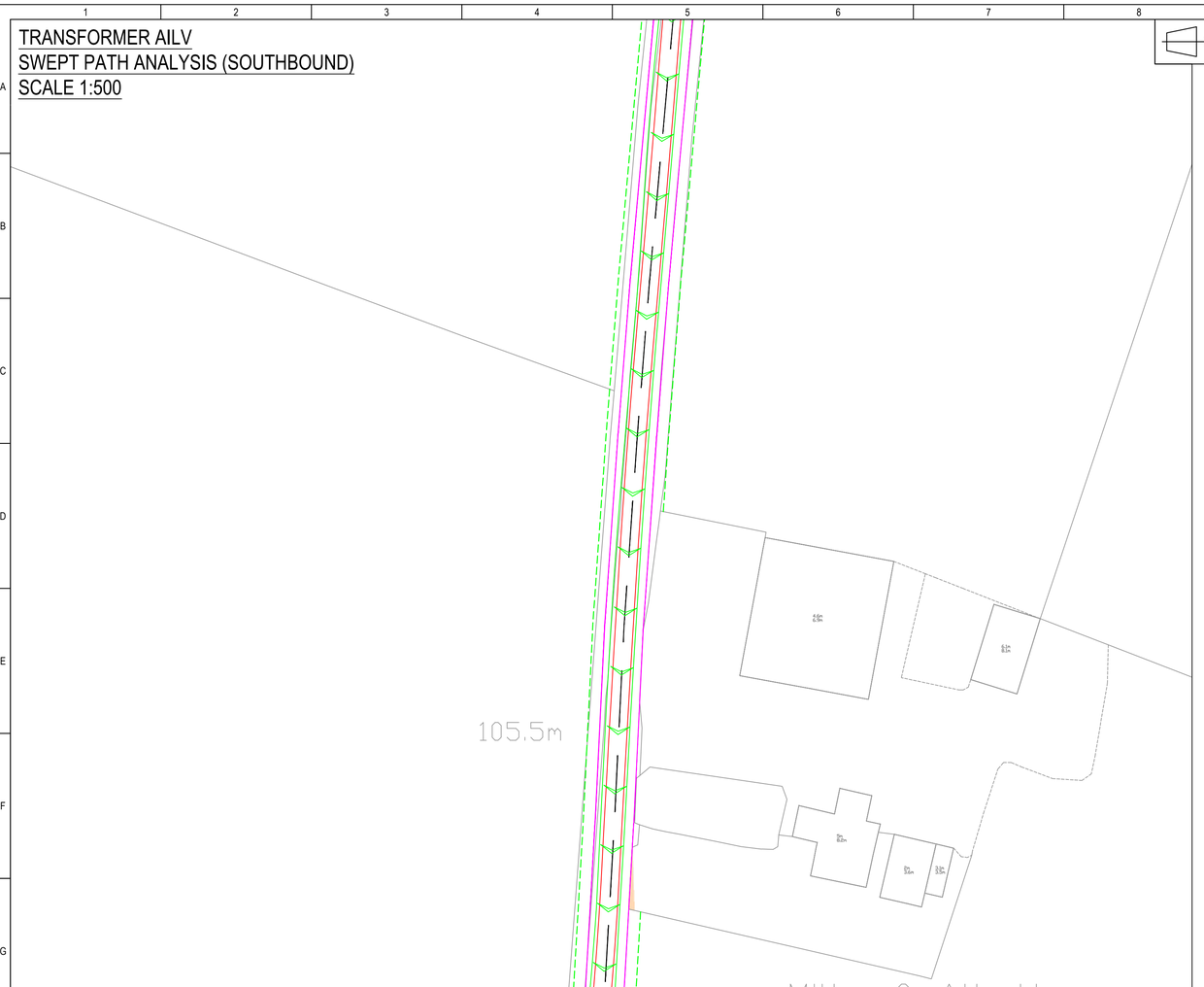
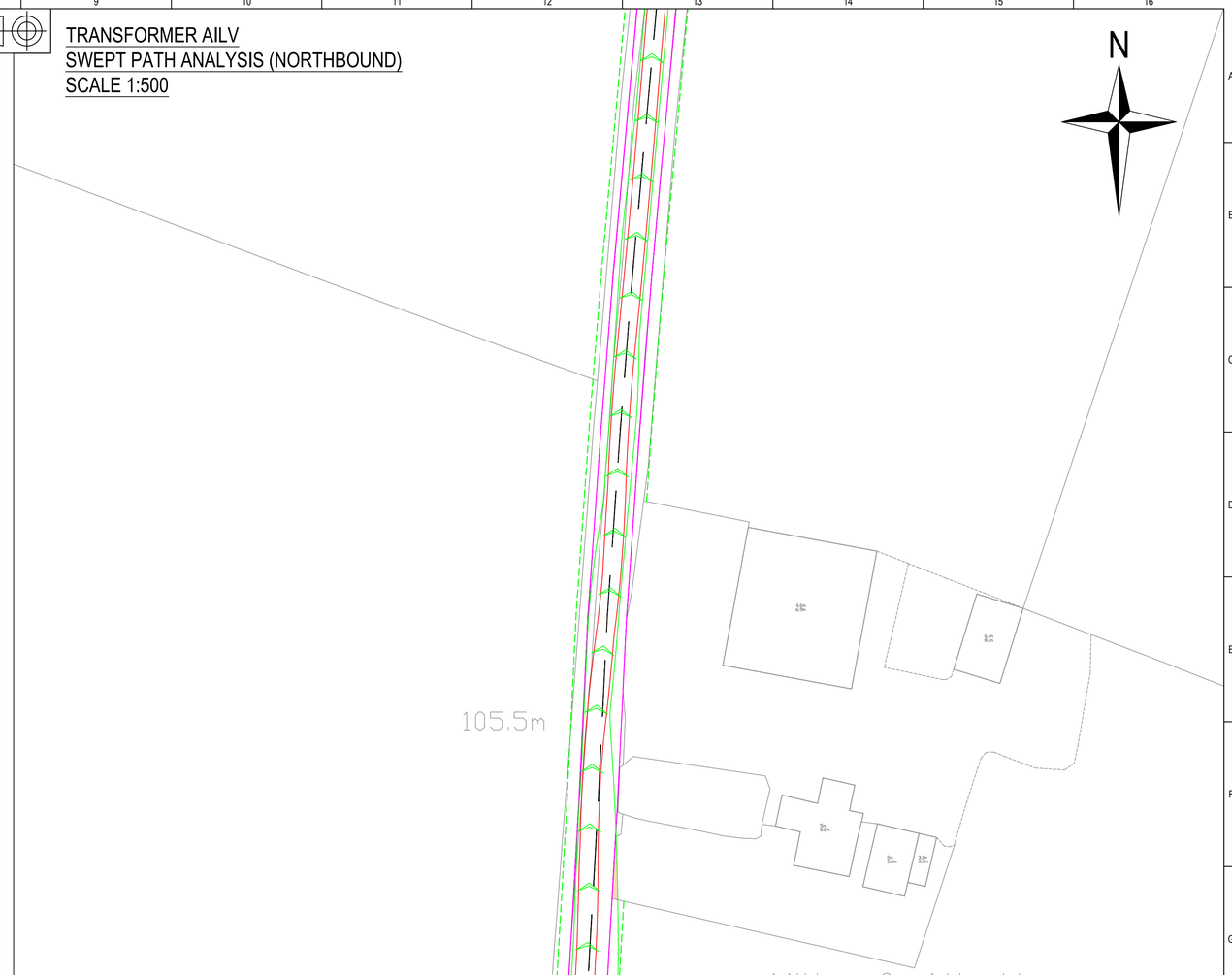
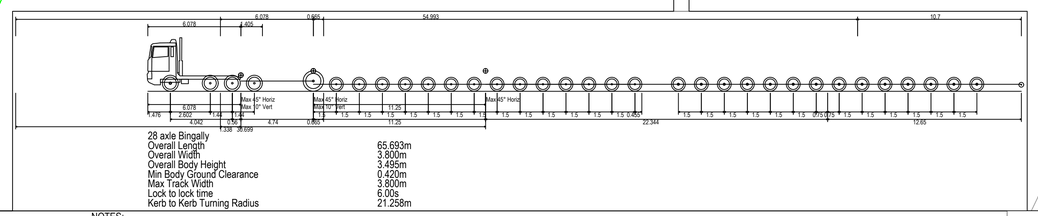
TRANSFORMER AILV
SWEPT PATH ANALYSIS (SOUTHBOUND)
SCALE 1:500



TRANSFORMER AILV
SWEPT PATH ANALYSIS (NORTHBOUND)
SCALE 1:500





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METRES @ 1:500: 0 5 10 20 50

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Customer: Scottish & Southern Electricity Networks TRANSMISSION					Project: GREENS 400kV SUBSTATION			
Contractor: SIEMENS energy + bam Joint Venture Substation Delivery Framework					Title: LT379 - GREENS PRI WORKS C29S UPGRADE WORKS (SHEET 9 OF 11)			
Subcon. Drawing No. FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0923					Contractor Drawing No. GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0923			
					Customer Drawing No. GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0923			
Designed: NB	Drawn: FK	Checked: CG	Approved: CG	Date: 21/06/24	Scale: NTS	Size: A1	Sheet: 9 of 11	Revision: P01

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SWEPT PATH ANALYSIS (SOUTHBOUND)
SCALE 1:500

TRANSFORMER AILV
SWEPT PATH ANALYSIS (NORTHBOUND)
SCALE 1:500

N

EXISTING EDGE OF CARRIAGEWAY
MAINTAINED

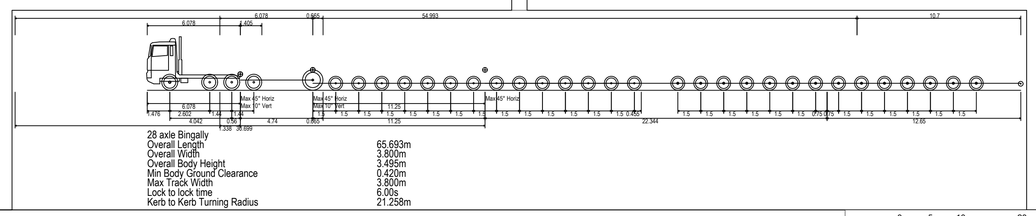
105.5m

EXTENDED
TIE IN OVER 140m

EXISTING EDGE OF CARRIAGEWAY
MAINTAINED

105.5m

EXTENDED
TIE IN OVER 140m



28 axle Bingally

Overall Length	65.693m
Overall Width	3.800m
Overall Body Height	3.495m
Min Body Ground Clearance	0.420m
Max Track Width	3.800m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	21.258m

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Customer: Scottish & Southern Electricity Networks TRANSMISSION
Contractor: SIEMENS energy + bam — Joint Venture Substation Delivery Framework
Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0924

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 10 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0924
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0924

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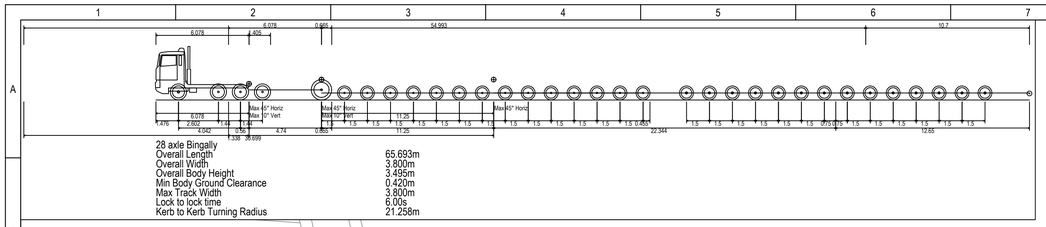

