Scottish & Southern Electricity Networks

TRANSMISSION

Emmock 400 kV Substation
Environmental Impact Assessment (EIA)
Volume 4 | Appendix 12.1

Transport Assessment

November 2024

CONTENTS

LIST OF ABBREVIATIONS

Term in full	Abbreviations	Definition
Abnormal Indivisible Load	AIL	Loads / vehicles which exceed the maximum vehicle weight, axle weight or dimensions which are set out in the Road Vehicles (Construction and Use) Regulations 1986 as amended.
Automatic Traffic Counter	ATC	Equipment which is laid across a road and measures traffic characteristics such as the number of vehicles passing over it, speed and classification.
Average Daily Traffic	AADT	The average traffic flow over the course of a day which passes a particular location on the road network each day.
Construction Traffic Management Plan	CTMP	Document which outlines traffic management measures to mitigate adverse impacts associated with construction related traffic.
Department for Transport	DfT	UK Government Department for Transport
Design Manual for Roads and Bridges	DMRB	Design Manual for Roads and Bridges
Electronic Service Delivery for Abnormal Loads	ESDAL	Outlines who needs to be notified about a proposed abnormal load delivery route.
Environmental Impact Assessment Report	EIAR	A document detailing the effects a project would have on the environment.
Heavy Goods Vehicle	HGV	All goods vehicles > 3.5 tonnes gross maximum weight.
The Institution of Environmental Management and Assessment	IEMA	The Institution of Environmental Management and Assessment
Light goods vehicles	LGV	All commercial vehicles < 3.5 tonnes gross maximum weight.
Miles per Hour	mph	Measurement unit of speed on British roads.
National Cycle Network	NCN	Designated National Cycle Routes within the UK.
National Road Traffic Forecast	NRTF	Factors used to apply future year growth to traffic flows.
Ordnance Survey	OS	Great Britain's national mapping agency.
Planning Advice Note	PAN	Scottish Government's planning guidance documents.
Route Survey Report	RSR	Report assessing the suitability of a route to transport abnormal loads.
Transport Scotland	TS	Transport Scotland

1. INTRODUCTION

1.1 Purpose of the Transport Assessment

Pell Frischmann (PF) has been commissioned by LUC, on behalf of Scottish & Southern Electricity Networks Transmission (SSEN Transmission), to undertake a Transport Assessment (TA) for a proposed electrical substation (the Proposed Development), known as Emmock.

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This appendix identifies the key transport and access issues associated with the Proposed Development and provides a review of the likely traffic impacts in the study area. The TA identifies where mitigation works may be required to accommodate the predicted traffic impacts associated with the Proposed Development, to be developed during detailed design. It should be read in conjunction with **Chapter 12: Transport and Access** of the **EIA Report** for full details of the Proposed Development.

This appendix is supported by the following:

- Annex A – Site Access Junction
- Annex B – Emmock Road Works (refer Figures 12.1 and 12.2)
- Annex C – Route Survey Report

1.2 TA Structure

Following this introduction, the TA is structured as follows:

- Chapter Two describes the site and proposed development background;
- Chapter Three reviews the relevant transport and planning policies;
- Chapter Four sets out the methodology used within this assessment;
- Chapter Five describes the baseline transport conditions;
- Chapter Six describes the trip generation and distribution of traffic in the study area;
- Chapter Seven summarises the traffic impact assessment;
- Chapter Eight considers mitigation proposals in the form of a Framework Construction Traffic Management Plan; and
- Chapter Nine summarises the findings of the TA and outlines the key conclusions.

2. SITE BACKGROUND

2.1 Site Location

The Proposed Development would be constructed on farmland to the northeast of the existing Tealing Substation, located to the north of Dundee. The Proposed Development is located approximately 2.25km to the west of Tealing and is located with the Angus Council (AC) administrative area.

The Proposed Development would occupy an area currently used for agriculture. Access to the Site would be taken from the Emmock Road, a public road maintained by AC.

The location of the Proposed Development is shown on **Figure 2.1: Site Location** below.

Figure 2.1 Site Location

The existing substation provides the termination point to the proposed Kintore to Tealing 400 kV Overhead Line (OHL).

2.2 Description of the Proposed Development

The proposed works would involve the construction of a new substation, together with associated High Voltage (HV) equipment. The layout of the Proposed Development is illustrated in **Figure 2.2: Proposed Development Layout**.

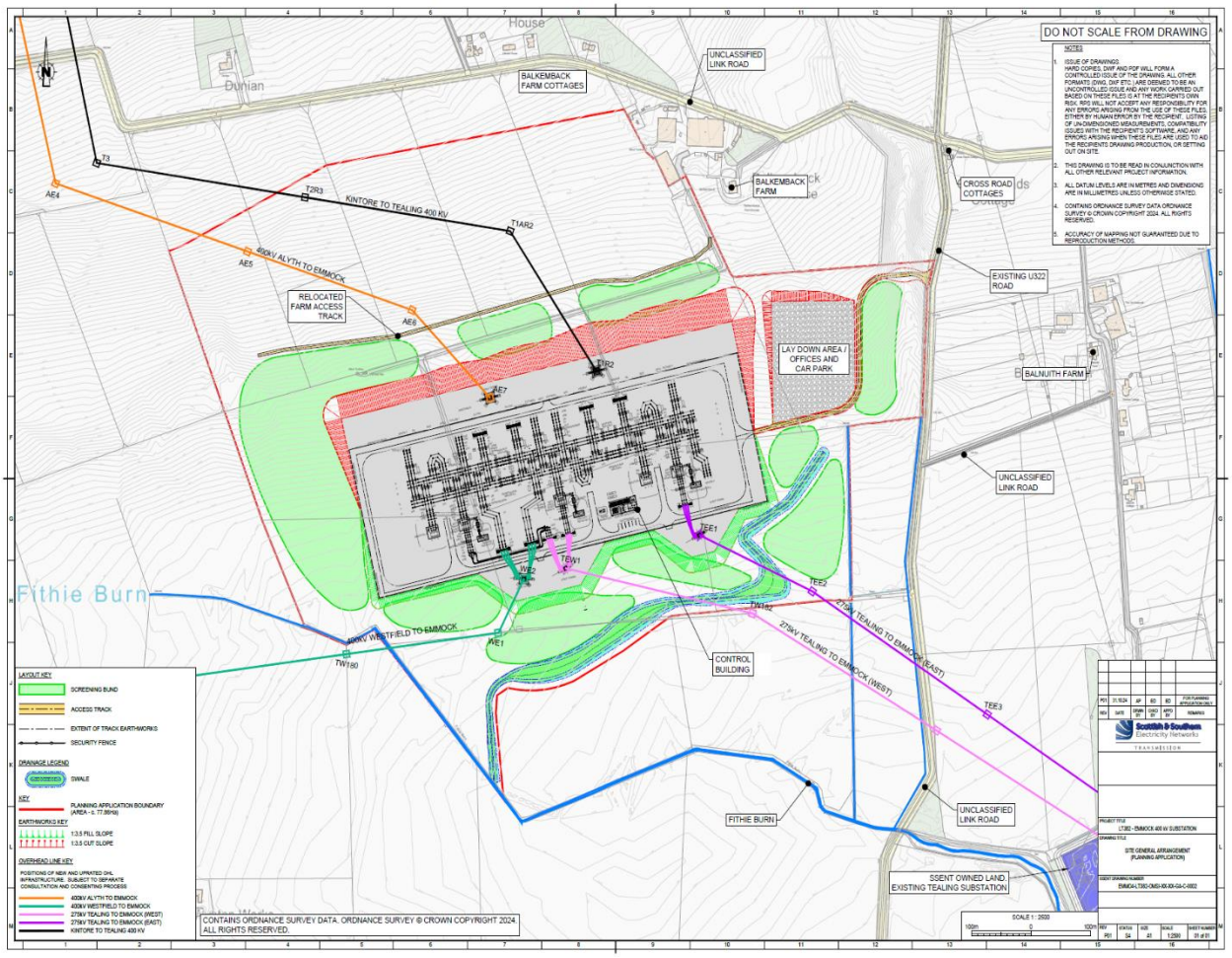


Figure 2.2: Proposed Development Layout

The Proposed Development will include the following:

- Cut and fill operations to create a development platform to accommodate the electrical infrastructure.
- Creation of a new permanent access road east of the Site from Emmock Road
- Construction of a structure over an unnamed culverted watercourse that drains to the Fithie Burn to the south;
- Widening of the access track at Emmock Road to allow for passage of HGVs;
- The erection and commissioning of electrical equipment;
- Erection of a single storey control building approximately 7m in height;
- Perimeter fence, potentially up to 4 m height;
- Landscaping, including screening bunds and new planting to deliver landscape and visual mitigation, and biodiversity net gain (BNG) measures (both on and off site);
- Permanent earthworks and site drainage provisions, including Sustainable Drainage Scheme (SuDS) basins, swales, and a network of interceptors draining into Fithie Burn;
- Internal accesses and parking spaces within the substation platform area;
- Temporary site compound lay down area and material storage areas; and
- Temporary site offices and welfare facilities for on-site construction workers.

2.3 Proposed Abnormal Indivisible Loads

The UK Government describes an Abnormal Indivisible Load (AIL) as “any load that cannot be broken down into smaller loads without undue expense or risk of damage”. AIL movements remain a reserved matter for the UK parliament.

There are four main pieces of legislation that cover AIL movements:

- *The Road Vehicles (Construction & Use) Regulations 1986*;

This covers all aspects of the vehicles setup from the weights and dimensions through to the braking system and environmental standards.

- *The Road Vehicles (Authorised Weight) Regulations 1998*;

These regulations sets the limited maximum weight of the vehicle and axle loading of different vehicle categories.

- *The Road Vehicles (Authorisation of Special Types) (General) Order 2003*;

The Special Types General Orders (STGO) is for vehicles not covered by either of the above Regulations and covers transformer and reactor delivery vehicles which are categorised as N3 for the tractor units and O4 for the specifically designed trailers. It states that the police, the relevant highway and bridge authorities or the Secretary of State may need to be notified of vehicle movement, dependent on the size of the load.

Notifications can be made online through the 'Highway Agency's Electronic Service Delivery for Abnormal Loads (ESDAL) System' or in paper form using the BE16 form for Special Orders.

- *The Road Vehicles Lighting Regulations 1989 (Authorisation of Special Types) (General) Order 2003*;

These regulations defines whether front, side and rear lamps and reflectors are mandatory and which ones are permitted and which are not permitted.

Applications for a 'Vehicle Special Order' (VSO) should be made to the Vehicle Certification Agency (VCA) and it is recommended that applications are applied for at least 8 weeks prior to planned vehicle movements.

The largest plant items for the substation would be the transformer (one load) and reactors (two loads). Whilst the transformer manufacturer is not fully confirmed, it is anticipated that these items would be classed as AILs. Indicative dimensions of the transformer are anticipated to be approximately 6.5 m long, 2.5 m wide and 4 m tall.

Other AILs predicted for the Proposed Development would be the delivery of the erection crane, classed as an AIL due to its width at 3 m.

3. TRANSPORT & PLANNING POLICY

3.1 Introduction

This part of the TA provides an overview of the relevant national and local transport planning policy and guidance.

3.2 National Policy and Guidance

National Planning Framework 4 (2023)

The National Planning Framework 4 (NPF4) was approved by Scottish Parliament on 11 January 2023 and was adopted by Scottish Ministers on 13 February 2023.