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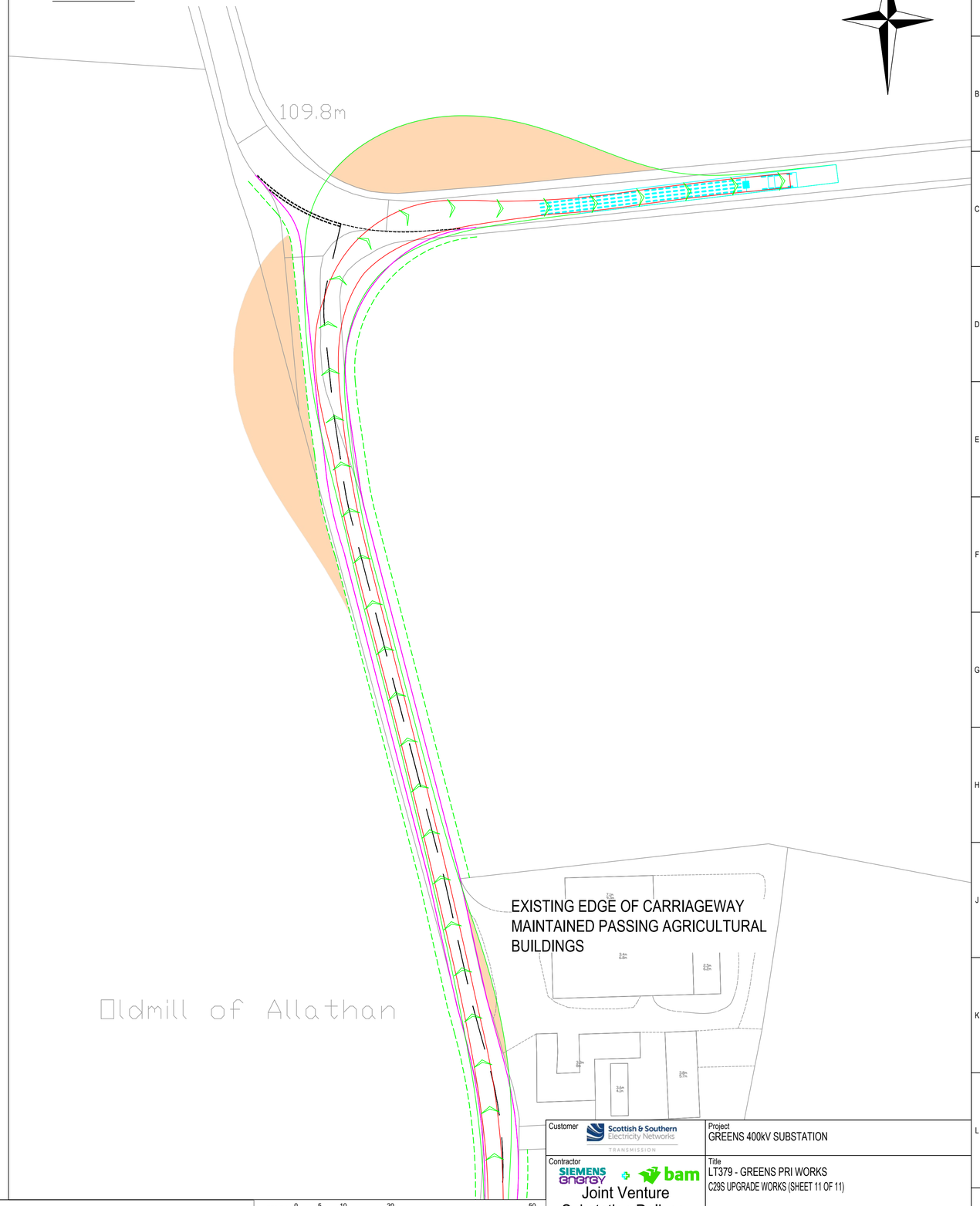
SWEPT PATH ANALYSIS (SOUTHBOUND)
SCALE 1:500

TRANSFORMER AILV
SWEPT PATH ANALYSIS (NORTHBOUND)
SCALE 1:500



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Customer: Scottish & Southern Electricity Networks TRANSMISSION
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Subcon. Drawing No.: FAIRHURST GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0925

Project: GREENS 400kV SUBSTATION
Title: LT379 - GREENS PRI WORKS
C29S UPGRADE WORKS (SHEET 11 OF 11)
Contractor Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0925
Customer Drawing No.: GRNS4-LT379-SEBAM-ZZ-ZZ-D-H-0925

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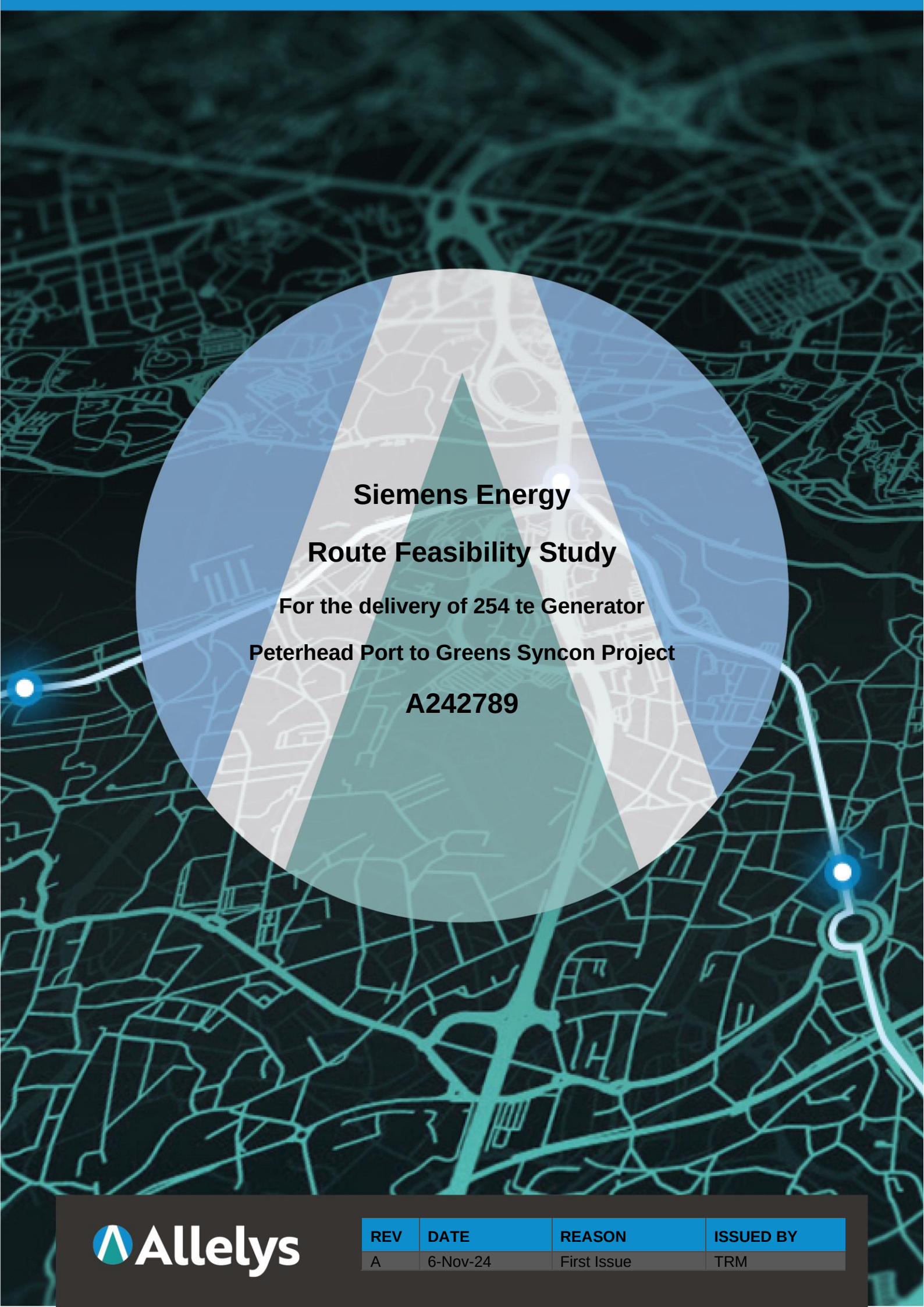
Appendix B – Abnormal Indivisible Loads Assessment



Siemens Energy

Route Feasibility Study

For the delivery of 254 te Generator

Peterhead Port to Greens Syncon Project

A242789

Allelys

REV	DATE	REASON	ISSUED BY
A	6-Nov-24	First Issue	TRM

1. Executive Summary

1.1. Allelys have been asked by Siemens Energy to provide a feasibility survey for the transportation of a 254 te generator from Peterhead Port to the Greens Syncon Project Site.

1.2. The objective of this document is to clearly outline a workable delivery concept for the enclosed cargo arrival at port, to final delivery position whilst adhering to UK legislation and equipment capabilities.

1.3. While the route has historically been used for projects at New Deer Sub Station (2020/21) the comparative loading configurations for the Green's Syncon Project is significantly larger and therefore requires consultation along its entirety.

1.4. The 254 te generator is to be delivered into Peterhead Port (Smith's Quay) and offloaded by crane directly to Girder Frame.

1.5. A finalised ESDAL notification has not been made due to this being a feasibility report. ESDAL has been used though to capture structures to consider.

1.6. The route from Peterhead Port to Green's Syncon is, in large part, considered negotiable. The latter sections of the route at Maryhill will require further SPA Assessment to ensure that the PRI works undertaken for New Deer Sub Station remain compatible.

1.7. The movement, will need to be undertaken with the Police Escort, TTROs, third party land owner(s) permission and street furniture removals. TTROs can take 12 weeks plus to process and should be planned accordingly.

1.8. Due to a lack of design information on the site, it is not currently possible for us to comment on the installation of the equipment upon arrival at Green's Syncon Site. Based on previous experience, however, it is anticipated the generator will require to be transhipped onto an SPMT configuration for delivery into the enclosed machine hall. This would most likely utilise a hydraulic lifting gantry system.

1.9. Any transhipment area is to be constructed to withstand the expected ground bearing pressures and the location of this would need to be determined depending upon sight of access road drawings and vertical/horizontal alignment.

Table of Contents

All the way with Allelys.

Together, we move it all. We believe any challenge, no matter how big or small, is better tackled as a team. We ALL have a part to play and that starts with getting to know each other better.

Allelys provides heavy lift, specialist transport, heavy haulage and logistics solutions to our diverse and innovative customers. We face together all the unique projects with a creative solution, listening from the start and communication at every opportunity.

Our non-defeatist attitude and agile approach means you will be partnering with a team that never gives up. Even in the face of the toughest challenges we aim for joint success.

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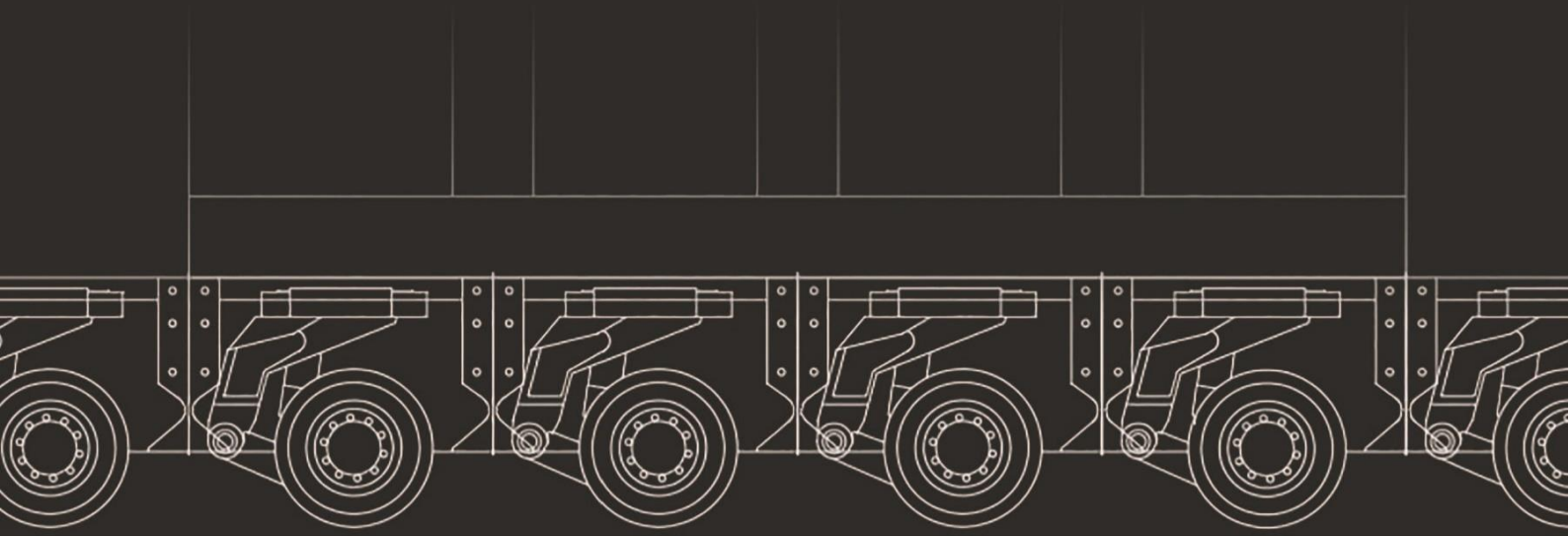
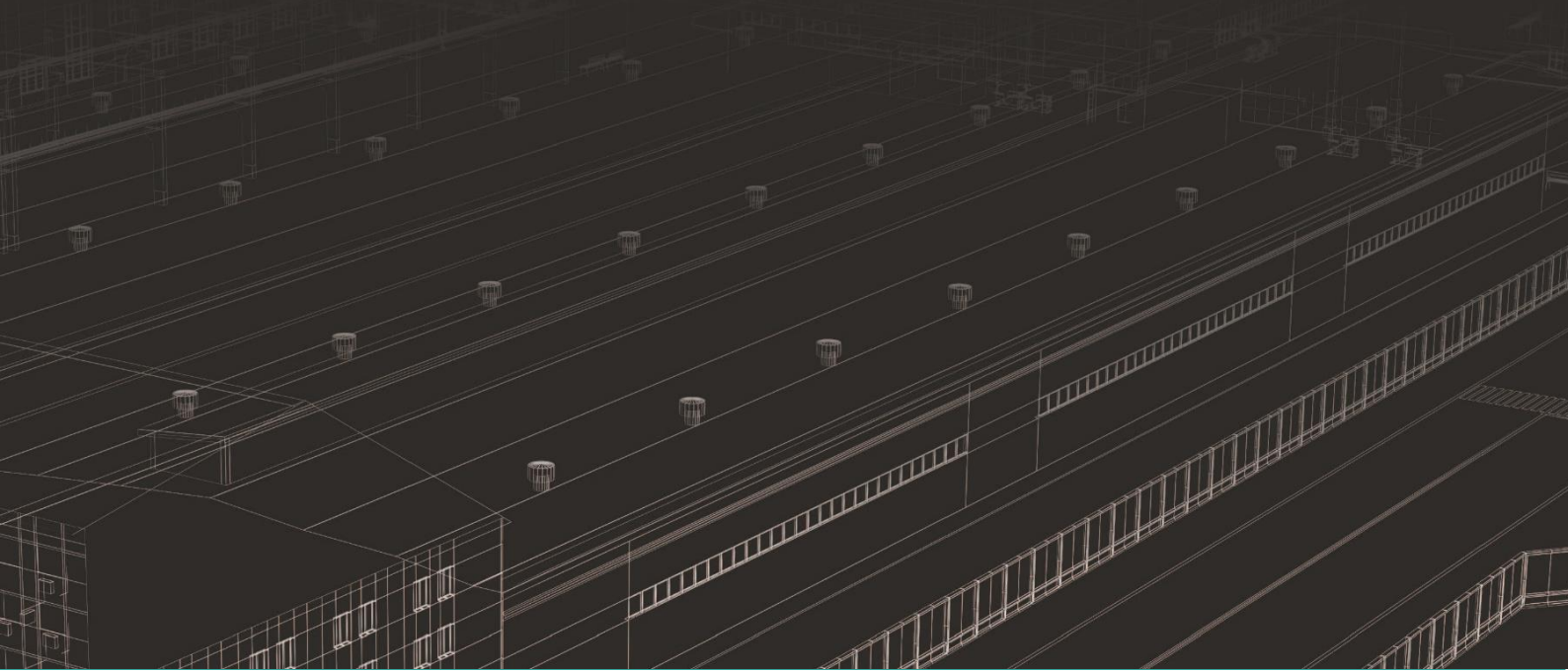


SECTORS

Whatever field you're in, we cover them **All.**



2. Introduction

2.1. Allelys have been asked by Siemens Energy to provide a feasibility survey for the transportation of a 254 te generator from Peterhead Port to the Greens Syncon Project Site.

2.2. The objective of this document is to clearly outline a workable delivery concept for the enclosed cargo arrival at port, to final delivery position whilst adhering to UK legislation and equipment capabilities.

2.3. While the route has historically been used for projects at New Deer Sub Station (2020/21) the comparative loading configurations for the Green's Syncon Project is significantly larger and therefore requires consultation along its entirety.

3. Definitions & Terminology

3.1. Definition of Abnormal Indivisible Load (AIL)

3.1.1. The Department of Transport, of which National Highways (NH) and Transport Scotland (TS) are executive agencies, state that the strict definition of an AIL refers to a load which cannot, without undue expense or risk of damage, be divided into two or more loads for the purpose of carriage on roads which, owing to its dimensions or weight, cannot be carried on a vehicle which complies in all respect with the 'standard vehicle regulations' these are:

- The Road Vehicles (Construction and Use) Regulations 1986 (as amended)
- The Road Vehicles (Authorised Weight) Regulations 1998 (as amended)
- The Road Vehicles Lighting Regulations 1989 (as amended)

3.1.2. All equipment should be stripped of their ancillaries before they are transported. The NH will only accept that further dismantling is not required where it cannot be economically achieved due to the requirement for its construction within factory environments or where extremely high tolerances have to be maintained.

3.2. Legislation

3.3. Conventional heavy goods vehicles have an operating weight limit of 44 tonnes. The category known as (AIL) covers those vehicles where the gross weight exceeds 44 tonnes. An Abnormal Load is defined as that which cannot be carried under Construction and Use (C&U) Regulations. Items which, when loaded on the load carrying vehicle exceed the weights encompassed by the C&U Regulations, but do not exceed Special Order Permission Limits are governed by Special Types General Order (STGO) categories 1 to 3 depending on size.

3.4. Where dimensions exceed 6,100 mm in width, 30,000 mm in rigid length or 150 tonnes gross weight, Special Order from NH, is required.

3.5. Special Order category AIL movements are authorised by the NH Abnormal Loads team, an executive agency of the Department for Transport (DfT, based in Birmingham).

3.6. *Water Preferred Policy Requirements*

3.7. The Department for Transport has adopted a 'water-preferred' policy for the transport of AILs. This means that, where an application is sought for the movement of a Special Order or VR1 category load (more than 5.0 m width) by road, the Department, via NH and TS, will turn down the application where it is feasible for a coastal or inland waterway route to be used instead of road. NH advise that this decision is based on a number of factors including whether the load is divisible, the availability of a suitable route, the amount of traffic congestion that is likely to be caused and the justification for the load to be moved. The NH Abnormal Loads Team is the department responsible for the authorisation of Special Order AILs and government policy is that the closest available port of access should be used for the delivery of such oversized items.

3.8. *Abbreviations*

AIL	Abnormal Indivisible Load
C&U	Construction and Use
LHA	Local Highway Authority
MHWS	Mean High Water Spring
MLWS	Mean Low Water Spring
NH	National Highways
PRI	Public Road Improvement
SAC	Special Area of Conservation
SPA	Swept Path Assessment
SPMT	Self-Propelled Modular Trailer
STGO	Special Types General Order
TS	Transport Scotland
TTRO	Temporary Traffic Regulation Order

4. Cargo Summary

4.1. The below information has been supplied by Hitachi (Sweden).

Table 1 Cargo Details

Description	Qty	Dimensions [mm]	Weight [kg]
Transformer	1	L 10,610 x W 3,990 x H 3,678	254,000

5. Port of Entry

5.1. Peterhead Port

5.2. Peterhead Port is situated adjacent to the town of Peterhead in Aberdeenshire, and is a known harbour for receiving heavy/abnormal break bulk cargo. The harbour is operated as a Trust Port and managed by the Peterhead Port Authority Harbour Commission established in 2006.

5.3. Peterhead is made up of nine basins and quays, with either the ASCO Terminal on the South side of the Harbour or Smiths Quay within the Northern Harbour currently under lease/operation with NorSea UK

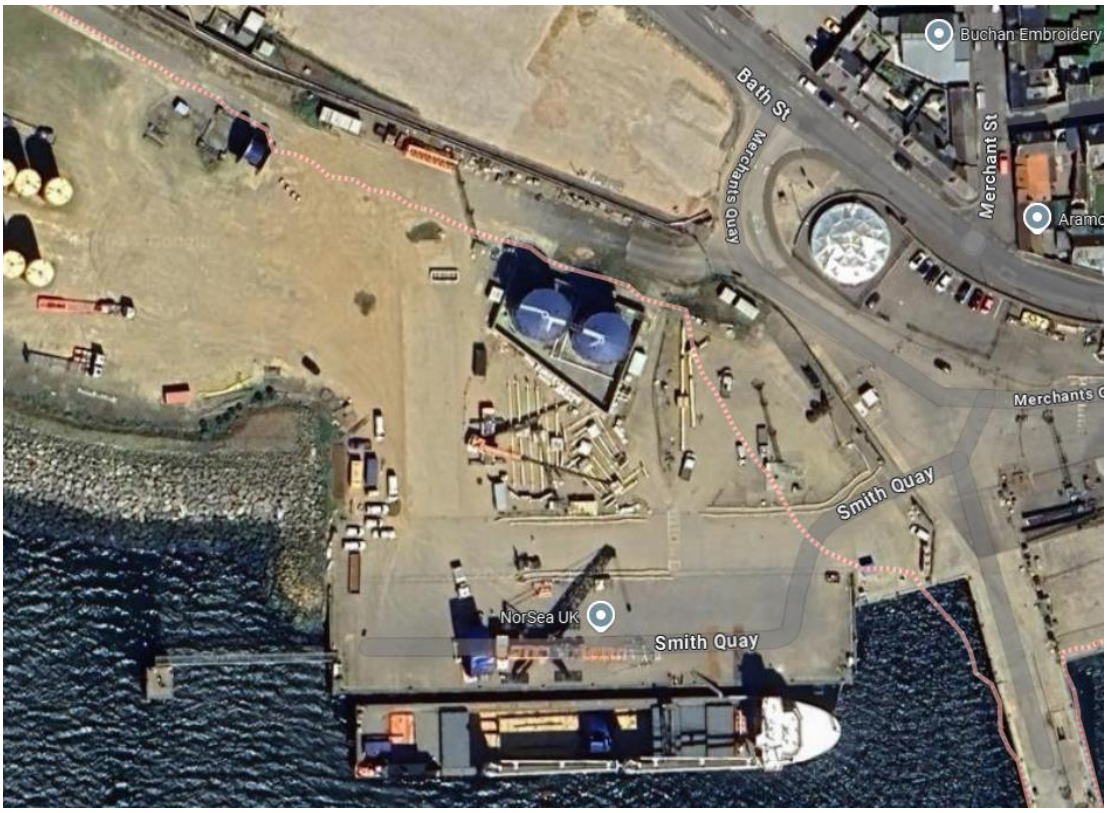


Figure 1 Aerial View of Smiths Quay (highlighted)

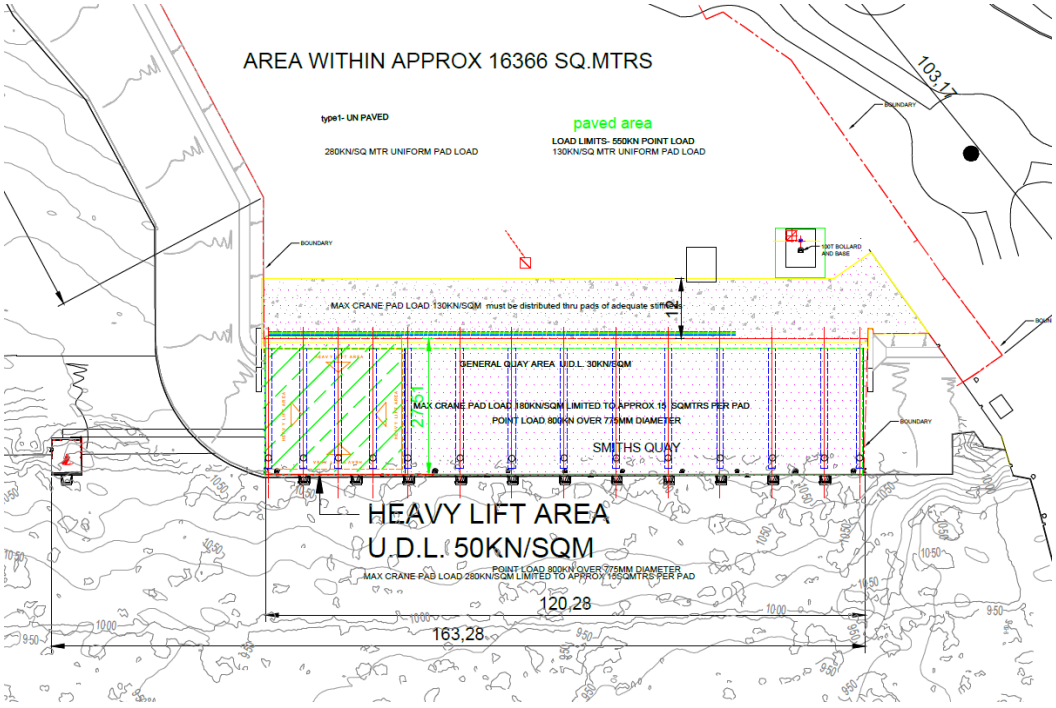


Figure 2 Plan of Smiths Quay (Source: Peterhead Port Authority)

5.4. Smith Quay offers impressive heavy lift capability. Lifts of up to 500 tonnes can take place at the heavy lift pad. The quay's design also allows modules of up to 2,500 tonnes to be skidded ashore and therefore meets all of the requirements for future involvement in the offshore oil and gas decommissioning market.

5.5. As such Smith Quay is the nominated offload quay and has a general ground bearing capacity of approximately 18 te/m^2 limited to 15sqm to each outrigger pad. Further details of Smith Quay will be included in Appendix C

5.6. There is also a designated Heavy Lift PAD (area shown in green within Figure 3). This has a max Pad load of 28 t/sqm which is again limited to 15 Sqms per pad.

5.7. There is sufficient space on Smith Quay to lift the 254 te generator from the delivery vessel directly into the girder frame trailer.

5.8. There is also sufficient storage space (32000m2) of land available for storage of cargo should equipment be delivered in a single shipment and need to be stored at the port while movements to site are co-ordinated.

5.9. The latest Port Tariff can be found on the Peterhead Port Authority Website - PETERHEAD PORT AUTHORITY

6. Equipment

6.1. *Delivery Vehicle*

6.1.1. For this assessment, it is proposed that the 254 te generator be transported on a 28-axle girder frame trailer, as seen in Figure 6.

6.1.2. This transport arrangement has a gross weight 584.45 te, width 5.0 m, height 4.53 m and axle line load 16.3 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. A242789-TA-04 is included under Appendix A.

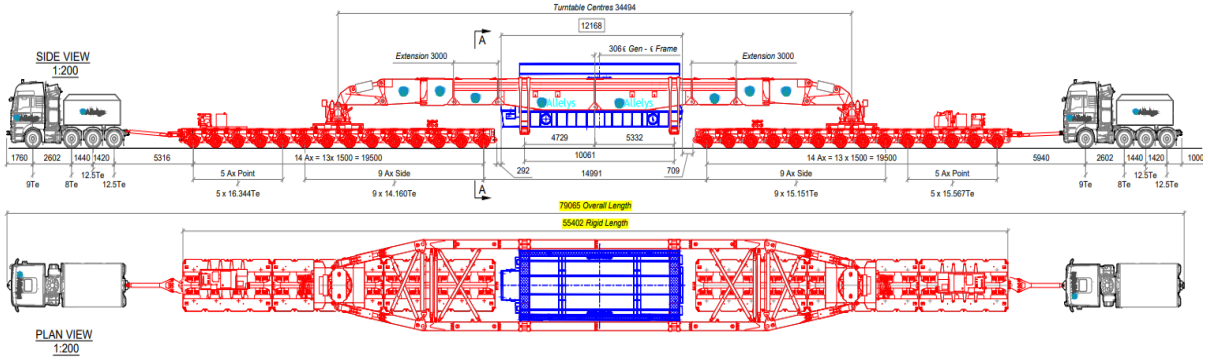


Figure 3 254 te generator loaded within 28-axle girder frame trailer

6.1.3. For the off-loading of the 254 te generator, a 14-axle 2-file SPMT, as seen in Figure 7, Self-Propelled Modular Trailer (SPMT), have been considered. A full analysis will be conducted once additional information about the delivery point is established.