Policy 11: Energy within the NPF4 notes that:

> *"Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include:*
>
> - *Wind farms including repowering, extending, expanding and extending the life of existing wind farms;*
> - *Enabling works, such as grid transmission and distribution infrastructure."*
>
> *In addition, project design and mitigation will demonstrate how the following impacts are addressed:*
>
> - *"Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
> - *Public access, including impact on long distance walking and cycling routes and scenic routes;*
> - *Impacts on road traffic and on adjacent trunk roads, including during construction; and*
> - *Cumulative impacts".*

Policy 13: Sustainable Transport within the NPF4 notes the following in relation to Transport Assessments and Travel Plans:

> *"Where a development proposal will generate a significant increase in the number of person trips, a transport assessment will be required to be undertaken in accordance with the relevant guidance."*
>
> *"Development proposals for significant travel generating uses, or smaller-scale developments where it is important to monitor travel patterns resulting from the development, will only be supported if they are accompanied by a Travel Plan with supporting planning conditions/obligations. Travel plans should set out clear arrangements for delivering against targets, as well as monitoring and evaluation."*

Planning Advice Note (PAN) 75

Planning Advice Note (PAN) 75: Planning for Transport provides advice on the requirements for Transport Assessments. The document notes that:

> *"… transport assessment to be produced for significant travel generating developments. Transport Assessment is a tool that enables delivery of policy aiming to integrate transport and land use planning."*
>
> *"All planning applications that involve the generation of person trips should provide information which covers the transport implications of the development. The level of detail will be proportionate to the complexity and scale of the impact of the proposal...For smaller developments the information on transport implications will enable local authorities to monitor potential cumulative impact and for larger developments it will form part of a scoping exercise for a full transport assessment. Development applications will therefore be assessed by relevant parties at levels of detail corresponding to their potential impact."*

Transport Assessment Guidance (2012)

Transport Scotland's Transport Assessment Guidance was published in 2012. It aims to assist in the preparation of TA reports for development proposals in Scotland such that the likely transport impacts can be identified and dealt with as early as possible in the planning process. The document sets out requirements according to the scale of development being proposed.

The document notes that a TA will be required where a development is likely to have significant transport impacts but that the specific scope and contents of a TA will vary for developments, depending on location, scale and type of development.

3.3 Local Policy and Guidance

3.4 Angus Local Plan

The current Angus Local Development Plan (LDP), adopted in September 2016, is undergoing a review. The next Local Development Plan (AngusPlan) and is likely to be adopted in 2024.

Within the LDP, a Supplemental Guidance note, "Renewable and Low Carbon Energy Development" (June 2017) is provided and is relevant to this application. The note states:

> *"3.2: Traffic Access*
>
> *Any project proposal may be required to prepare and submit a route assessment and traffic management plan, which demonstrates:-*
>
> - *How access is to be achieved;*
> - *Selected routes have been assessed and are capable of accommodating traffic generated;*
> - *Traffic management over the construction phase; and*
> - *Longer term access requirements.*
>
> *If road improvements are required, these must be approved by Angus Council Roads. Site access should allow all vehicles visiting the site to have space to manoeuvre to ensure safe access and egress.*
>
> *3.3: Public Access*
>
> *Public rights of access under the Scottish land reform legislation exist over most land. Linear access may take place over core paths or public rights of way, or over other paths and tracks, which are generally within access rights. Access rights also generally apply to areas of land such as farmland, woodland and open land, regardless of the presence of paths or tracks. Recreational water access to rivers and lochs is also within access rights and may be a particular consideration for hydro-electric schemes.*
>
> *Appropriate consideration of access will depend on the nature and location of the proposed development and existing patterns and levels of public use. New development should not significantly reduce people's ability to take recreational access. Where proposals will result in restrictions to access over core paths, public rights of way or other linear access routes, there will normally be a requirement for provision of an alternative route. Solar farms can remove large areas of land from public access, and may significantly affect people's ability to take access in their local area or to pass through an area, even in locations where there are no linear access routes and levels of public access are generally low. In such cases there may be a need to provide access corridors through or around the development. Visual impacts and other impacts on the amenity of the area will be a consideration where there is a well-used route such as a core path or an area of land which has a high recreational amenity value."*

3.5 Policy and Guidance Summary

The Proposed Development can align with the stated transport policy objectives and the design of the Site and proposed mitigation measures will ensure compliance with national and local objectives.

4. ASSESSMENT METHODOLOGY

4.1 Introduction

There are three phases of the life of the Proposed Development. These are:

- The Construction Phase;
- The Operational Phase; and
- The Decommissioning Phase.

4.2 Project Phases – Transport Overview

Of all of the three phases, the construction phase is considered to have the greatest impact in terms of transport. Construction plant, bulk materials and staff will travel to Site, these may potentially cause a significant increase in traffic on the study network.

The operational phase is restricted to occasional maintenance operations which generate significantly lower volumes of traffic that are not considered to be in excess of daily traffic variation levels on the road network.

The decommissioning phase involves fewer trips on the network than the construction phase, as elements of infrastructure are likely to be left in place (such as access tracks and platform areas), adding to local infrastructure that can potentially be used for further agricultural or leisure uses in the future.

It should be noted however the construction effects are short lived and transitory in nature.

5. BASELINE TRANSPORT CONDITIONS

5.1 Access Arrangement

Access to the Site will be taken from the public road network at Emmock Road, with material deliveries originating from the A90 corridor located to the east. The proposed access junction for the Proposed Development is shown in Annex A.

To accommodate traffic movements associated with the construction phase, inbound access to the Site will be taken from the A90 at the Moatmill access junction.

The Moatmill junction has been successfully used for deliveries associated with the nearby Seagreen offshore wind farm grid connection works. The same route, with a new extension through to Emmock Road will be used to enable access to the Site from the A90.

Traffic management will be used to ensure that the Moatmill junction is only used by construction traffic as a Left In / Left Out junction. This is being proposed to ensure that traffic does not try to turn over the A90 dual carriageway mainline lanes.

To cater for traffic exiting the construction Site, it is proposed that traffic will exit the Site and use Emmock Road to connect back to the A90 at Emmock Roundabout. The roundabout will also allow traffic originating from the north to safely U-turn and access the Moatmill junction.

No construction traffic will be permitted to access the Site via Tealing. In addition, the section of Emmock Road running south to Dundee and Old Glamis Road will be barred for Heavy Goods Vehicle (HGV) traffic.

Once construction works have been completed, Site access will be via Emmock Road from the Emmock Roundabout. Traffic flows associated with this phase are very small and restricted to circa 10 movements per day.

5.2 Study Area

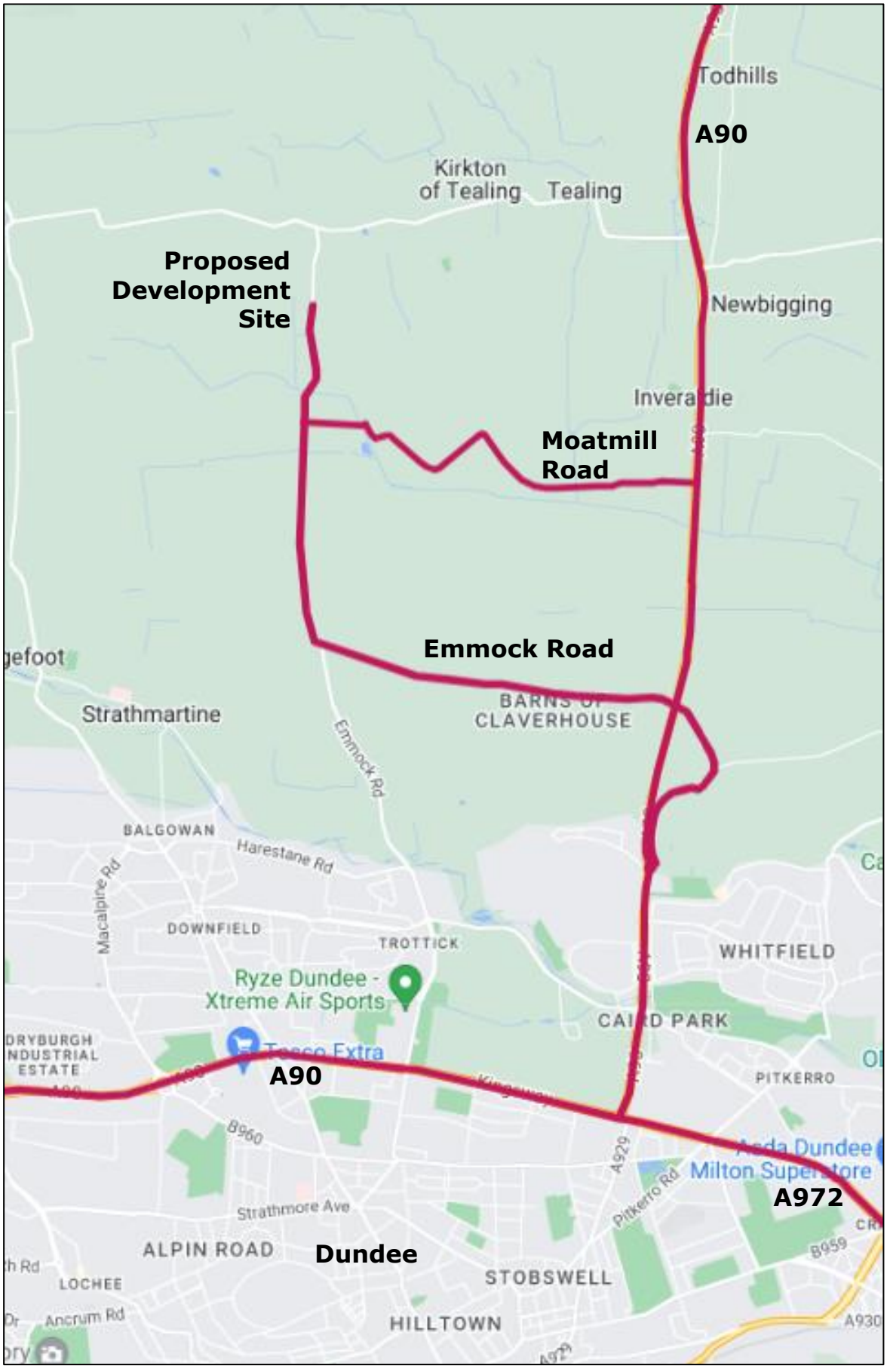
The proposed study area is based upon route that would be used by construction traffic accessing the Proposed Development. These include routes used for bulk material deliveries, staff movements and component transport.

The study area assessed is as follows:

- Emmock Road (from the Emmock Roundabout through to the Site access junction);
- Moatmill Road;
- A90 (between Forfar and Dundee);
- A90 Kingsway West; and
- A972 Kingsway East.

The proposed study area is illustrated in **Figure 5.1: Proposed Study Area**.