6.1.4. The 14-axle 2-file SPMT transport arrangement has a gross weight 323.0 te, width 4.1 m, height 5.6 m and axle line load 23.5 te.

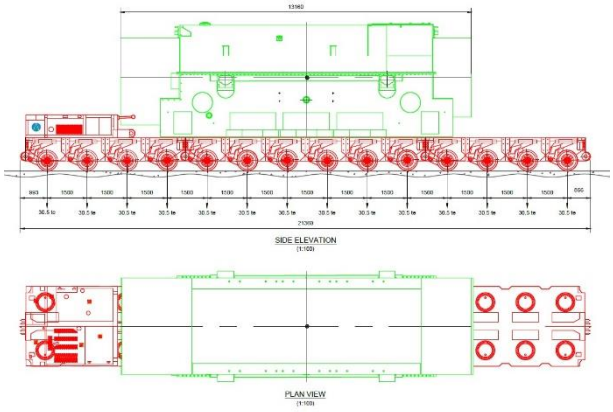


Figure 4 254 te generator loaded onto 14-axle 2-file SPMT

6.2. *Crane*

6.3. Based on the assumption that the typical delivery vessel has dimensions of length 78.3 m, breadth 9.46 m and draft 4.35 m.

6.4. It is proposed that the cargo be offloaded from the delivery vessel using a LG1550 mobile crane. An initial lift feasibility study has been carried out and can be seen in Figure 12 and included in Appendix D.

6.5. At a nominal radius of 13 m, maximum ground bearing pressure is 15.5 te/m^2, which satisfies the maximum ground bearing capacity limit of the quay.

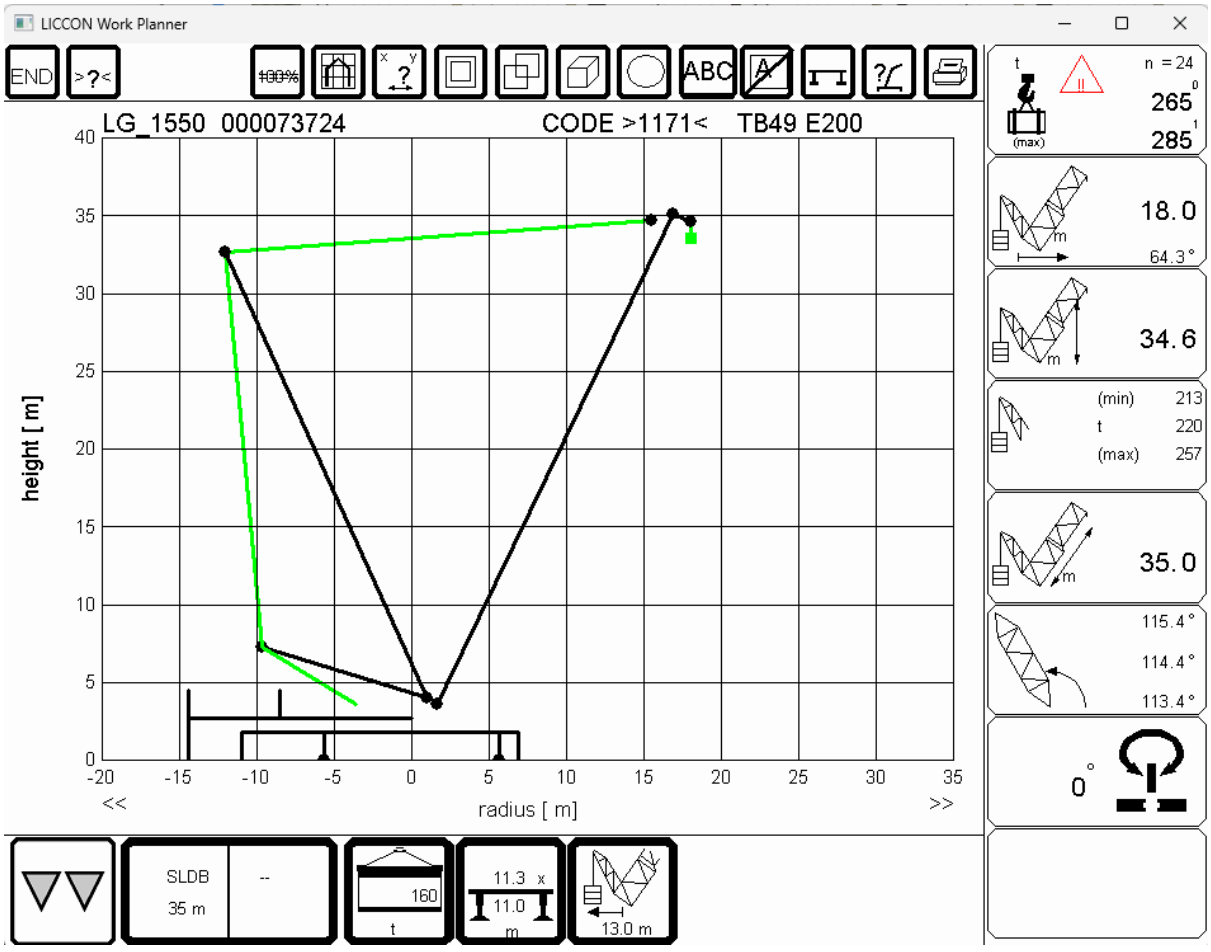


Figure 5 LG1550 254 te generator offload lift feasibility

7. Locations

7.1. Delivery Address

7.2. Greens Syncon Project Site is located approx.18.0 miles to the west of Peterhead Port and is accessed via the A90, A948 and local roads with a total route mileage of 35miles.

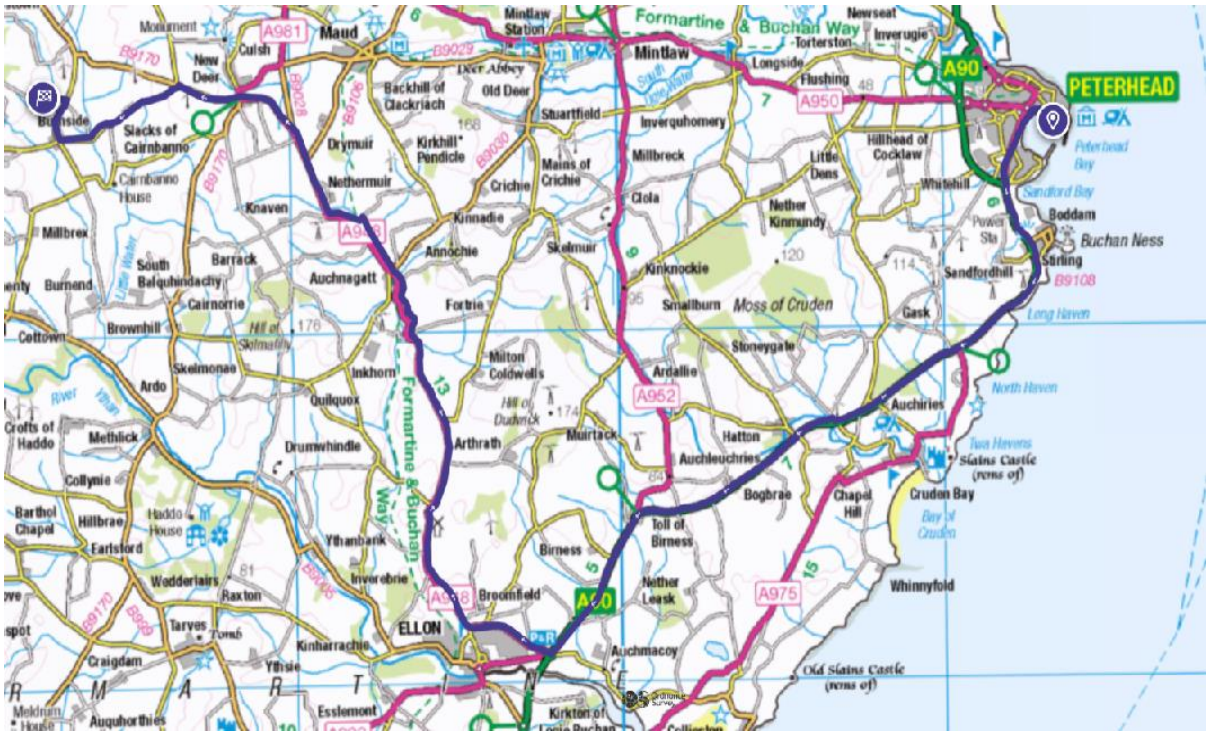
7.3. The general condition of the local roads is good; however, some junctions require further assessment. See Section 7 for more detail.

8. Route Details

8.1. An ESDAL request will be made for any live project and reference number listed here.

The nominated route is as follows, as shown in Figure 1:

- Exit Smiths Quay via Merchants Quay Shunt manoeuvre onto Bath St
- Continue onto Charlotte St
- TL Erroll St/Continue Kirk St
- TL onto A982 South Road
- Continue A90
- TR A948
- Continue A948 Auchreddie Rd E
- Continue B9170 Auchreddie Rd W
- Turn left onto unclassified road to MaryHill
- At the end of the lane turn right
- Reverse Manoeuvre on unclassified to Site Access Point



9. Route Selection Justification

9.1. The selected route via the A982 south, A90, and A948 to the New Deer junction was chosen over the A950 based on thorough technical evaluation and extensive experience with abnormal and indivisible load (AIL) transports. While the council may view the A950 as a standard route for abnormal loads, this designation typically applies to smaller or less complex loads, such as excavators. Our detailed analysis of both routes, combined with our expertise in handling loads of this size and complexity, led us to select a route that maximizes safety, compliance, and operational efficiency for this specific transport.

9.2. The A950 poses multiple constraints that make it unsuitable for a 254-tonne transformer on a 28-axle girder frame trailer:

9.3. **Structural and Geometric Limitations**: The A950 has sections with limited road width, tighter turning radii, and structural limitations that could jeopardize the safe passage of a load this size. By comparison, the A982/A90/A948 route offers a more accommodating infrastructure with verified structural integrity.

9.4. **Proven Reliability for Large AILs**: The selected route has been successfully used in the past for similarly complex moves. Its suitability has been validated through previous structural assessments and route tests, making it a dependable choice for minimizing unforeseen issues.

9.5. **Safety and Compliance**: The chosen route aligns with regulatory guidelines for AIL transport, and we have established arrangements for required enabling works, such as police escort, street furniture removal, and potential contraflow setups. This minimizes disruptions and ensures compliance with safety regulations.

9.6. Latter Stage Route Justification (New Deer Junction to Site Entrance)

9.7. At the New Deer junction, we chose to proceed southwest along an unclaimed road, turning right at the end and heading north past Maryhill to the site entrance, rather than continuing northwest on the B9170. This decision was based on careful consideration of the B9170's sharp left turn, which presents a significant obstacle for this load size. Negotiating this turn would require extensive enabling works, including:

9.8. **Land Modifications**: A Swept Path Assessment (SPA) would confirm the need for substantial tree removal and potential land acquisition along the turn to allow adequate clearance.

9.9. **Environmental and Cost Implications**: These modifications could not only increase project costs but also have environmental impacts and introduce delays due to required approvals.

9.10. In contrast, the route past Maryhill has been historically proven for AIL transports of similar scale and complexity. Using this route minimizes the need for additional enabling works, ensures a smoother passage to the site, and reduces potential environmental and logistical complications. Based on these considerations, we recommend this route as the safer, more efficient, and more reliable option for the final approach.

9.11. As specialists in AIL logistics, we prioritize routes that provide the highest level of safety, predictability, and efficiency. Based on these factors, we confidently recommend and stand by the selected route for this transport.

10. Equipment

10.1. *Delivery Vehicle*

10.2. For this assessment, it is proposed that the 254 te transformer be transported on a 28-axle Girder Frame Trailer, as seen in Figure 2, subject to structural assessments.

10.3. This transport arrangement has a gross weight 433.5 te, width 4.5 m, height 4.95 m and axle line load 14.5 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. ALL-A232037-TA-01 is included under Appendix A.

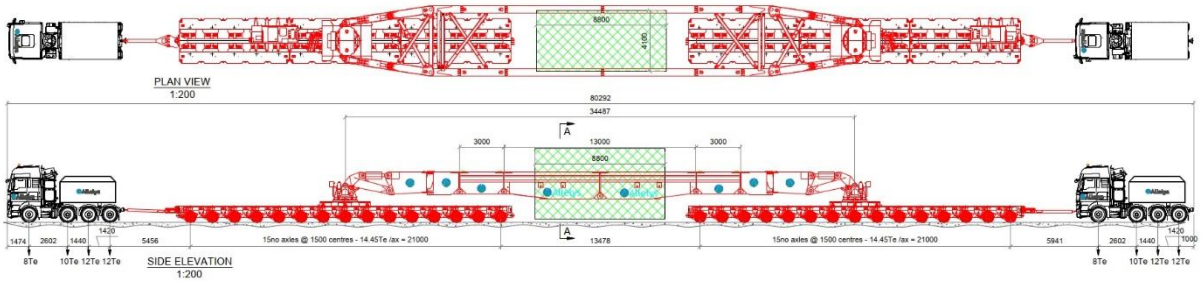


Figure 6 254 te transformer loaded onto 28-axle Girder Frame Trailer

11. Structural Assessments

11.1. *A full list of structures can be found in Annex C*

11.2. Several structures managed by Aberdeenshire Council have been flagged for structural assessment. These include culverts and road bridges along the A982, A948, and B9170 routes. Notable structures needing evaluation are:

11.3. Kirkburn (A982) and Damhead (A982/010): Pipe culvert underbridges requiring load capacity assessment. Multiple masonry arch and slab bridges along the A948, such as Blindburn, Toddlehills (G117), Auquhadlie, and Burngrains (G110). Structures on the B9170, including Gellybrae, Allathan, and Dam Brig, which are primarily masonry arch bridges.

11.4. While several critical structures along the route have been approved, the feasibility of the entire transport route depends on the assessment of the structures requiring evaluation. Depending on the outcomes, alternative routing or reinforcement measures may be necessary to ensure the safe passage of heavy loads.

11.5. It should be noted that there are 17 structural assessments that need to be conducted on this route and although there should be little resistance to bridging solutions etc. Siemens Energy should understand the additional cost implications and possible PRI works if needed.

12. Route Survey

12.1. Route Survey Reference Sheet Notes

12.1.1. Route feasibility recommendations have been identified in Section 9.3 and classified in terms of risk to delivery as follows:

High risk

- Third party land owner(s) permission
- PRI works
- Structure replacement

Medium risk

- Street furniture removals
- Vegetation pruning
- Independent structural assessment
- Structural overbridging
- Shunt/contraflow manoeuvre

Low risk

- Swept path analysis
- Temporary surfacing
- Parking restrictions
- Additional tractor unit
- Oversail of low-level street furniture and verges

12.1.2. Risk has been assessed in terms of enabling works time and complexity.

12.1.3. It should be noted that where route survey photos are of insufficient quality, Google Streetview images have been used.

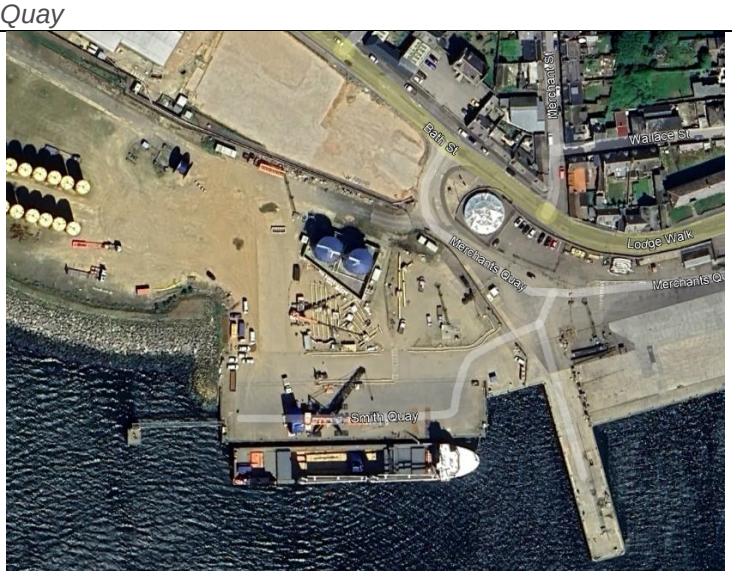
12.2. Route Survey High Level Notes

12.3. In summary, the proposed route follows major and minor roads through Aberdeenshire, including the A982, A90, A948, and B9170. While several structures along the A90 have been approved for use, numerous bridges and culverts on the A948 and B9170 require structural assessments. Coordinating with Aberdeenshire Council to evaluate these structures is essential to ensure the safe and efficient transport of heavy loads along this route.

Route Survey Reference Sheets

Ref. ALL-A242789-RS-01

Peterhead – Smith Quay



Note: - vehicle approaches camera

Direction of Travel Location: Northbound from delivery point in the car park	**Coordinates:** 57°30'06"N 1°46'45"W
Enabling Works Required: Sole use of car park Load spreading mats for landing of bridging ramps	**Enabling Work Grade:** **Medium** **Low**
Assessment Works Required: Port Survey Report V1s included	**Assessment Work Grade:** **Medium** Complete Complete

Ref. ALL- A242789-RS-01

Smith Quay public car park transhipment area

Direction of Travel Location: Smith Quay public car park transhipment area	**Coordinates:** 57°30'06"N 1°46'45"W
Enabling Works Required: Highland Council permission to use car park Temporary closure of car park	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

Smith Quay to Charlotte St

Direction of Travel Location: Exit Smith Quay LH Turn onto Charlotte St	**Coordinates:** 57°30'10"N 1°46'42"W
Enabling Works Required: LH Fence Removal	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

NW Heading onto Kirk Street

Direction of Travel Location: NW along Charlotte St onto Kirk St	**Coordinates:** 57°30'17"N 1°47'02"W
Enabling Works Required: Nil	**Enabling Work Grade:** **Nil**
Assessment Works Required: Route survey and SPA carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

Kirk St A982 RBT

Direction of Travel Location: Head SW taking the first exit onto A982	**Coordinates:** 57.501610, -4.249159
Enabling Works Required: Islan Splitters	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: SPA Route survey carried out	**Assessment Work Grade:** Complete

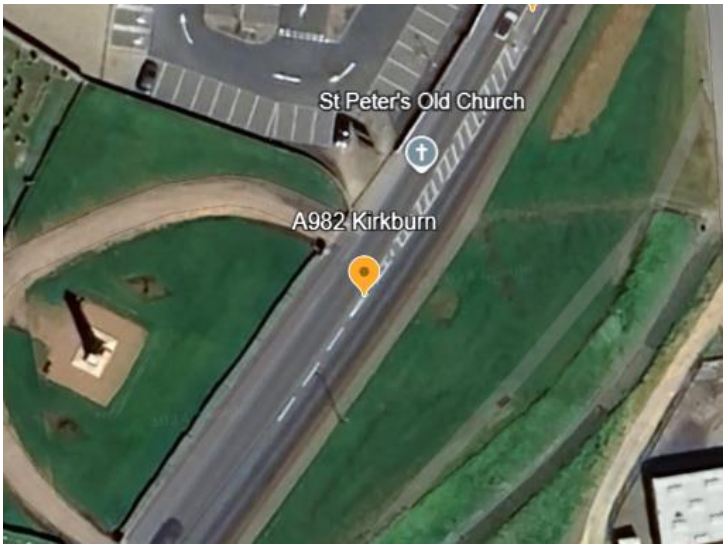
Ref. ALL-A242789-RS-01

A982 Central Splitter 1

Direction of Travel Location: SbSW Along A982	**Coordinates:** 57°30'15"N 1°47'19"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 2



Direction of Travel Location: SbSW Along A982	**Coordinates:** 57°30'09"N 1°47'30"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 3

Direction of Travel Location: SbSW Along A982	**Coordinates:** 57°29'58"N 1°47'40"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 4

Direction of Travel Location: SbSW Along A982	**Coordinates:** 57°29'51"N 1°47'46"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 5

Direction of Travel Location: Along A982	**Coordinates:** 57°29'50"N 1°47'48"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 6

Direction of Travel Location: Along A982	**Coordinates:** 57°29'48"N 1°47'50"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 7

Direction of Travel Location: Along A982	**Coordinates:** 57°29'39"N 1°47'58"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Central Splitter 8

Direction of Travel Location: Along A982	**Coordinates:** 57°29'39"N 1°47'58"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982 Damhead

Direction of Travel Location: Along A982	**Coordinates:** 57°29'18"N 1°48'11"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A982/A90 Invernettie Roundabout

Direction of Travel Location: Continue South Along A982	**Coordinates:** 57°29'11"N 1°48'09"W
Enabling Works Required: Island markers to be removed.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: SPA Route survey to be carried out	**Assessment Work Grade:** Medium

Ref. ALL-A242789-RS-01

Continue on A90 to Ellon

Direction of Travel Location: West along the A90 towards Ellon	**Coordinates:** 57°22'41"N 2°01'13"W
Enabling Works Required: Nil – All assessments passed.	**Enabling Work Grade:** **Nil**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

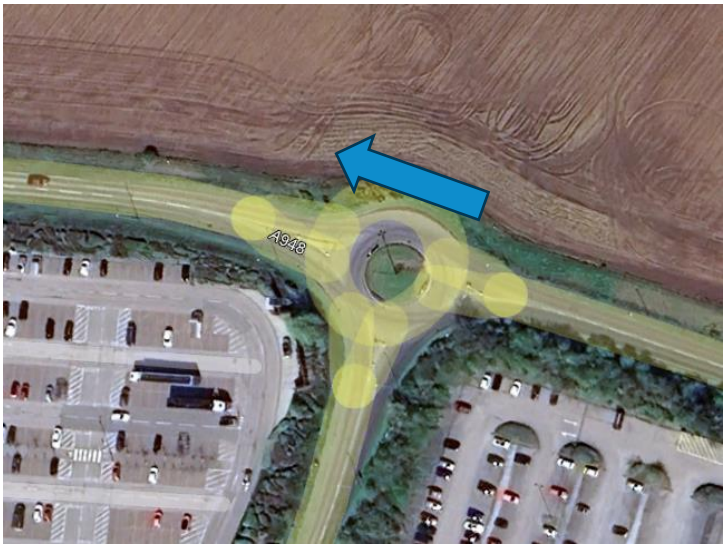
Ref. ALL-A242789-RS-01

A90/A948 RBT

Direction of Travel Location: Take the first turning right cutting the rbt onto the A948	**Coordinates:** 57°22'03"N 2°02'16"W
Enabling Works Required: Contraflow Required Street Furniture removals required.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: SPA to be conducted	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

A948/A920 Rbt



Direction of Travel Location: Enter the Rbt from the RH lane and go straight continuing along the A948	**Coordinates:** 57°22'05"N 2°02'28"W
Enabling Works Required: Contraflow Required Street Furniture Removal Required	**Enabling Work Grade:** Medium Medium
Assessment Works Required: SPA to be conducted	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

Continue along the A948

Direction of Travel Location: Continue Northbound on the A948.	**Coordinates:** 57°28'54"N 2°08'59"W
Enabling Works Required: Structures along the route require assessments	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey and assessment needed along the A948 northbound section.	**Assessment Work Grade:** TBC

Ref. ALL-A242789-RS-01

Continue along the A948

Direction of Travel Location: Continue Northbound on the A948.	**Coordinates:** 57°28'54"N 2°08'59"W
Enabling Works Required: Structures along the route require assessments. Route is negotiable	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey and assessment needed along the A948 northbound section.	**Assessment Work Grade:** TBC

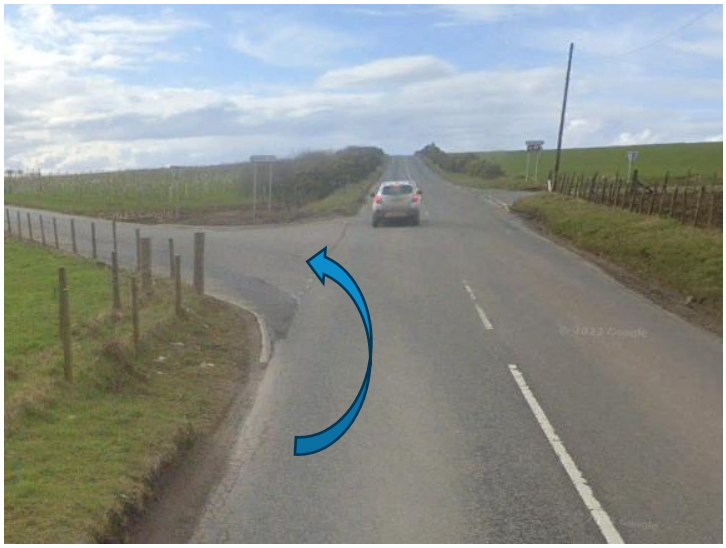
Ref. ALL-A242789-RS-01

A948/B9170 Junction

Direction of Travel Location: At the New Deer junction, continue straight onto the B9170	**Coordinates:** 57°30'39"N 2°11'34"W
Enabling Works Required: Structures along the route require assessments. Parking control needed	**Enabling Work Grade:** **Medium** **Medium** **Medium**
Assessment Works Required: SPA Required	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