Figure 5.1: Proposed Study Area



5.3 Pedestrian & Cyclist Links

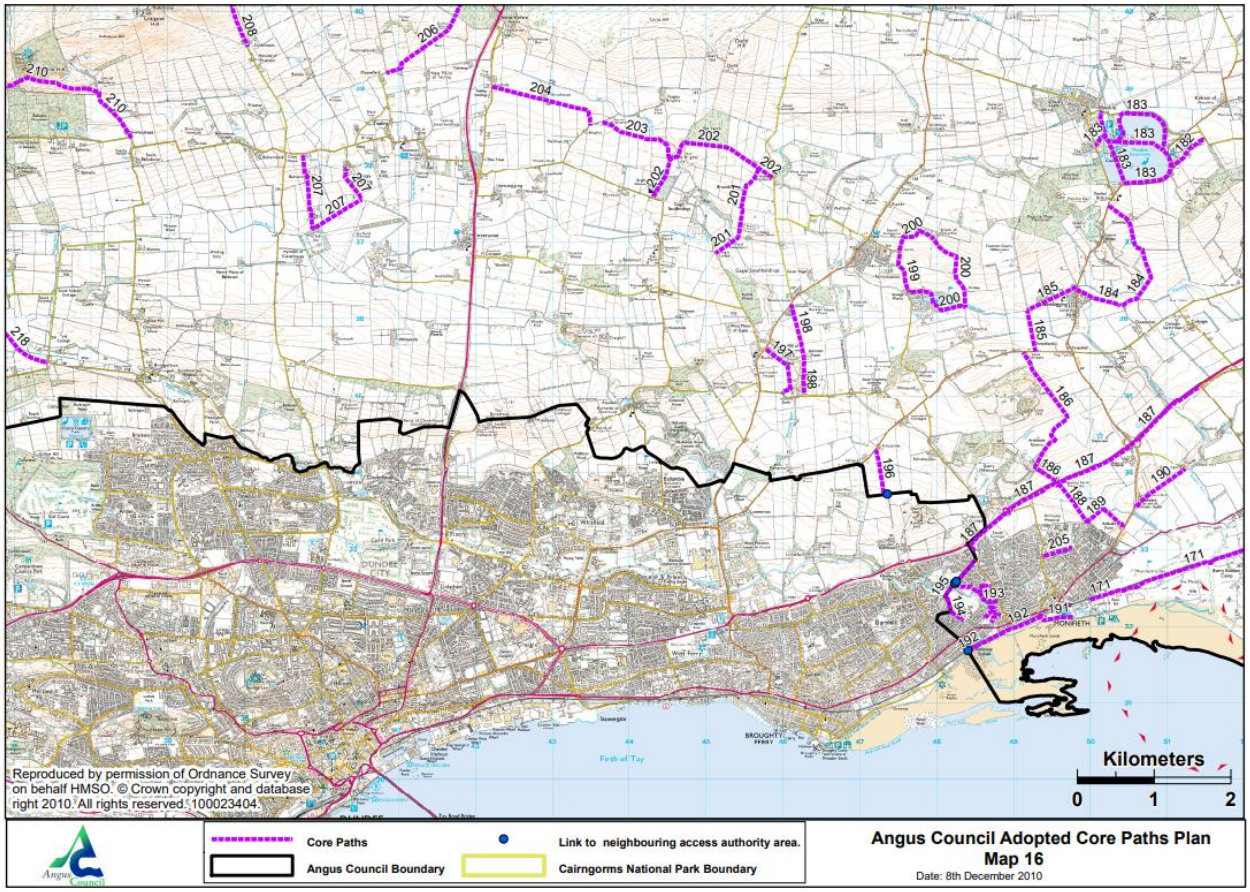
A review of the Angus Council Core Paths Plan has been undertaken. An extract for the study area is provided in **Figure 5.2: Core Path Plan Extract**. No Core Paths are present on Emmock Road, the closest path being Path 207, located on the Tealing Road which would be barred to construction traffic.

A review of the Dundee City Council Core Path also notes no Core Paths on Emmock Road within their administrative boundaries.

The A90 features footways to the south of the A90 Emmock Road Roundabout. Controlled pedestrian crossing are provided at various points, along with a pedestrian over bridge at Finavon Road.

No pedestrian facilities are provided on Emmock Road.

Figure 5.2: Core Path Plan Extract



https://www.angus.gov.uk/sites/default/files/2021-06/Map%2016.pdf

A review of the Sustrans National Cycle Network (NCN) indicates that there are no national cycle routes located in close proximity to the Site or study area.

5.4 Road Access

Emmock Road is a U class public road operated by AC. The road provides links from the A90 at the Emmock Roundabout (located in the Dundee City Council administrative area) through to its junction with the C6 Tealing Road. The road varies in its width along its length and is circa 4.5 – 5 m in width to the northwest of the A90. To the southeast of the A90, the road is circa 6 m in width.

Emmock Road connects to the A90 at Emmock Roundabout, a circa 46 m inscribed circle diameter, four arm roundabout.

Moatmill Road (U319) is operated by Angus Council and is in use for traffic associated with the Seagreen Offshore Wind Farm grid connection and substation project. The road has been upgraded to accommodate Seagreen traffic and a new bridge has been provided for Seagreen AIL.

Moatmill Road connects to the A90 trunk road at a compact at grade junction. A circa 80m deceleration lane is provided for southbound traffic turning right in Moatmill Road.

An upgraded access track is to be provided between Moatmill Road and Emmock Road to facilitate access to the Site. This will reuse existing tracks and will feature new sections of track to accommodate HGV and abnormal load traffic.

The A90 forms the trunk road connection between Perth and Aberdeen and is operated on behalf of Scottish Ministers by Transport Scotland. The road is a dual carriageway and is generally subject to a 70 mph speed limit for car and Light Goods Vehicle (LGV) traffic, with all major junctions illuminated.

The A90 turns west towards Perth at its junction with the Kingsway in Dundee. To the east, the road becomes the A972 Kingsway East. This urban dual carriageway is operated by Transport Scotland on behalf of Scottish Ministers. The road is generally subject to a 40 mph speed limit and features pedestrian crossing and overbridges.

5.5 Existing Traffic Conditions

A review of traffic flow has been undertaken using the Traffic Scotland traffic database and new Automatic Traffic Count (ATC) surveys.

ATC traffic surveys were undertaken at the following locations between the 16th and 22nd of April 2024:

1. Emmock Road (near the location of the proposed substation access junction);
2. Moatmill Road; and
3. Emmock Road (at the A90 overbridge).

Traffic Scotland data for 2024 was obtained for the following locations:

4. A90 to the south of Forfar (Count site JTC00063);
5. A90 south of Moatmill Road (Count site JTC00064);
6. A90 south of Emmock Roundabout (Count site JTC00555);
7. A90 Kingsway West (Count site JTC00557); and
8. A972 Kingsway East (Count site JTC00554).

The locations of the survey points are illustrated in **Figure 5.3: Traffic Survey Locations**. The two-way traffic flows for 2024 are summarised in **Table 5.1: 24 Hour Daily Traffic Flows (2024).**

Figure 5.3: Traffic Survey Locations

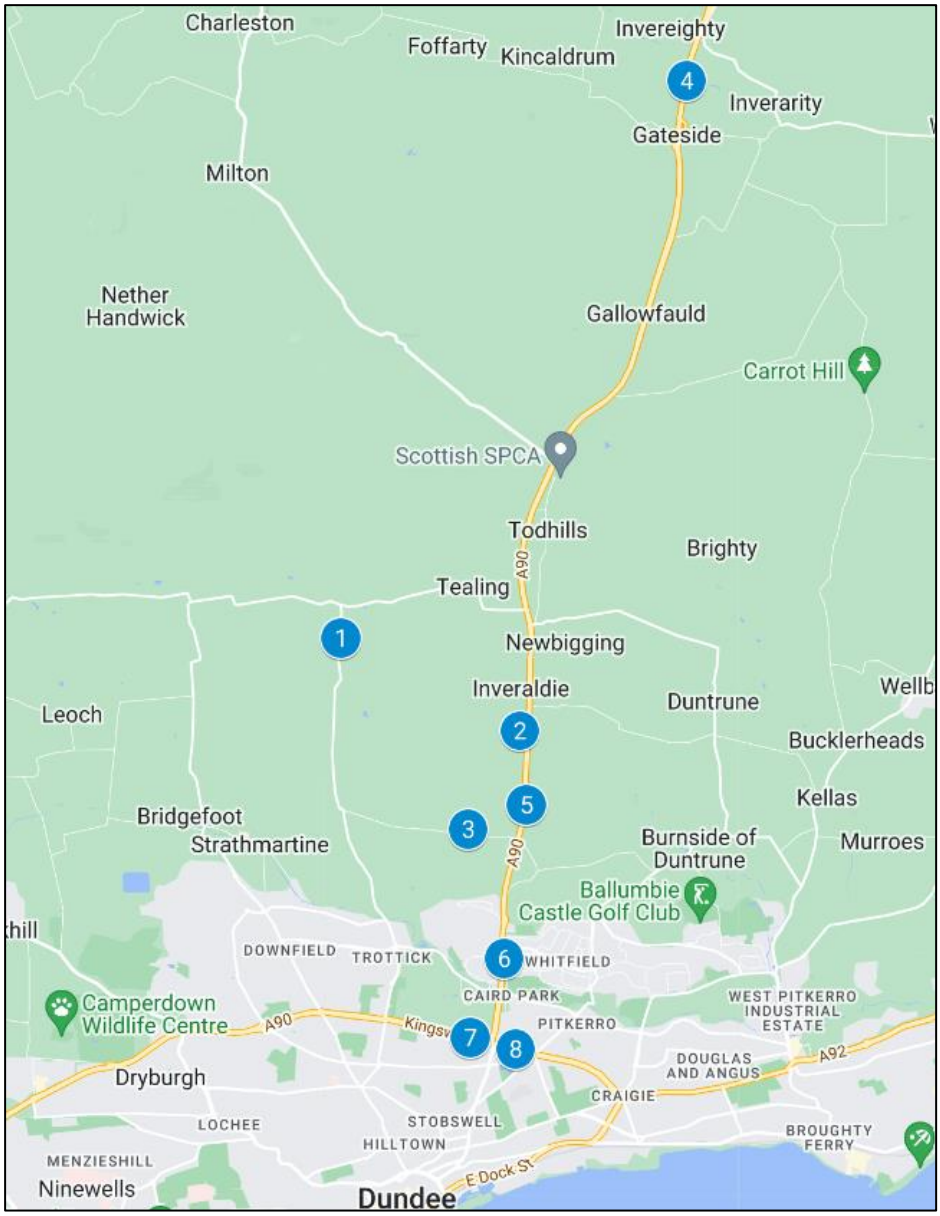


Table 5.1: 24 Hour Average Daily Traffic Flows (2024)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	716	6	722
2	Moatmill Road	108	14	122
3	Emmock Road	776	3	779
4	A90 Forfar	19,913	5,198	25,111
5	A90 south of Moatmill Road	19,371	3,392	22,763
6	A90 south of Emmock Roundabout	26,306	3,318	29,624
7	A90 Kingsway West	35,788	6,868	42,656
8	A972 Kingsway East	22,275	3,182	25,457

5.6 Accident Review

Road traffic accident data for the five-year period commencing 01 January 2018 through to the 31 December 2022 was obtained from the online resource crashmap.co.uk which uses data collected by the police about road traffic crashes occurring on British roads. Accident data recorded along the local roads within the study area, and in the vicinity of junctions joining the local road network, was analysed.

Transport Assessment guidance requires an analysis of the accident data on the road network in the vicinity of any development to be undertaken for at least the most recent 3-year period, or preferably a 5-year period, particularly if the site has been identified as being within a high accident area.

The statistics are categorised into three categories, namely “Slight” for damage only incidents, “Serious” for injury accidents and “Fatal” for accidents that result in a death.

A review of accidents trends within the immediate study area (Emmock Road and the A90 between the Tealing Junction and Emmock Roundabout) has been undertaken using data from the online resource crashmap.co.uk.

In total, three accidents occurred on Emmock Road. These included two “Slight” accidents and one “Serious” accident. Of these three incidents, one “Slight” accident occurred during winter and involved one vehicle. The “Serious” accident involved a pedal cyclist and a motorcyclist, with the remaining “Slight” accident involving a young driver.

There were no recorded accidents at the junction of the A90 and Moatmill Road during the review period.

Whilst the junction is not being used for construction traffic, the A90 Tealing junction was also reviewed. Two accidents were noted, both occurring in winter months. One “Slight” accident and one “Serious” accident were recorded, the “Serious” accident involving a motorcyclist.

Six accidents were reported at the A90 Emmock Roundabout. Of these, three occurred during winter months and four involved single vehicles, indicating that driving style was the major factor. Two accidents were classified as “Slight” and four as “Serious”. HGV traffic was involved in one “Slight” and one “Serious” accident. One “Serious” accident involved one vehicle driven by a young driver and resulted in six injuries.