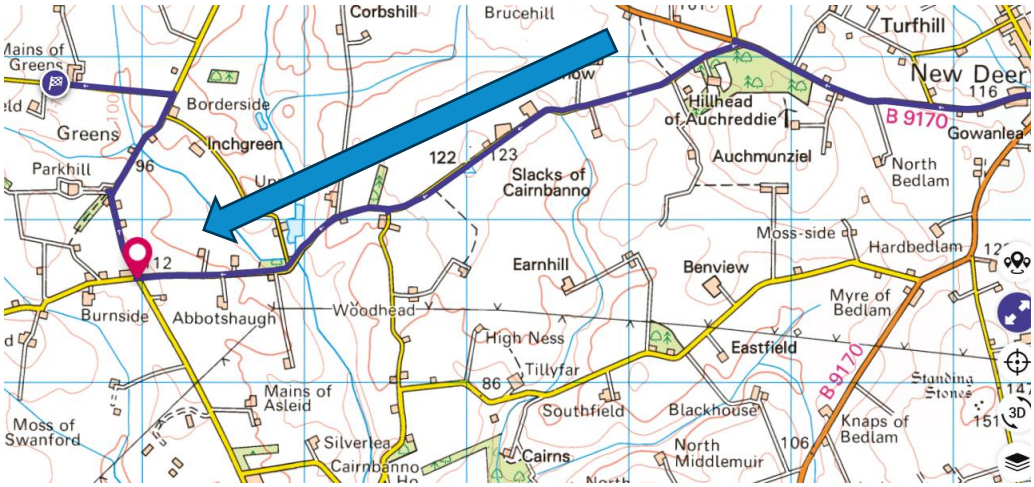
LH Turn from B9170 onto UC Rd



Direction of Travel Location: Turn Left into unclaimed RD	**Coordinates:** 57°30'49"N 2°13'26"W
Enabling Works Required: Structures along the route require assessments. Route is negotiable	**Enabling Work Grade:** Medium Medium
Assessment Works Required: SPA Required	**Assessment Work Grade:** Ongoing

Ref. ALL-A242789-RS-01

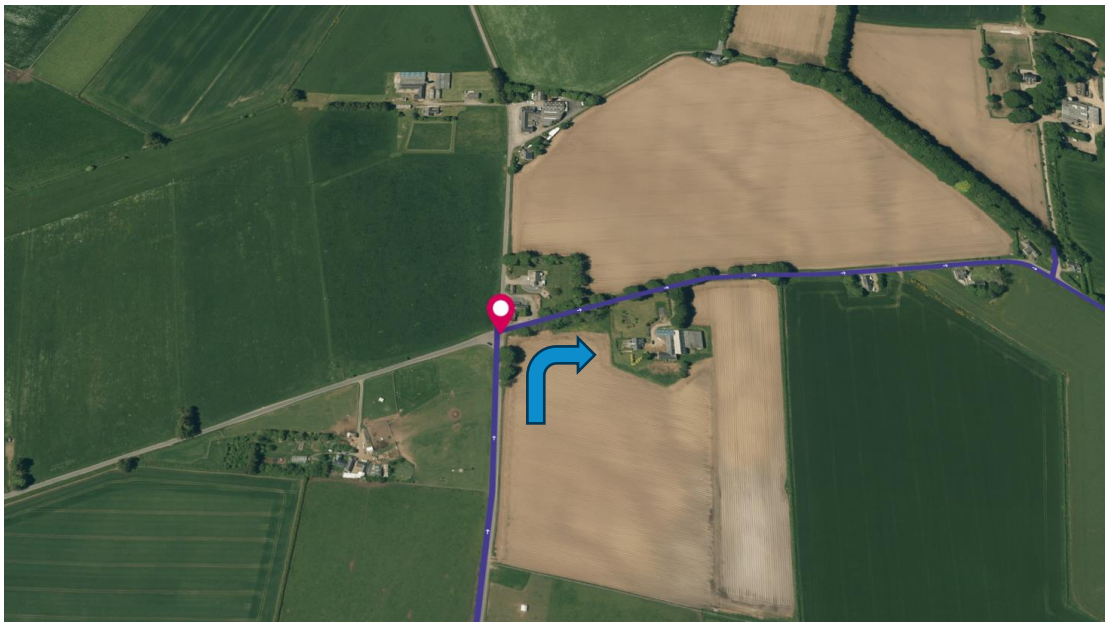
Transit along UC road to Junction

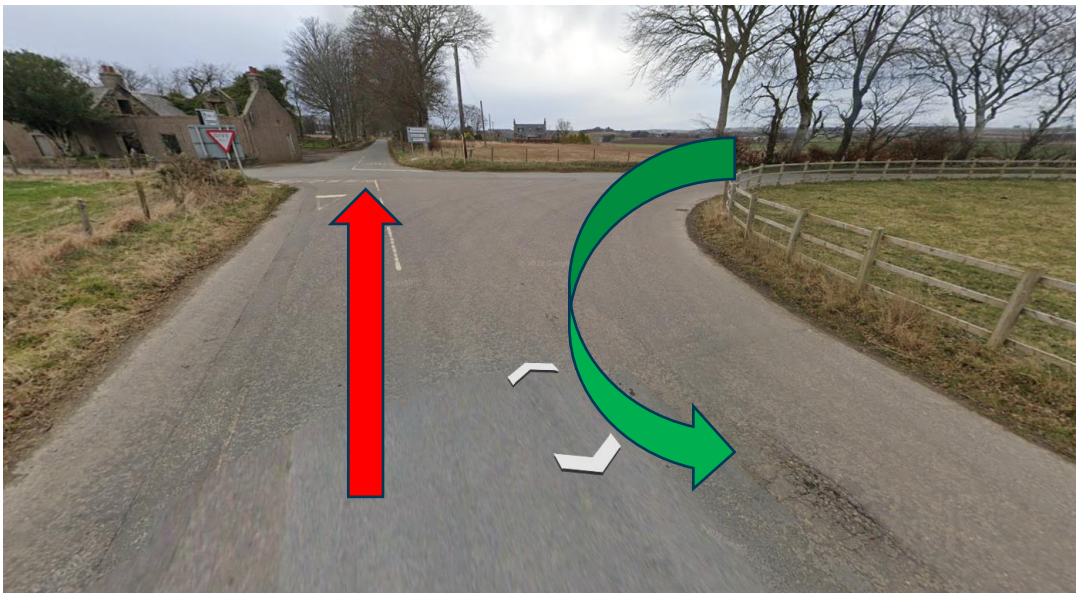


Direction of Travel Location: Continue West along UC road. Prepare for RH turn at the house ahead.	**Coordinates:** 57.501610, -4.249159
Enabling Works Required: Structures along the route require assessments. Possible removal of fence needed – 3rd party land owner authorisation required.	**Enabling Work Grade:** Medium Medium HIGH
Assessment Works Required: SPA Required	**Assessment Work Grade:** Complete

Ref. ALL-A242789-RS-01

Full Reverse Manoeuvre Required to turn right





Direction of Travel Location: Reverse move to enable RH turn into unclaimed Road.	**Coordinates:** 57°30'02"N 2°17'08"W
Enabling Works Required: Structures along the route require assessments.	**Enabling Work Grade:** Medium Medium
Assessment Works Required: SPA Required	**Assessment Work Grade:** TBC

Ref. ALL-A232037-RS-01

Continue North along UC road to LH turn into site.

Direction of Travel Location: North to Syncon Greens site.	**Coordinates:** 57°30'02"N 2°17'08"W
Enabling Works Required: Structures along the route require assessments.	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: SPA Required	**Assessment Work Grade:** Complete

HSEQ

We put **health** and **safety** first.

Health, safety, environment and quality are paramount to Allelys and are at the heart of our business.

Allelys are committed to providing a safe and healthy working environment for our employees and every person that interacts with the organisation. We recognise that the services we provide and the sectors we work in present challenges in terms of managing risk, but we are committed to protecting our people, environment and assets on every project we undertake.

Our safety performance is critical to the success of our business and our projects and therefore it's essential that we continuously identify, assess and act upon any areas that can be improved. Any areas that are identified are reported, recorded, investigated, analysed and then lessons learnt published within safety bulletins and toolbox talks.

Quality is a key component of our management system and customer care is paramount to us. We strive for 100% satisfaction and encourage our customers to get in touch with any feedback they would like to provide. If there are any instances where it's believed that a good quality service has not been delivered, we have procedures in place to investigate and act upon any necessary changes.

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13. Conclusion

13.1. Allelys was commissioned by Siemens Energy to conduct a comprehensive feasibility study for the transportation of a 254-tonne generator from Peterhead Port to the Green's Syncon Project Site. This report presents a viable delivery plan that spans the cargo's journey from arrival at Smith's Quay, Peterhead, to its final positioning on-site, while ensuring full compliance with UK legislation and equipment capabilities.

13.2. Although similar routes have been used in past projects, such as the New Deer Substation, the increased size and complexity of the Green's Syncon Project's load required a meticulous re-evaluation of the entire route. The generator will be offloaded by crane at Peterhead Port directly onto a 28-axle girder frame trailer, which will serve as the primary transport configuration for this operation.

13.3. While a formal ESDAL notification is pending at this feasibility stage, key structures along the route have been identified and evaluated using the ESDAL system to preemptively address any structural concerns. The selected route is deemed negotiable overall, with a reliable history of successful use for abnormal indivisible loads (AILs) of similar scale. However, the final sections near Maryhill will require additional Swept Path Assessments (SPAs) to confirm that previous infrastructure enhancements at the New Deer Substation are adequate for this larger load.

13.4. The chosen route—following the A982, A90, and A948—was selected over alternatives such as the A950 and the B9170, given the specific demands of this transport. The A950, while generally preferred by the council for abnormal loads, is constrained by its geometry and structural limitations, making it unsuitable for a load of this magnitude. Similarly, the B9170 was avoided in the final approach due to a sharp left turn that would necessitate extensive enabling works, including tree removal and land modifications. Instead, the route past Maryhill has been proven effective for similar transports, requiring minimal additional interventions and ensuring a safer, more reliable final approach.

13.5. The transport will necessitate careful coordination with Police Scotland for escort services, as well as Temporary Traffic Regulation Orders (TTROs), third-party landowner permissions, and street furniture removals. Planning for TTROs will be crucial, as these may require 12 weeks or more for processing.

13.6. Given the current lack of detailed site design information, a definitive plan for installation within the Green's Syncon Project Site cannot yet be provided. However, based on similar projects, it is anticipated that the generator will need to be transhipped onto a Self-Propelled Modular Transporter (SPMT) for its final positioning inside the machine hall. A hydraulic lifting gantry system is expected to be used for this transhipment, subject to ground bearing pressure requirements.

13.7. Additionally, 17 structures along the route will require formal assessment, which will need to be budgeted into the project. Where possible, Allelys will seek to provide overbridging solutions; however, any necessary Public Road Improvement (PRI) works must also be factored into the overall project costs.

13.8. Any transhipment area will need to be constructed to withstand the specified ground bearing pressures, and the exact location of this area will be determined based on future access road drawings and alignment data.

Appendix A

Trailer Arrangement Drawings

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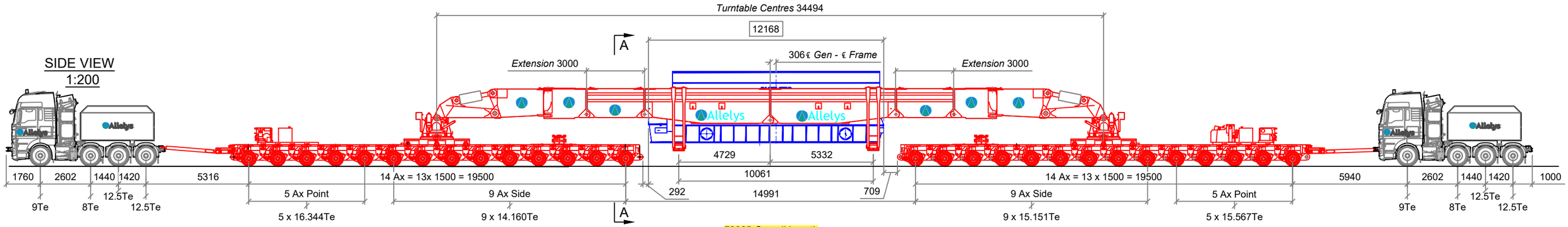
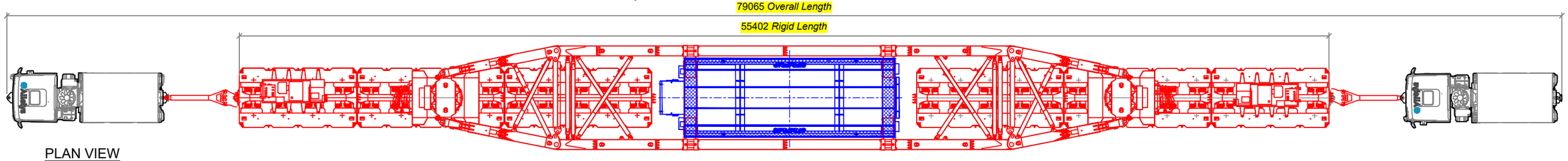
DO NOT SCALE | **IF IN DOUBT ASK**

SIDE VIEW
1:200

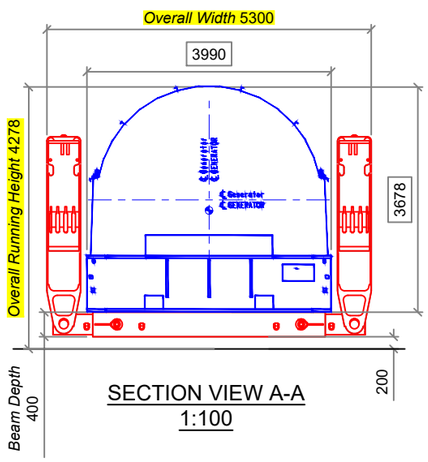


PLAN VIEW
1:200

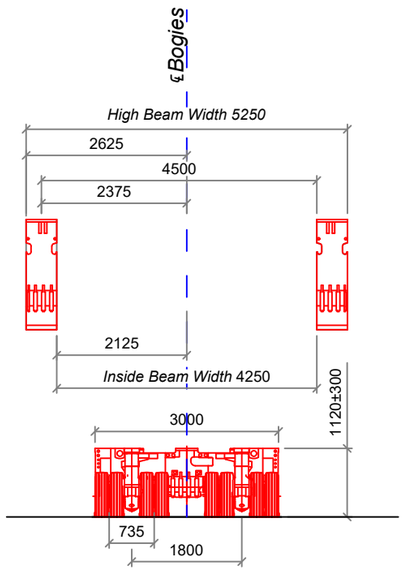


STABILITY CIRCUITS
1:200

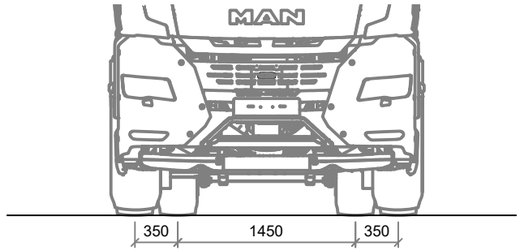
SECTION VIEW A-A
1:100



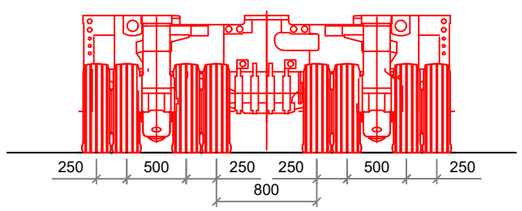
BOGIE + BEAM DETAIL
1:100



TRACTOR UNIT DETAILS
1:50



BOGIE WHEEL DETAILS
1:50



Turning Radii
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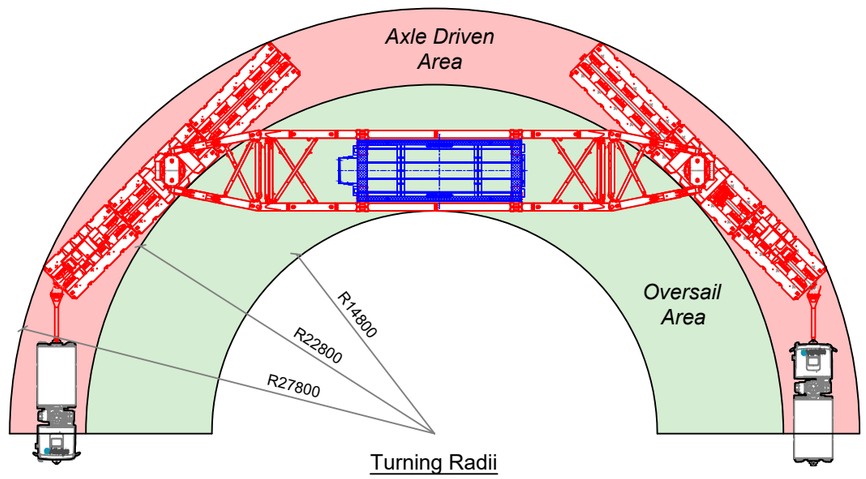

DRAWING NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN Te (METRIC TONNES) UNLESS OTHERWISE STATED.
3. ALL DRAWINGS ARE BASED UPON DETAILS PROVIDED BY THE CLIENT.
4. PLYWOOD/RUBBER SHEETS SHALL BE PROVIDED AT ALL STEEL TO STEEL INTERFACES.

TECHNICAL NOTES:

LOAD TABLE	
Applied Load Weight (Te)	254
Trailer Tare Weight (Te)	161.015
Auxiliary Steel Work (Te)	8.5
Trailer Gross Weight (Te)	425.015
Load per Bogie (Te)	212.51
Load per Axle (Te)	As Above
Block Ground Loading (Te/m²)	3.632

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.
0	11-11-22	3000024588 -EG000586

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	22/08/24	First issue	AJR		
A					
B					
C					

Allelys
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e-mail: enquiries@allelys.co.uk

Client	Siemens Energy
Project	Asti - Framework Route Study
Title	254Te Gen Syncon 28 Ax F5.5 HB 3m Ex - TA
Scale (A3)	SEE DRAWING
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242789-TA-01

Appendix B

Maps

Key

Route 1	
Collection point	
Point of interest	
Delivery point	

Rev.	Date	Amendments
A	06/11/24	First issue

Revisions

Allelys
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Client: Siemens

Project: A242789

Title: 254 te Generator
Peterhead to Greens

Doc. no. ALL-A242789-MAP-01

Sheet 1 of 5

Rev. 0

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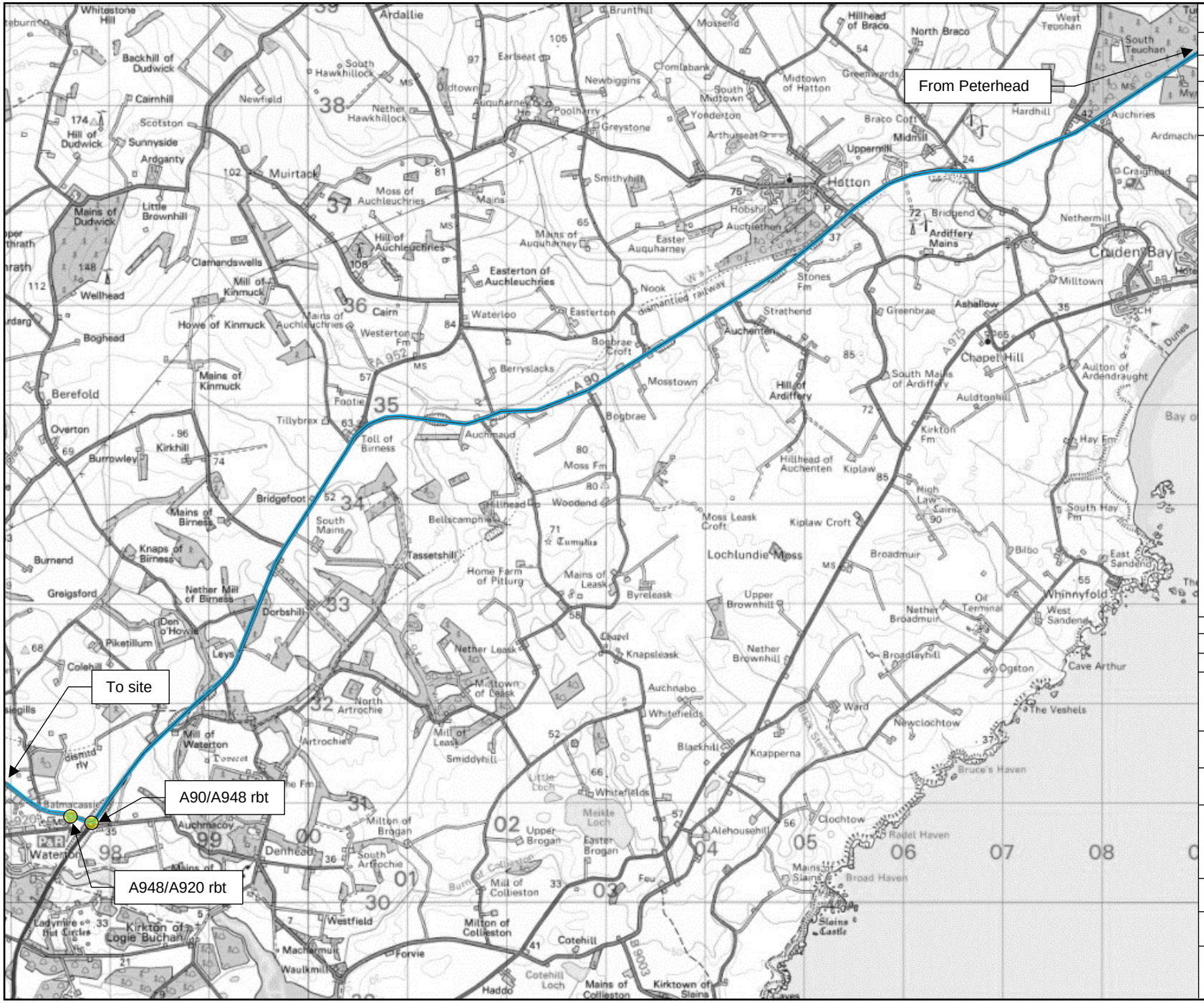

Key

	Route 1
	Collection point
	Point of interest
	Delivery point

Rev.	Date	Amendments
A	06/11/24	First issue

Revisions

Allelys
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Client: Siemens

Project: A242789

Title: 254 te Generator
Peterhead to Greens

Doc. no.: ALL-A242789-MAP-01

Sheet: 2 of 5

Rev.: 0

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Key

Route 1	
Collection point	
Point of interest	
Delivery point	

Rev.	Date	Amendments
A	11/06/24	First issue

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Project: A242789

Title: 254 te Generator
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Doc. no.: ALL-A242789-MAP-01

Sheet: 3 of 5

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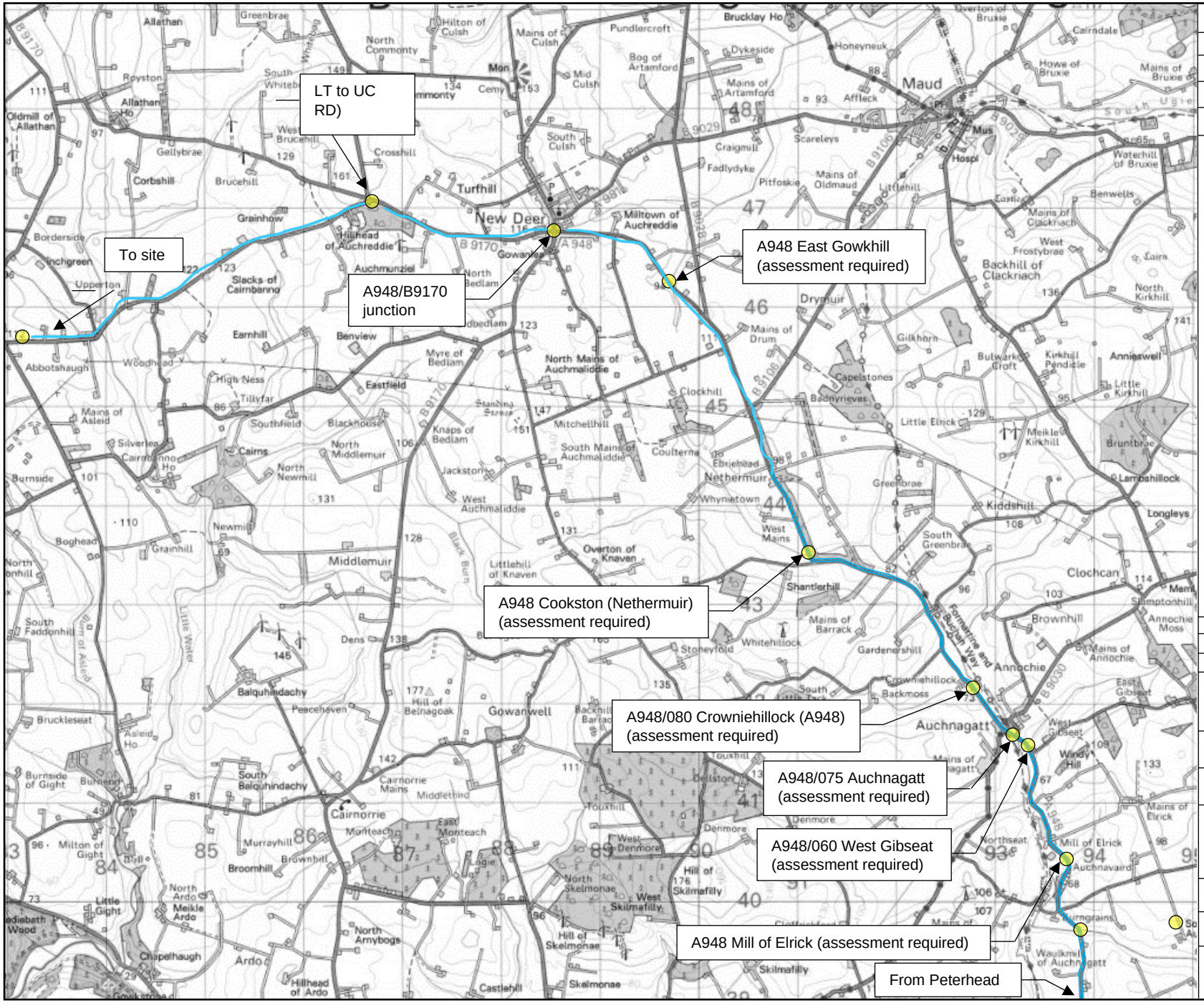