There are no apparent trends that would be exacerbated by the proposed construction traffic. A Construction Traffic Management Plan (CTMP) however will be provided to assist all road users.

5.7 Future Baseline

Construction of the Proposed Development is expected to commence in 2026, if consent is granted, and is anticipated to take approximately 4 years, depending on weather conditions. The peak of construction traffic activities is expected to occur in 2027 and this has been used as the future assessment year.

To assess the likely effects during the construction and typical operational phase, base year flows were forecast by applying a National Road Traffic Forecast (NRTF) low growth factor to the 2024 flows in **Table 5.2: 24 Hour Average Daily Traffic Flows (2027).** The NRTF low growth factor for 2024 to 2027 is 1.016. This will be used in the Construction Peak Traffic Impact Assessment.

Table 5.2: 24 Hour Average Daily Traffic Flows (2027)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	727	7	734
2	Moatmill Road	109	14	124
3	Emmock Road	788	3	792
4	A90 Forfar	20,232	5,281	25,513
5	A90 south of Moatmill Road	19,681	3,446	23,127
6	A90 south of Emmock Roundabout	26,727	3,371	30,098
7	A90 Kingsway West	36,361	6,977	43,338
8	A972 Kingsway East	22,631	3,233	25,864

Please note that rounding errors can occur.

6. TRIP GENERATION & DISTRIBUTION

6.1 Trip Generation

During the construction period, the following traffic will require access to the to the Proposed Development sites:

- Staff transport, in either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete and crushed rock; and
- Abnormal loads associated with the substation development.

At the peak of construction activity, 150 staff are expected on the Site. A Staff Travel Plan will be implemented to control access and it is assumed that 60% will access the Site via minibus, 30% by van, with the rest accessing using private car access.

SSEN Transmission civil engineers have undertaken a preliminary design of the substation. Using this design a Bill of Quantities and resulting traffic generation has been undertaken. The peak of construction activities is predicted to occur in Quarter 2 of 2027 and will result in the peak daily traffic generation described below.

- Peak Car & LGV Movements (2 way): 84 vehicles;
- Peak HGV Movements (2 way): 128 vehicles;
- Peak Total Traffic (2 way): 212 vehicles.

Traffic levels will fall following the peak month. The assessment however has used the peak as the worst case scenario to ensure a robust assessment has been undertaken and that all relevant mitigation has been considered.

6.2 Traffic Distribution

Aggregate, ready mix concrete and other bulk materials are expected to be sourced from local sources, with likely suppliers located as close to the A90 corridor as possible.

Local quarries to the north and east of the Proposed Development have been considered, with a split assumed based upon input from SSEN Transmission's contractor advisors. The split of quarry traffic is 20% of bulk material to be imported from the north and 80% from sources to the east (using the A90 and A972).

General construction traffic and the supply of specialist items, including cabling, ducting, etc, is assumed to originate from the Central Belt and will access the study area via the A90 from the west.

Staff working at the Site will be based locally and it is assumed that 90% will be based to the south in Dundee and the surrounding areas. Of these, an even split has been assumed between origin / destination points between the A90 (West) and A972.

The remaining 10% of staff are assumed to access the Site from the A90 (north).

For all traffic, the following routing assumptions have been used:

- All inbound traffic will enter the Site from Emmock Road, using Moatmill Road and the A90 (northbound carriageway);
- Traffic originating from the north will undertake a U turn at Emmock Roundabout. No right hand turns from the A90 will be permitted at the Moatmill Junction;
- All traffic departing the Site, destined for the north will exit the Site via Moatmill Road and will turn left onto the A90; and
- All traffic departing the Site, destined for the south will exit the Site via Emmock Road and will join the A90 at Emmock Roundabout.

Traffic associated with the construction phase has been distributed to these routes. The resulting traffic generation is summarised in **Table 6.1: Distributed Construction Traffic (2 Way / Day)**.

Table 6.1: Distributed Construction Traffic (2 Way / Day)

Site Ref.	Survey Location	Cars & LGV	HGV	Total
1	Emmock Road (Site Access)	84	128	212
2	Moatmill Road	46	64	110
3	Emmock Road	38	64	102
4	A90 Forfar	8	26	34
5	A90 south of Moatmill Road	50	64	114
6	A90 south of Emmock Roundabout	76	102	178
7	A90 Kingsway West	38	20	58
8	A972 Kingsway East	38	82	120

Please note rounding errors can occur.

To facilitate access on Emmock Road, a number of passing places are proposed to minimise conflicts between construction traffic and other road users. These works, which could be permanent or temporary features (to be determined by AC) are outlined in the figures provided in Figures 12.1 and 12.2 in Volume 3.

6.3 Abnormal Indivisible Load Deliveries

The largest plant items for the substation would be the transformer and reactor loads. Whilst the transformer manufacturer is not fully confirmed, it is anticipated that these items would be classed as abnormal loads. Indicative dimensions of the transformer are illustrated below in **Table 6.2: AIL Dimensions**.

Table 6.2: AIL Dimensions

Transport Dimensions	Length	Width	Height	Weight
Transformer	8.5 m	4.5 m	4.7 m	170,000 kg

The transformer can be transported without all of its cooling oil to reduces its overall weight. To provide a robust review, a margin of 10% on all dimensions and properties has been included and will be used in the subsequent swept path assessment.

It is expected that the transformer will be delivered from the Port of Dundee, located to the south of the Proposed Development. Access to the Site will be via Strips of Craigie Road, A972 Kingsway East, A90, Moatmill Road and Emmock Road. A detailed Route Survey Report, featuring swept path assessments has been undertaken and is provided in Annex C.

To enable the delivery of the transformer to Site, minor modifications to the existing public road network will be required. These, along with a detailed structural review of the route will be undertaken post consent once the exact dimensions of the transformer have been established.

The detailed design pack will include swept path assessments at constrained locations and a full mitigation design pack will be provided along with ecological and drainage reviews of the proposed works.

The AIL movement will be escorted by the police at the Applicant's cost and will avoid peak network times as far as is possible. A detailed Transport Management Plan (TMP) will be prepared to assist in the operational planning of the movement of AILs.

6.4 Operational and Decommissioning Phases

The operational phase is likely to result in occasional traffic accessing the Site for maintenance and monitoring works. This is likely to be in the region of less than 10 movements per day. This level of traffic is well within the accepted limits of daily traffic variation, and as such, no separate operational assessment is required.

Prior to decommissioning of the Site, a traffic assessment would be undertaken and appropriate traffic management procedures followed.

The decommissioning phase would result in fewer trips on the road network than the construction phase as it is considered likely that elements of infrastructure such as access tracks would be left in place and structures may be broken up onsite to allow transport by a reduced number of HGV.

7. TRAFFIC IMPACT ASSESSMENT

7.1 Construction Impact

The combined average daily development traffic was added to the future year (2027) traffic data. A comparison was then made between this traffic and the baseline flows to determine the percentage increase in traffic flows. The impact is detailed in **Table 7.1: Peak Month Construction Traffic Impact**.

Table 7.1: Peak Month Construction Traffic Impact

Site Ref.	Survey Location	Cars & LGV	HGV	Total	% Car & LGV	% HGV	% Total Traffic
1	Emmock Road (Site Access)	811	135	946	11.6%	1959.8%	28.9%
2	Moatmill Road	155	78	234	42.3%	449.9%	89.2%
3	Emmock Road	826	67	893	4.8%	1917.2%	12.9%
4	A90 Forfar	20,240	5,307	25,547	0.0%	0.5%	0.1%
5	A90 south of Moatmill Road	19,732	3,510	23,242	0.3%	1.9%	0.5%
6	A90 south of Emmock Roundabout	26,803	3,473	30,276	0.3%	3.0%	0.6%
7	A90 Kingsway West	36,399	6,998	43,397	0.1%	0.3%	0.1%
8	A972 Kingsway East	22,669	3,315	25,984	0.2%	2.5%	0.5%

Please note rounding errors can occur.

With the exception of Moatmill Road, total traffic movements are not predicted to increase by more than 30% across the study network. Traffic on Moatmill Road is predicted to increase by 89.2%. Whilst this is statistically significant, the actual increase in traffic is 110 vehicles, which on average is an additional 9 vehicles per hour (assuming a 12-hour working period).

The increases in HGV flows listed above are not considered significant in terms of overall total flows and are high due to the low base HGV flows. It should also be noted the construction phase is transitory in nature.

A review of existing road capacity has been undertaken using the Design Manual for Roads and Bridges (DMRB), Volume 15, Part 5 “The NESA Manual”. The theoretical road capacity has been estimated for each of the road links for a 12-hour period that makes up the study area. The results are summarised in **Table 7.2: Theoretical Capacity Review**.

Table 7.2: Theoretical Capacity Review

Site Ref.	Survey Location	2027 Baseline	Theoretical Capacity	2027 Base + Development Flows	Spare Capacity (%)
1	Emmock Road (Site Access)	734	3,360	946	71.86%
2	Moatmill Road	124	3,360	234	93.04%
3	Emmock Road	792	3,360	893	73.41%
4	A90 Forfar	25,513	81,600	25,547	68.69%
5	A90 south of Moatmill Road	23,127	81,600	23,242	71.52%
6	A90 south of Emmock Roundabout	30,098	72,000	30,276	57.95%
7	A90 Kingsway West	43,338	72,000	43,397	39.73%
8	A972 Kingsway East	25,864	72,000	25,984	63.91%

Please note rounding errors can occur.

The results indicate there are no road capacity issues with the Proposed Development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

8. FRAMEWORK CONSTRUCTION TRAFFIC MANAGEMENT PLAN

8.1 Proposed Measures

The following measures would be implemented through a Construction Traffic Management Plan (CTMP) during the construction phase. The CTMP would be agreed with AC prior to construction works commencing:

- Where possible the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Site worker transport and travel arrangement plan, including transport modes to and from the work site (including pick up and drop off times);
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance, depending on the views of AC;
- Appropriate traffic management measures would be put in place on Emmock Road at the Site access junction to avoid conflict with general traffic, subject to the agreement of AC. Typical measures would include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;
- A 40mph speed limit is placed on the A90 northbound to improve safety for all road users in the vicinity of the Moatmill Road junction. In addition, no Right Turn (diagram 612) signs would be placed at the junction to ban construction traffic from crossing A90 traffic streams. Diversion signs using Emmock Roundabout would be provided;
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary speed limit of 20 mph for all construction vehicles travelling on the Emmock Road and Moatmill Road;
- All drivers would be required to attend an induction to include:
    - A tool box talk safety briefing;
    - The need for appropriate care and speed control;
    - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations through the urban areas); and
    - Identification of the required access routes and the controls to ensure no departure from these routes.

AC may require an agreement to cover the cost of abnormal wear and tear on roads within the study area. Video footage of the pre-construction phase condition of the construction vehicle's route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Council. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to public traffic, would be repaired immediately.

Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.

There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

8.2 Emmock Road Passing Areas

To improve access on Emmock Road, a series of passing places will be created. The location and general design of these are illustrated in Figures 12.1 and 12.2 in Volume 3.

The passing places will allow for a 6 m wide passing area to be provided and will feature a minimum of 7 m long tapers at either end. The locations of the laybys will be agreed with AC and secured via a suitably worded planning condition.

A layby is proposed at the Fithie Burn bridge to ensure safe access over this structure.

The proposed Site access junction will feature road widening to allow traffic to pass in safety. The junction from the private track connecting Moatmill Road and Emmock Road (to the north of Craigowl Farm) will also be widened to allow passing traffic.

8.3 Public Information

The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

8.4 Pedestrian Management

The Principal Contractor would ensure that speed limits are always adhered to by their drivers and associated subcontractors. This is particularly important within close proximity to the core path and at crossing points. Advisory speed limit signage would also be installed on approaches to areas where core path users may interact with construction traffic.

Signage would be installed on the Site exit that makes drivers aware of local speed limits and reminding drivers of the potential presence of pedestrians and cyclists in the area. This would also be emphasised in weekly tool box talks.

8.5 AIL Management Measures

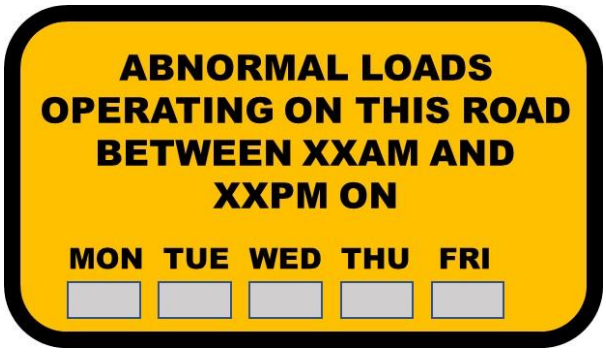
There are a number of traffic management measures that could help reduce the effect of the proposed six abnormal load convoys.

All abnormal load deliveries will be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys will travel in the early morning periods, before peak times while general construction traffic will generally avoid the morning and evening peak periods.

The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.

Advance warning signs will be installed on the approaches to the affected road network. Information signage could be installed to help assist drivers and an example is illustrated in **Figure 8.1: Example Information Sign**. Flip up panels (shown in grey) will be used to mask over days where convoys would not be operating. When no convoys are moving, the sign would be bagged over by the traffic management contractor.

Figure 8.1: Example Information Sign



This signage will assist in helping improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist).

The location and numbers of signs will be agreed post consent and will form part of the wider Traffic Management Proposal for the Proposed Development.

The Abnormal Load Transport Management Plan will also include:

- Procedures for liaising with the emergency services to ensure that police, fire, and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates, and agreeing communication protocols and lay over areas to allow overtaking;
- A diary of proposed delivery movements to liaise with the communities to avoid key dates;
- A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
- Proposals to establish a construction liaison committee to ensure the smooth management of the project. This will provide a public interface with the Applicant, the construction contractors, the local community, and if appropriate, the police. This committee will form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

8.6 Public Information

Information on the convoys will be provided to local media outlets such as local papers and local radio to help assist the public.

Information will relate to expected vehicle movements from the port of entry through to the Site access junction. This will assist residents becoming aware of the convoy movements and may help reduce any potential conflicts.

The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

8.7 Convoy System

A police escort will be required to facilitate the delivery of the predicted loads. The police escort will be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort will warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy will remain in radio contact at all times where possible.

The abnormal loads convoys will be no more than one component long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

The times in which the convoys would travel will be agreed with Police Scotland who have sole discretion on when loads can be moved.

8.8 Operational Phase Mitigation

Site entrance roads would be well maintained and monitored during the operational life of the Proposed Development. Regular maintenance would be undertaken to keep the Site access track drainage systems fully operational and to ensure there are no run-off issues onto the public road network.

9. SUMMARY & CONCLUSIONS

Pell Frischmann (PF) has been commissioned by LUC, on behalf of SSEN Transmission, to undertake a Transport Assessment (TA) for a proposed electrical substation at Emmock.

The assessment has reviewed access to the Site and likely traffic generation associated with the construction phase. It is estimated that 212 daily trips would be associated with the Proposed Development at the peak of construction resulting in a maximum impact of 89.2% on Moatmill Road.

A series of mitigation measures and management plans have been proposed to help mitigate and offset the impacts of both the construction and operational phase traffic flows. This includes layby works on Emmock Road and banning right turns at the Moatmill Road / A90 junction.

No link capacity issues are expected on any of the roads assessed due to the additional movements associated with the Proposed Development. The effects of construction traffic are temporary in nature and are transitory.

ANNEX A: SITE ACCESS JUNCTION

DO NOT SCALE FROM DRAWING

NOTES

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KEY

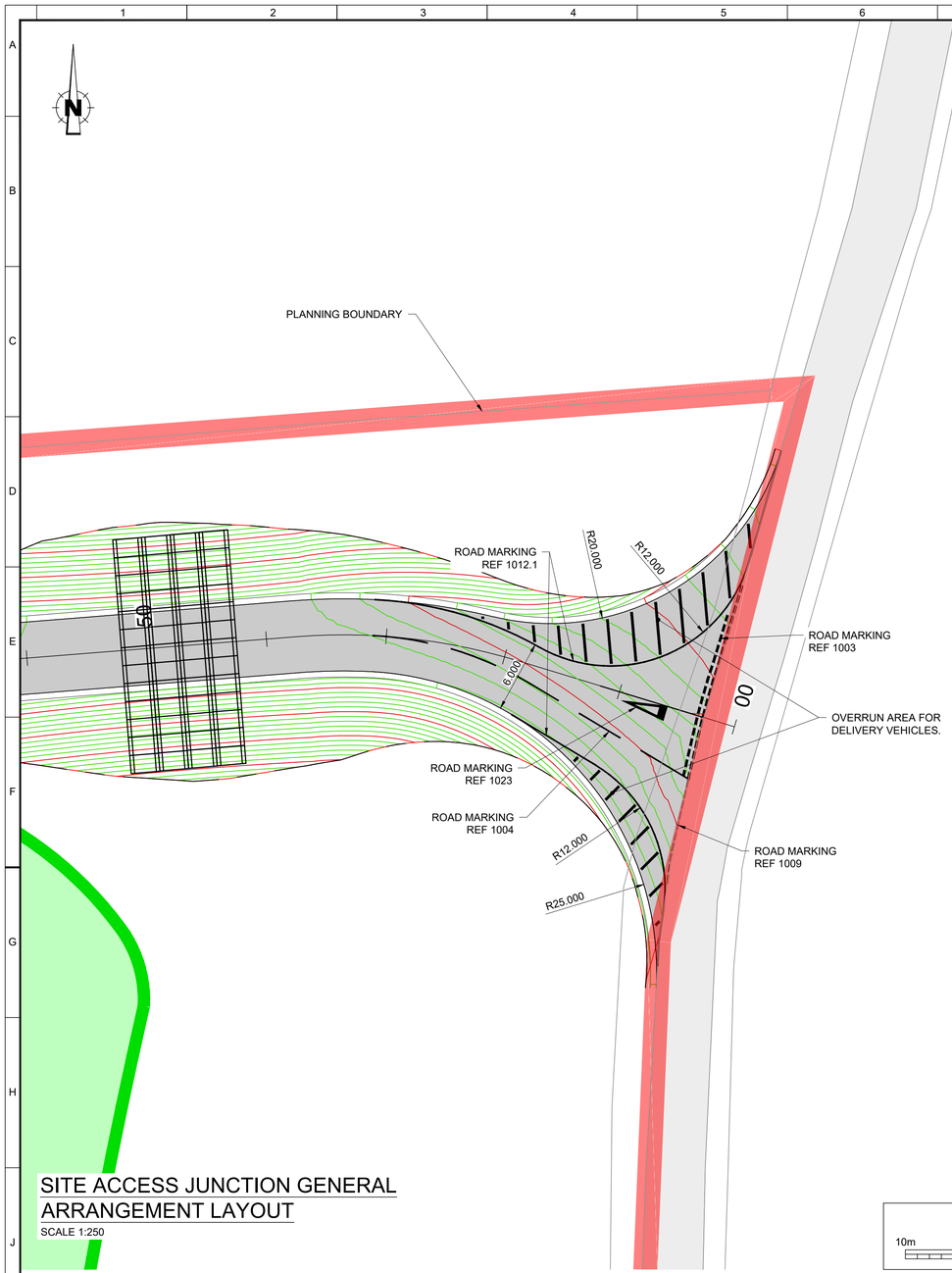
PLANNING APPLICATION BOUNDARY (AREA - c. 77.86Ha)

JUNCTION KEY

EXISTING CARRIAGEWAY

PROPOSED CARRIAGEWAY

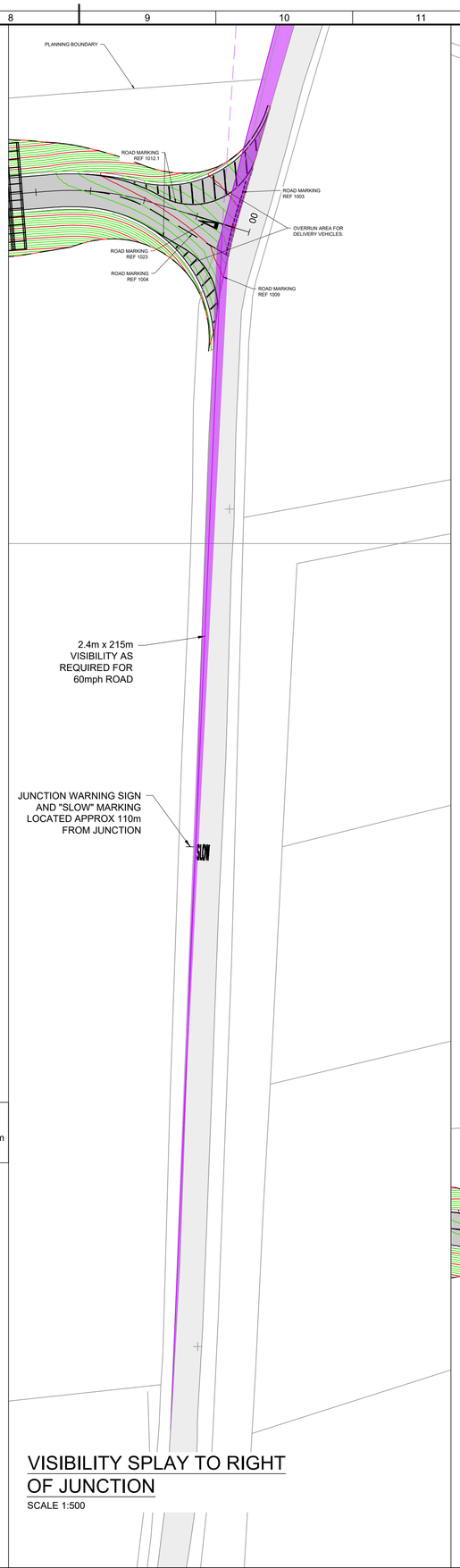
VISIBILITY SPLAY CLEAR AREA



SITE ACCESS JUNCTION GENERAL ARRANGEMENT LAYOUT

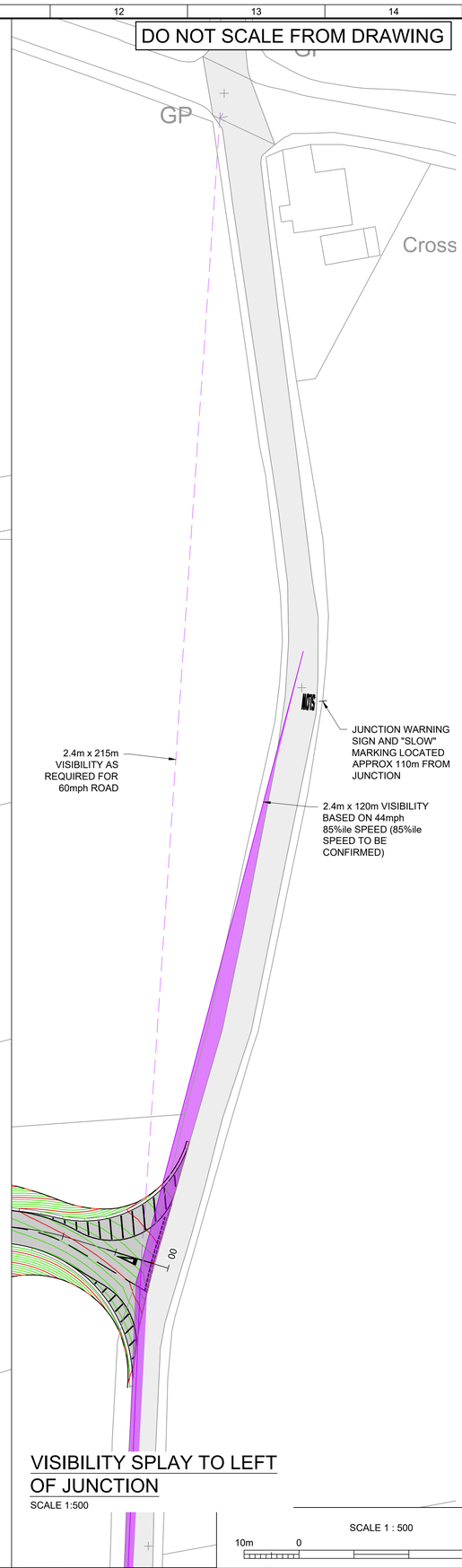
SCALE 1:250

SCALE 1 : 250
10m 0 10m



VISIBILITY SPLAY TO RIGHT OF JUNCTION

SCALE 1:500



VISIBILITY SPLAY TO LEFT OF JUNCTION

SCALE 1:500

SCALE 1 : 500
10m 0 40m

SIGN REF 7014
(120mm 'X'-HEIGHT, LOCATED 110m FROM JUNCTION, AND REMOVED 3 MONTHS AFTER COMPLETION OF WORKS)