Key

Route 1	
Collection point	
Point of interest	
Delivery point	

Rev.	Date	Amendments
A	11/06/24	First issue

Revisions

Allelys
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Client: Siemens

Project: A242789

Title: 254 te Generator Peterhead to Greens

Doc. no.: ALL-A242789-MAP-01

Sheet: 4 of 5

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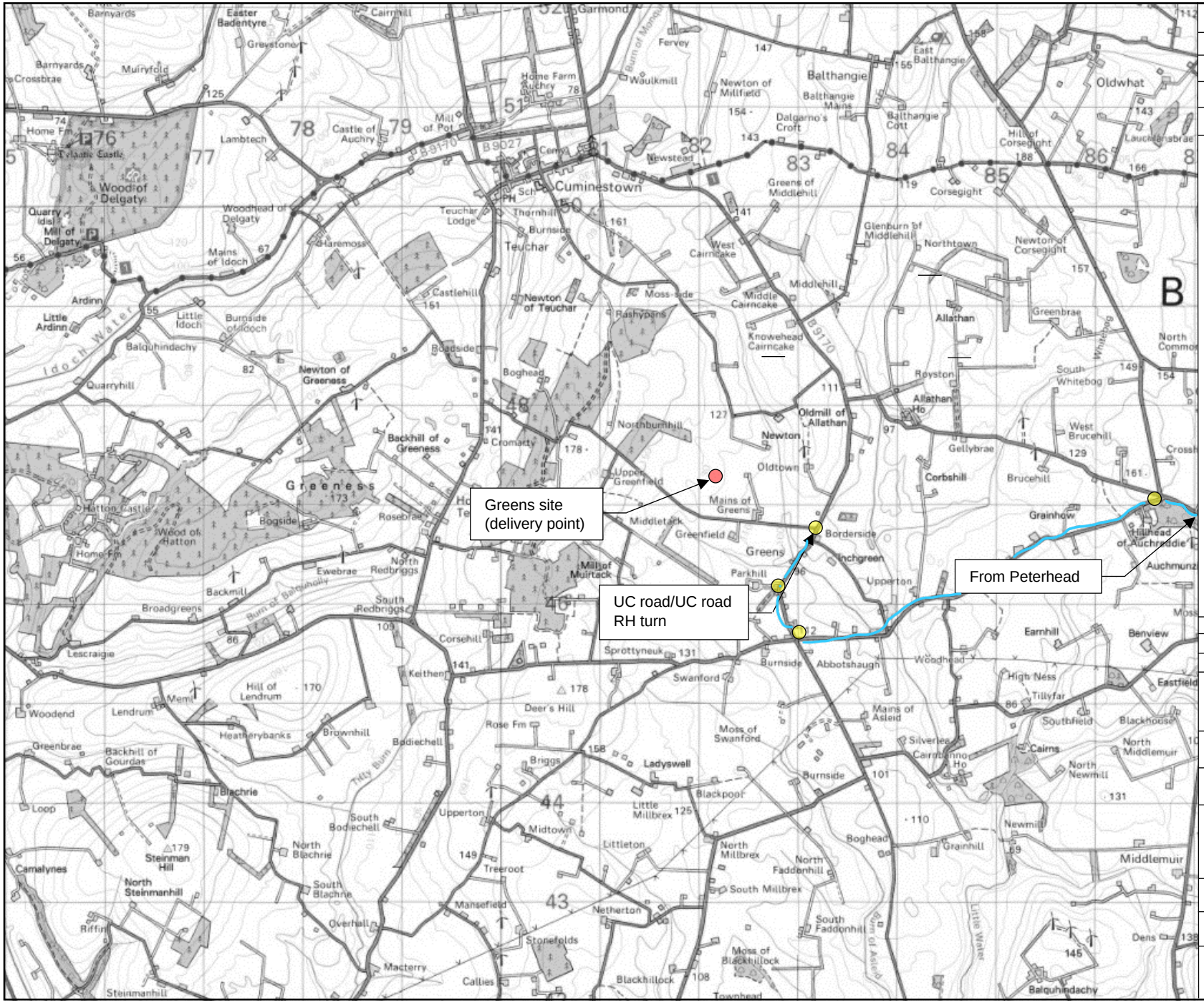

Key

	Route 1
	Collection point
	Point of interest
	Delivery point

Rev.	Date	Amendments
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Sheet: 5 of 5

Rev.: 0

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Appendix C

Structures Details & Assessments

Table 2 Route 1 structures

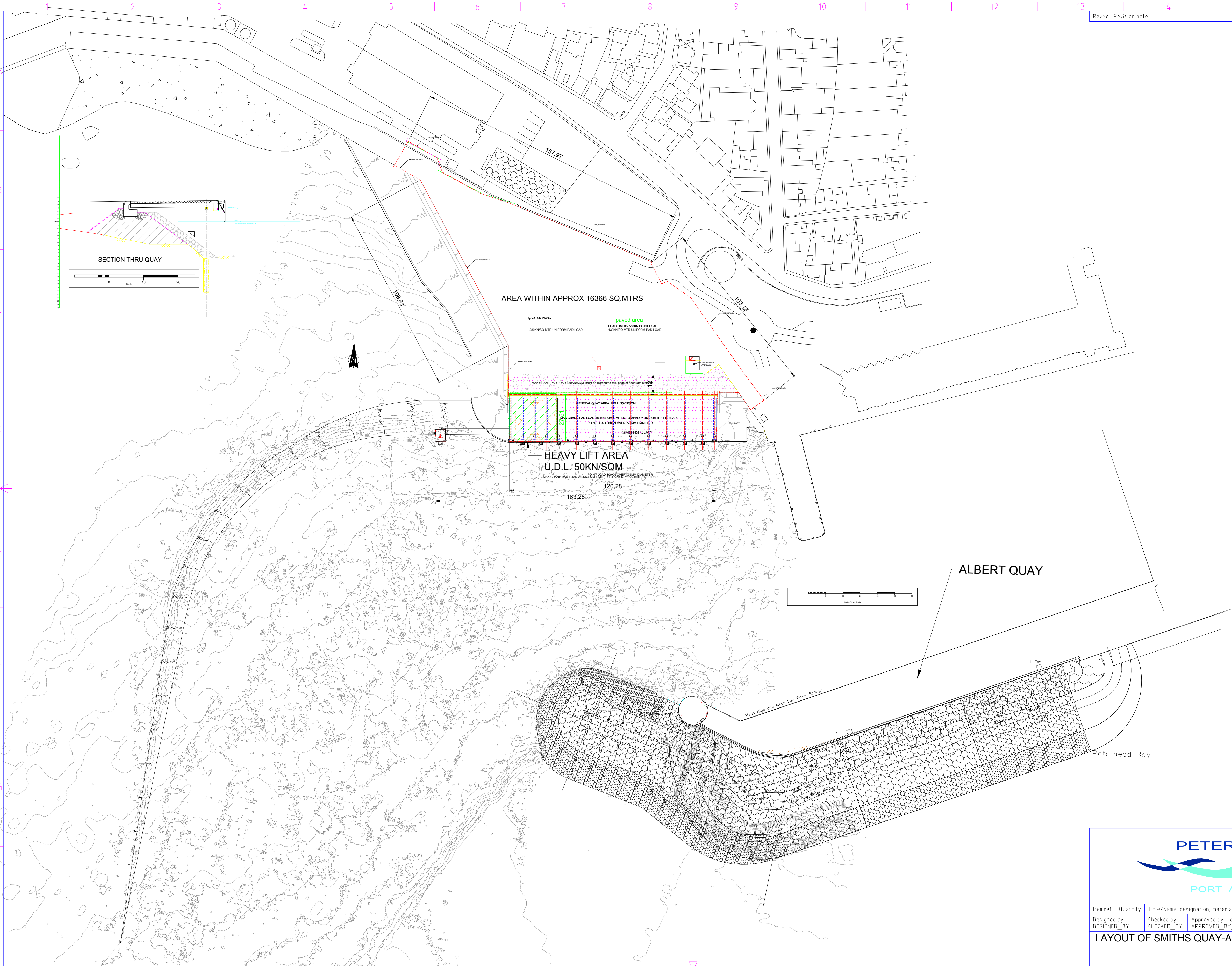
Structure ID	Structure name	Structural authority	Check result	Easting	Northing	Category	Type	Class	Length [m]
A982	KIRKBURN	ABERDEENSHIRE COUNCIL	Assessment required	412708	845996	CULVERT	PIPE	UNDERBRIDGE	1.27
A982/010	DAMHEAD	ABERDEENSHIRE COUNCIL	Assessment required	411892	844263	CULVERT	PIPE	UNDERBRIDGE	3.20
A90 1020 C40	MILLBANK	TRANSPORT SCOTLAND /AMEY (NES)	Approved	412448	842590	CULVERT	-	UNDERBRIDGE	
A90 1020 C5	WEST TURNALIEF	TRANSPORT SCOTLAND /AMEY (NES)	Approved	409644	838968	CULVERT	-	UNDERBRIDGE	2.70
A90 1020	TURNALIEF	TRANSPORT SCOTLAND /AMEY (NES)	Approved	409402	838789	ROAD BRIDGE	FIXED, MORTAR JOINTED	UNDERBRIDGE	9.20
A90 1010 C65	MYRES	TRANSPORT SCOTLAND /AMEY (NES)	Approved	408584	838263	CULVERT	-	UNDERBRIDGE	1.10
A90 1011	MIDMILL NEW	TRANSPORT SCOTLAND /AMEY (NES)	Approved	406584	837320	ROAD BRIDGE	MORTAR JOINTED	UNDERBRIDGE	13.44
A90 1000 C55	STRATHEND CROFT	TRANSPORT SCOTLAND /AMEY (NES)	Approved	404250	835986	CULVERT	-	UNDERBRIDGE	1.80
A90 1000 C50	AUCHENTEN	TRANSPORT SCOTLAND /AMEY (NES)	Approved	403900	835769	CULVERT	-	UNDERBRIDGE	1.80
A90 1000	FORVIE	TRANSPORT SCOTLAND /AMEY (NES)	Approved	401141	834819	ROAD BRIDGE	SIMPLY SUPPORTED SPAN	UNDERBRIDGE	3.50
A90 990 C80	BRIDGEFOOT	TRANSPORT SCOTLAND /AMEY (NES)	Approved	400128	834106	CULVERT	-	UNDERBRIDGE	-
A90 990	MILL OF WATERTON	TRANSPORT SCOTLAND /AMEY (NES)	Approved	398876	831970	ROAD BRIDGE	FIXED	UNDERBRIDGE	3.10
A948/015	BROOMIES BALMACASSIE	ABERDEENSHIRE COUNCIL	Assessment required	396555	831461	ROAD BRIDGE	RC BOX	UNDERBRIDGE	-
A948	GOLF VIEW	ABERDEENSHIRE COUNCIL	Assessment required	395190	831640	CULVERT	PIPE	UNDERBRIDGE	1.01
A948	BLINDBURN	ABERDEENSHIRE COUNCIL	Assessment required	394571	835789	CULVERT	MASONRY SLAB	UNDERBRIDGE	1.35
A948/020	TODDLEHILLS (G117)	ABERDEENSHIRE COUNCIL	Assessment required	394649	837431	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	-
A948	AUQUHADLIE	ABERDEENSHIRE COUNCIL	Assessment required	394200	838326	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	1.84
A948/040	BURNGRAINS (G110)	ABERDEENSHIRE COUNCIL	Assessment required	393854	839705	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	-
A948	MILL OF ELRICK	ABERDEENSHIRE COUNCIL	Assessment required	393710	840430	CULVERT	MASONRY SLAB	UNDERBRIDGE	1.20
A948/060	WEST GIBSEAT	ABERDEENSHIRE COUNCIL	Assessment required	393310	841571	ROAD BRIDGE	CONCRETE PIPE	UNDERBRIDGE	2.25
A948/075	AUCHNAGATT	ABERDEENSHIRE COUNCIL	Assessment required	393196	841671	CULVERT	PIPE	UNDERBRIDGE	-
A948/080	CROWNIEHILLOCK (A948)	ABERDEENSHIRE COUNCIL	Assessment required	392791	842157	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	-
A948	COOKSTON (NETHERMUIR	ABERDEENSHIRE COUNCIL	Assessment required	391110	843500	ROAD BRIDGE	RC SLAB	UNDERBRIDGE	1.85
A948	EAST GOWKHILL	ABERDEENSHIRE COUNCIL	Assessment required	389701	846236	CULVERT	MASONRY SLAB	UNDERBRIDGE	1.00
B9170/150	GELLYBRAE	ABERDEENSHIRE COUNCIL	Assessment required	385071	847652	CULVERT	MASONRY SLAB	UNDERBRIDGE	1.20
B9170	ALLATHAN	ABERDEENSHIRE COUNCIL	Assessment required	383884	847884	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	1.84
B9170/150	DAM BRIG	ABERDEENSHIRE COUNCIL	Assessment required	383730	848084	ROAD BRIDGE	MASONRY ARCH	UNDERBRIDGE	3.77

Appendix D

Swept Path Assessments to follow

Appendix E

Peterhead Port Details



SECTION THRU QUAY
157.97
108.81
103.17
AREA WITHIN APPROX 16366 SQ.MTRS
type1- UN PAVED
280KN/SQ MTR UNIFORM PAD LOAD
paved area
LOAD LIMITS- 550KN POINT LOAD
130KN/SQ MTR UNIFORM PAD LOAD
BOUNDARY
100T BOLLARD AND BASE
MAX CRANE PAD LOAD 130KN/SQM must be distributed thru pads of adequate stiffness
GENERAL QUAY AREA U.D.L. 30KN/SQM
MAX CRANE PAD LOAD 180KN/SQM LIMITED TO APPROX 15 SQMTRS PER PAD
POINT LOAD 800KN OVER 775MM DIAMETER
SMITHS QUAY
HEAVY LIFT AREA
U.D.L. 50KN/SQM
POINT LOAD 800KN OVER 775MM DIAMETER
MAX CRANE PAD LOAD 280KN/SQM LIMITED TO APPROX 15SQMTRS PER PAD
120,28
163,28
ALBERT QUAY
Mean High and Mean Low Water Springs
Peterhead Bay

RevNo	Revision note	Date	Signature	Checked

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference

Designed by	Checked by	Approved by - date	Filename	Date	Scale
DESIGNED_BY	CHECKED_BY	APPROVED_BY_DATE	FILENAME	DATE	SCALE

LAYOUT OF SMITHS QUAY-ALBERT QUAY