SIGN REF 506.1
(900mm HIGH, LOCATED 110m FROM JUNCTION)

MARKING REF 1024
(2.8m HIGH, LOCATED 110m FROM JUNCTION)

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REV	DATE	DRWN BY	CHKD BY	APPD BY	REMARKS
P01	08.11.24	AP	ED	ED	FOR PLANNING APPLICATION ONLY

Scottish & Southern Electricity Networks
TRANSMISSION

PROJECT TITLE
LT382 - EMMOCK 400 kV SUBSTATION

DRAWING TITLE
SITE ACCESS JUNCTION
GENERAL ARRANGEMENT AND VISIBILITY SPLAYS
(PLANNING APPLICATION)

SSENT DRAWING NUMBER
EMMO4-LT382-OMSI-ROAD-XX-LAY-C-0003

REV	STATUS	SIZE	SCALE	SHEET NUMBER
P01	S4	A1	AS SHOWN	01 of 01

ANNEX B: EMMOCK ROAD WORKS

340

Scottish & Southern Electricity Networks
TRANSMISSION

LUC

735000m.N

340000m.E

Scale @ A3: 1:18,000

0 0.5 1 km

Emmock red line boundary

Proposed new or improved junction

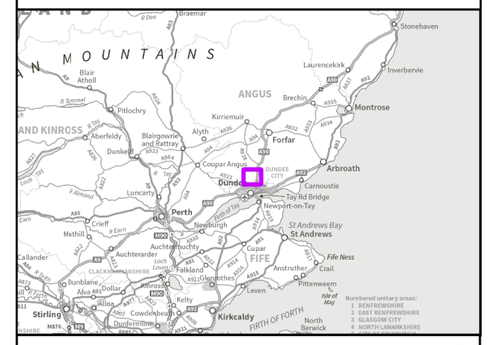
Indicative layby position

Construction access (lines offset for visual purposes)

Bulk Materials: Inbound to Site

HGV inbound access from the south

HGV inbound access from the north



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Project No: LT382

Project: Emmock 400 kV Substation

Title:

Construction Access - Inbound

Drawn by: IB

Date: 15/11/2024

Figure: 12.1

340

Scottish & Southern Electricity Networks
TRANSMISSION

LUC

Emmock red line boundary

Proposed new or improved junction

Indicative layby position

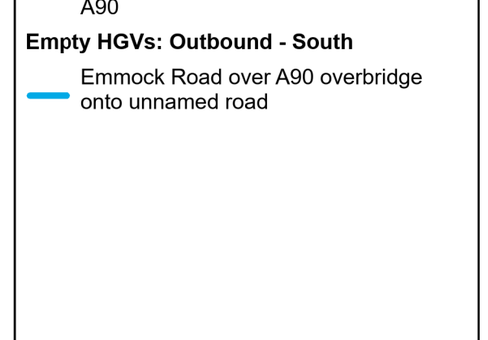
Construction access (lines offset for visual purposes)

Bulk Materials: Outbound - North

Emmock Road to Moatmill Road and A90

Empty HGVs: Outbound - South

Emmock Road over A90 overbridge onto unnamed road



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Title:

Construction Access - Outbound

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Date: 15/11/2024

Figure: 12.2

735000m.N

340000m.E

Scale @ A3: 1:18,000

0 0.5 1 km

ANNEX C: AIL REPORT

Accelerated Strategic Transmission Investment (ASTI) Framework
Emmock 400 / 275kV Substation

Route Feasibility Report
for SGT Delivery from Alyth Substation and Forth Ports

Company	Project Number	Document Number
SSEN	LT000382	EMMO4-LT382-OMSI-ZZ-ZZ-RPT-H-0001
Omexom	692313	MN-692313-PM-RPT-001
Allelys	A242453	

Revision History

Omexom	SSEN	Status	Purpose	Prepared / Drawn / Designed	Checked	Approved	Date
P01	P01	S1	For Coordination	SJW	SJW	SJW	21-Jun-24

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Cnoclee Environmental Services

Route Feasibility Report

For the delivery of

114 te Split Phase SGT from Alyth Substation to Emmock Substation

& 170 te SGT from Forth Ports (Dundee) to Emmock 400 kV Substation

A242453

Allelys

REV	DATE	REASON	ISSUED BY
0	17-Jun-24	FIRST ISSUE	SJW

1. Executive Summary

Allelys have been commissioned by Cnoclee Environmental Services to provide a feasibility survey for the transport of 114 te Split Phase Super Grid Transformers (SGT) from Alyth Substation to Emmock Substation and 170 te SGT from Forth Ports (Dundee) to Emmock Substation.

The objective of this document is to clearly outline a workable delivery concept for the enclosed cargo whilst adhering to UK legislation and equipment capabilities. Our recommendations are based on a wealth of knowledge and experience, however, are subject to relevant permissions at the time of delivery.

The nominated transport configuration for delivery of the 114 te split phase SGT is a 6-axle bed 6-axle trailer and for the 170 te SGT is a 16-axle Girder Frame Trailer (GFT), subject to structural assessments. Both transport configurations are classified as Special Order due to gross weights of 168 te and 263 te respectively.

As the transport is classified as Special Order, in accordance with the Water Preferred Policy, Forth Ports (Dundee) has been considered as Port Of Delivery (POD) for the 170 te SGT as it is the closest marine facility to site capable of dealing with this size of cargo.

It is expected that Prince Charles Wharf be the nominated quay for use as it has a minimum low water depth of 9 m and is therefore suitable for use by deep sea vessels. Offload of the SGT from the delivery vessel by crane is available due to a maximum Ground Bearing Pressure (GBP) of 80 te/m^2. There is also sufficient quayside area to mobilise the 16-axle GFT ready for loading and onward movement of the SGT to site.

Route 1, from Alyth Substation to Emmock Substation, is not currently considered feasible in terms of structural capacity, as Perth & Kinross Council and Angus Council have advised that seven structures require further structural assessment. The LH turn from the unclassified road onto B954 is not physically negotiable due to the presence of a culvert on the B954, therefore, the 6 bed 6 trailer is to perform a shunt manoeuvre at this junction. In order for the vehicle to turn right onto the B954 northbound before travelling southbound and on to site, third-party land uptake is required to the inside of the turn with carriageway widening works required to accommodate the vehicle track. The remainder of the route to the A90 junction with the unclassified road into Tealing village is considered negotiable with Police Escort, Temporary Traffic Regulation Orders (TTRO) and street furniture removals. However, Route 1 from Tealing village to site is not physically negotiable through Tealing village for either transport configuration and at Pump Cottage Crossroads due to the need for third-party land uptake in multiple locations, therefore, this section of Route 1 is not to be used for the delivery of both the 114 te split phase SGT and 170 te SGT.

Route 2, from Forth Ports (Dundee) to the A90 junction for Tealing village, is currently considered feasible in terms of structural capacity although Dundee City Council have advised that structure no. MD/039 Stannergate is to be crossed under caution with no other traffic to be on the structure at the same time as the 16-axle GFT and the vehicle must also cross the structure in the centre of the carriageway. The remainder of Route 2 until it joins Route 1 at Tealing village is considered negotiable with Police Escort, TTROs and street furniture removals although the section of the route through Tealing Village to site is again not feasible for the vehicle, therefore, Route 2 is not to be used.

Route 3, from Forth Ports (Dundee) to site via Old Glamis Road, is not currently considered structurally feasible due to the need to further assess structure no. U322-001 Balmuir, as advised by Angus Council. The span of this structure is too large for overbridging to be an option should the results of the structural assessment be negative; therefore, this structure is to be considered a risk to delivery of both the 114te split phase SGT and 170 te SGT. An additional structure over Fithie Burn on the unclassified road on approach to site has been noted that isn't shown on the ESDAL portal. It is assumed that this structure is owned/managed by Angus Council who have been approached to confirm the current capacity of this asset, however, they are yet to respond at the time of writing this report. Should this structure fail the Angus Council basic checks and further structural assessment, it is suitable for overbridging and therefore doesn't pose a high risk to delivery of the 114 te Split Phase SGT and 170 te SGT. The LH turn from Emmock Road onto an unclassified road and RH bend on the unclassified road immediately after requires minor carriageway widening to accommodate the vehicle tracks with vegetation clearance also required. The rest of Route 3 is considered negotiable with Police Escort, TTROs, additional tractor unit(s) and street furniture removals.

Route 4, from the A90 junction for Tealing village Forfar Road Junction, is not currently considered structurally feasible as at the time of writing this report Transport Scotland/Amey (North East) have not yet responded regarding the current capacity of structure no. A90 390 Newbigging, however, this structure was cleared for use by the 170 te SGT loaded onto 16-axle GFT, which has a higher axle load than the 114 te split phase SGT loaded onto the 6 bed 6 trailer so it is assumed that the structure will be cleared for the 6 bed 6 trailer as well. Route 4 then joins Route 3 at Forfar Road Junction for the final delivery of the 114 te split phase SGT to site.

Swept path assessments (SPA) of the proposed Emmock Substation site access point and layout design have been carried out and show that widening of the site access road is required at the junction from the unclassified road, around a LH bend on approach to site and also around a RH bend just prior to the external site access gate. The external site access gate is also to be widened to allow delivery of the 170 te SGT loaded onto the 16-axle GFT. The SGT2 & 3 plinth access roads are to be lengthened to allow delivery of the units in-line with the plinth centrelines. It is not possible for both units to be delivered directly onto plinth by either the 6bed6 trailer or the 16-axle GFT, therefore, it is assumed that final movement of both units be made by hydraulic jacking and skidding although this operation has not been explored as part of this report. The SGT1 plinth access road also needs to be lengthened to allow delivery in-line with the plinth centreline, however, items of auxiliary site equipment located to the north of the end of the road would need to be relocated to permit this. Therefore, a trailer interchange of SGT1 from the delivery vehicle onto Self-Propelled Modular Trailer (SPMT) is required to allow final delivery onto the plinth.

Table of Contents

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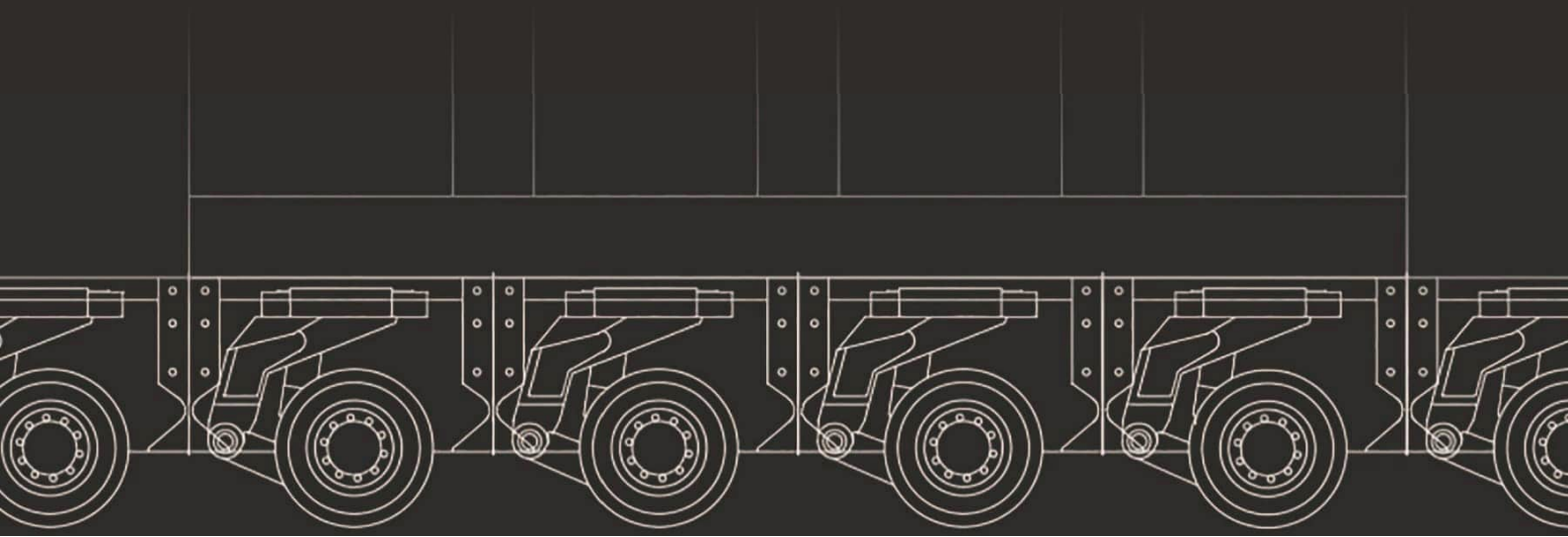

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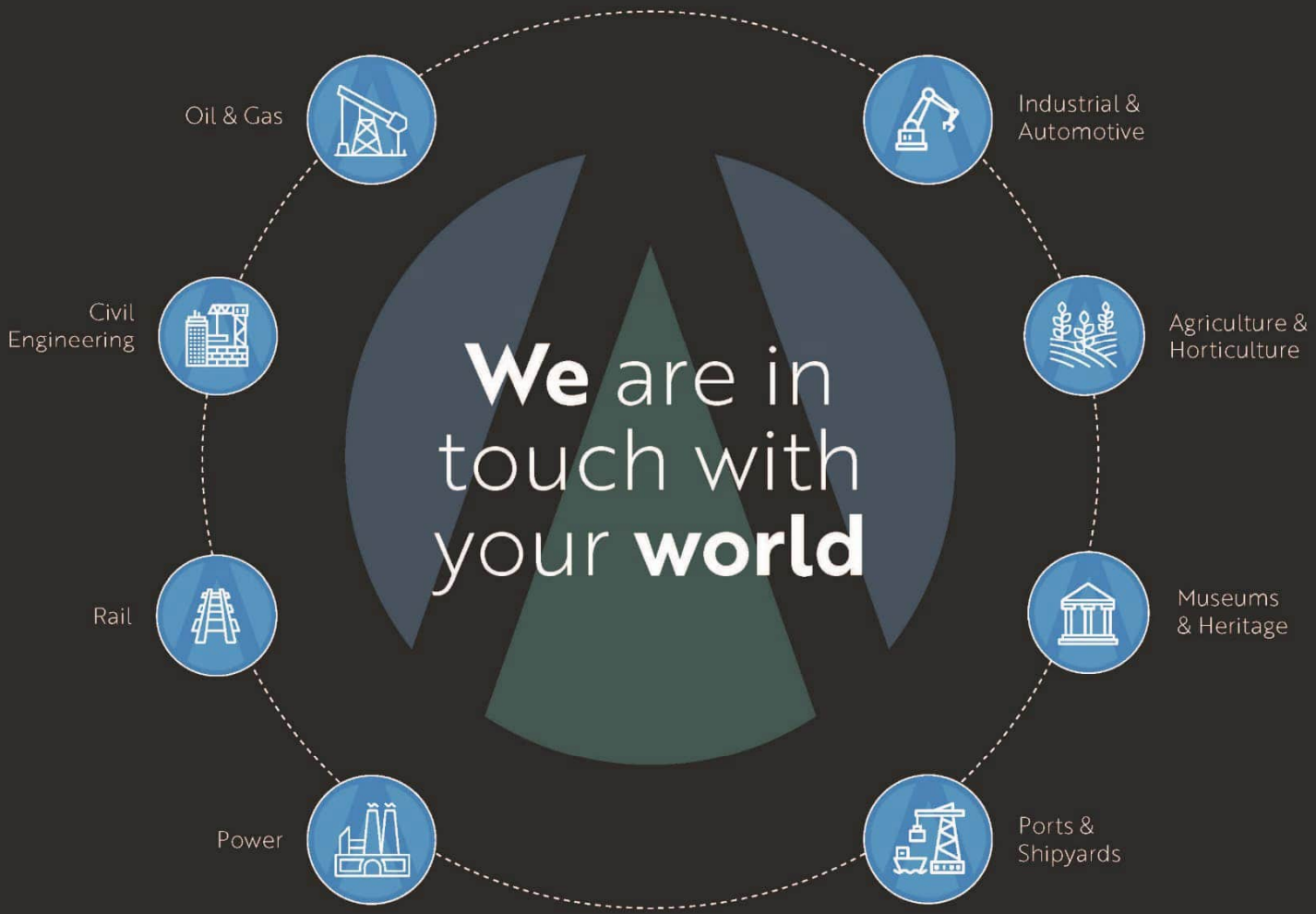
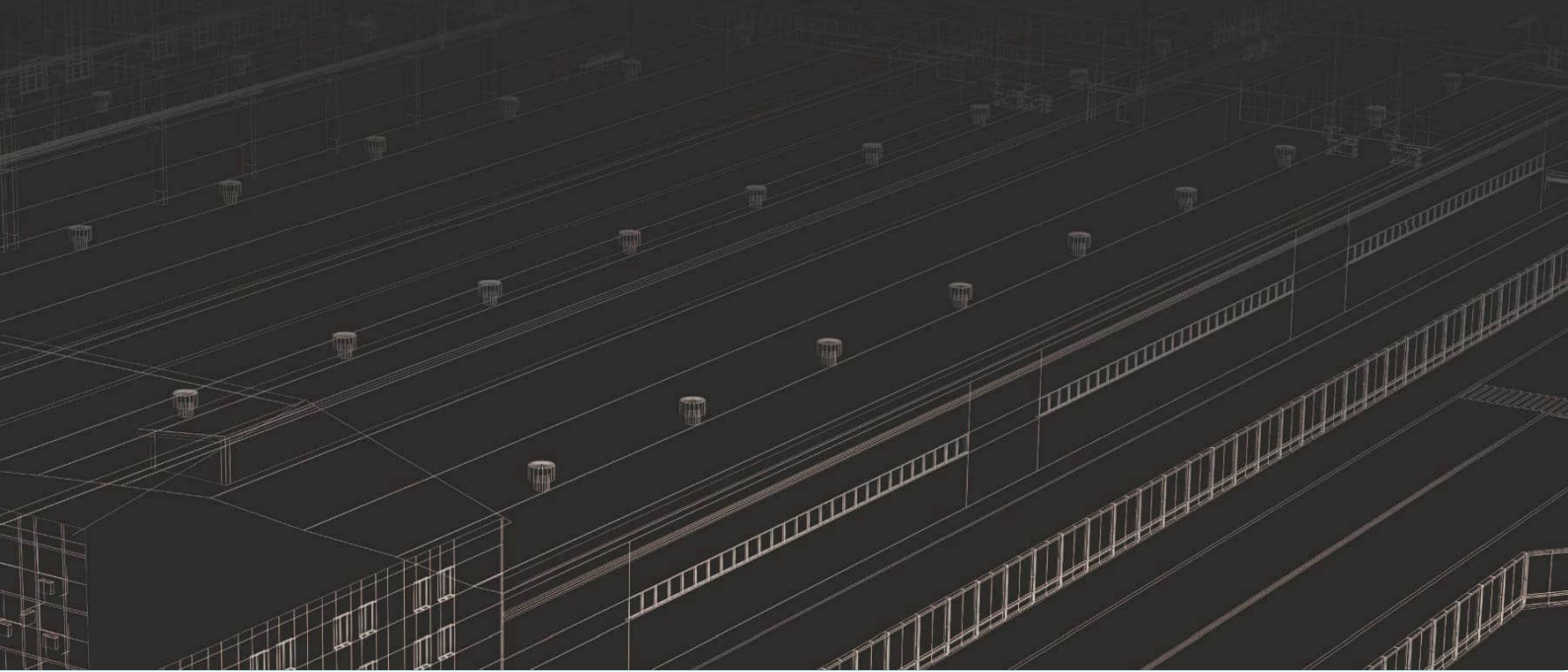




2. Introduction

2.1. Allelys have been commissioned by Cnoclee Environmental Services to provide a feasibility survey for the transport of 114 te Split Phase Super Grid Transformers (SGT) from Alyth Substation to Emmock Substation and 170 te SGT from Forth Ports (Dundee) to Emmock Substation.

2.2. The objective of this document is to clearly outline a workable delivery concept for the enclosed cargo whilst adhering to UK legislation and equipment capabilities. Our recommendations are based on a wealth of knowledge and experience, however, are subject to relevant permissions at the time of delivery.

3. Definitions & Terminology

3.1. Definition of Abnormal Indivisible Load (AIL)

3.1.1. The Department of Transport, of which the National Highways (NH) is an executive agency, 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

3.2.1. 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.

3.2.2. 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.

3.2.3. 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).

3.3. *Abbreviations*

AIL	Abnormal Indivisible Load
C&U	Construction and Use
GBP	Ground Bearing Pressure
GFT	Girder Frame Trailer
LHA	Local Highway Authority
NH	National Highways
POD	Port Of Delivery
SGT	Super Grid Transformer
STGO	Special Types General Order
SPA	Swept Path Assessment
SPMT	Self-Propelled Modular Trailer
TTRO	Temporary Traffic Regulation Order

4. Cargo Summary

4.1. The below information has been supplied by Cnoclee Environmental Services.

Table 1 Cargo Details

Description	Qty	Dimensions [mm]	Weight [kg]
Split Phase SGT	1	L 4,800 x W 3,800 x H 5,160	114,000
Generic 400/275/33 kV SGT	1	L 8,500 x W 4,500 x H 4,700	170,000

5. Port of Delivery

5.1. As the transport is classified as Special Order, in accordance with the Water Preferred Policy, Forth Ports (Dundee) has been considered as Port Of Delivery (POD) for the 170 te SGT as it is the closest marine facility to site capable of dealing with this size of cargo.

5.2. It is expected that Prince Charles Wharf be the nominated quay for use as it has a minimum low water depth of 9 m and is therefore suitable for use by deep sea vessels. Offload of the SGT from the delivery vessel by crane is available due to a maximum Ground Bearing Pressure (GBP) of 80te/m^2. There is also sufficient quayside area to mobilise the 16-axle GFT ready for loading and onward movement of the SGT to site.

6. Locations

6.1. Delivery Address

6.1.1. Emmock Substation is located 17.4 miles south of Alyth Substation.

6.1.2. Emmock Substation is located 6.2 miles north of Forth Ports (Dundee).

6.1.3. The general condition of the local roads is good; however, some junctions require further assessment. See Section 9 for more detail.

6.2. Route Details

6.2.1. Route 1 is as follows, as shown in Figure 1:

Alyth Substation (collection point)
LH turn onto **unclassified road**
LH turn from **unclassified road** onto **B954**
LH turn from **B954** onto **A94**
RH turn from **A94** onto **A928**
RH turn from **A928** onto **A90**
RH turn from **A90** onto **unclassified road**
LH turn from **unclassified road** onto **unclassified road**
RH turn from **unclassified road** onto **proposed site access road**
Emmock Substation (delivery point)

6.2.2. Route 2 is as follows, as shown in Figure 1:

Forth Ports (Dundee) (POD)
Straight on from **Prince Charles Wharf access gate** onto **Broughty Ferry Rd**
Straight on from **Broughty Ferry Rd** onto **Strips of Craigie Rd** at **Broughty Ferry Rd/A930 /Strips of Craigie Rd rbt**
Straight on from **Strips of Craigie Rd** onto **A972** at **Scott Fyffe Roundabout**
Straight on at **A972/Moffat Rd rbt** continuing on **A972**
Straight on at **A972/Pitkerro Rd rbt** continuing on **A972**
RH turn from **A972** onto **A90** at **Forfar Road Junction**
Straight on at **Claverhouse Roundabout** continuing on **A90**
Straight on at **Emmock Roundabout** continuing on **A90**
LH turn from **A90** onto **unclassified road** *(Route 2 joins Route 1)*

6.2.3. Route 3 is as follows, as shown in Figure 1:

(Route 3 departs Route 2)
Straight on from **A972** onto **A90** at **Forfar Road Junction**
RH turn from **A90** onto **Old Glamis Rd** at **Old Glamis Road Junction**
Straight on at **Old Glamis Rd/Forres Ave rbt** continuing on **Old Glamis Rd**
Straight on at **Old Glamis Rd/Balgowan Ave rbt** continuing on **Old Glamis Rd**
RH turn from **Old Glamis Rd** onto **Emmock Road**
LH turn from **Emmock Rd** onto **unclassified road**
LH turn from **unclassified road** onto **proposed site access road**
Emmock Substation (delivery point)

6.2.4. Route 4 is as follows, as shown in Figure 1:

(Route 4 departs Route 1)
Straight on at **A90/unclassified road junction** continuing on **A90**
Straight on at **Emmock Roundabout** continuing on **A90**
Straight on at **Claverhouse Roundabout** continuing on **A90**
RH turn at **Forfar Road Junction** continuing on **A90** *(Route 4 joins Route 3)*

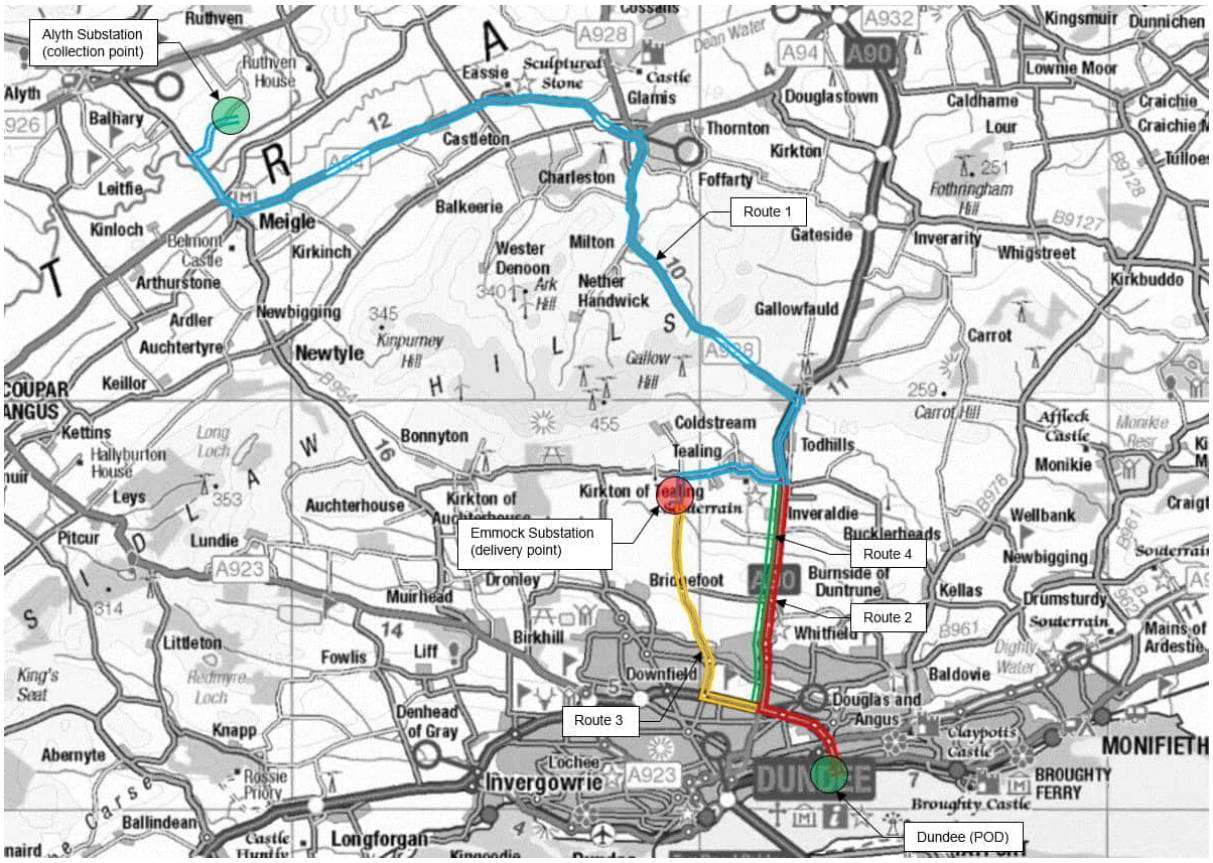


Figure 1 Emmock Substation delivery routes

6.2.5. Full maps of the route are included under Appendix B.

6.2.6. Police Scotland would be required to provide full escort for the duration of the movement.

7. Equipment

7.1. Delivery Vehicle

7.1.1. For this assessment, it is proposed that the 114 te Split Phase SGT be transported on a 6-axle bed 6-axle trailer, as seen in Figure 2.

7.1.2. This transport arrangement has a gross weight 167.6 te, width 4.16 m, height 5.36 m and axle line load 13.97 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. ALL-A242453-TA-01 is included under Appendix A.

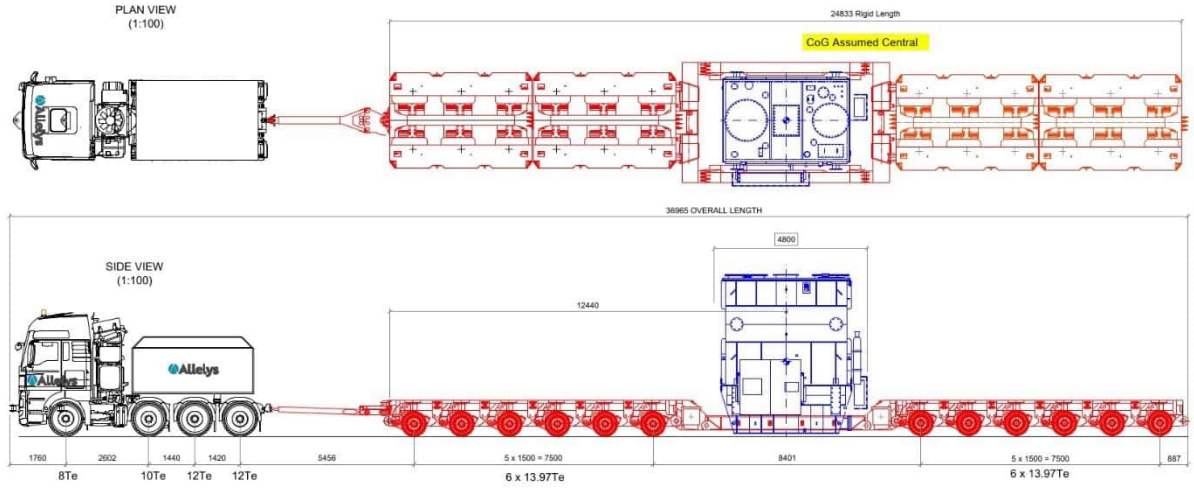


Figure 2 114 te Split Phase SGT loaded onto 6bed6 trailer

7.1.3. For this assessment, it is proposed that the 170 te SGT be transported on a 16-axle GFT, as seen in Figure 3.

7.1.4. This transport arrangement has a gross weight 263.4 te, width 5.16 m, height 4.9 m and axle line load 16.46 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. ALL-A242453-TA-02 is included under Appendix A.

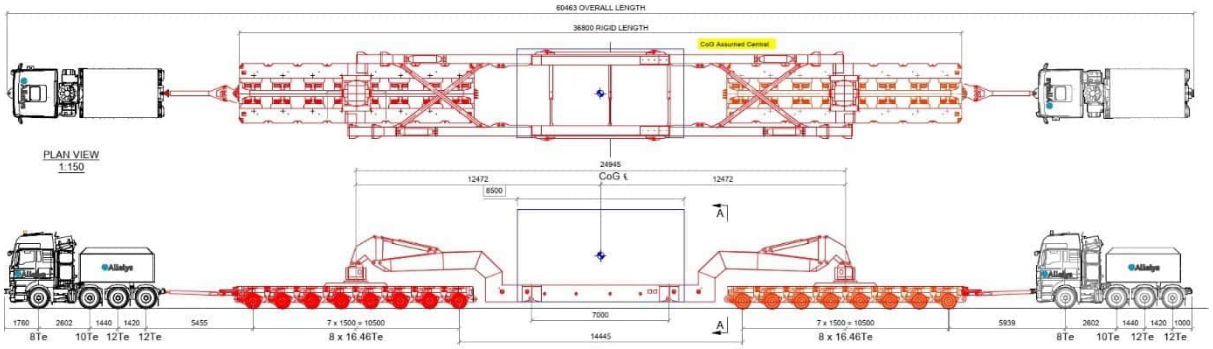


Figure 3 170 te SGT loaded onto 16-axle GFT

8. Structures Details

8.1. Perth & Kinross Council, Angus Council, Transport Scotland/Amey (North East Scotland) and Dundee City Council have been consulted as Local Highway Authorities (LHA) to advise on the current structural capacity of the routes.

8.2. Route 1, from Alyth Substation to Emmock Substation, is not currently considered feasible in terms of structural capacity, as Perth & Kinross Council and Angus Council have advised that seven structures require further structural assessment.

8.3. Route 2, from Forth Ports (Dundee) to the A90 junction for Tealing village, is currently considered feasible in terms of structural capacity although Dundee City Council have advised that structure no. MD/039 Stannergate is to be crossed under caution with no other traffic to be on the structure at the same time as the 16-axle GFT and the vehicle must also cross the structure in the centre of the carriageway.

8.4. Route 3, from Forth Ports (Dundee) to site via Old Glamis Road, is not currently considered structurally feasible due to the need to further assess structure no. U322-001 Balmuir, as advised by Angus Council. The span of this structure is too large for overbridging to be an option should the results of the structural assessment be negative; therefore, this structure is to be considered a risk to delivery of both the 114te split phase SGT and 170 te SGT.

8.5. An additional structure over Fithie Burn on the unclassified road on approach to site has been noted that isn't shown on the ESDAL portal. It is assumed that this structure is owned/managed by Angus Council who have been approached to confirm the current capacity of this asset, however, they are yet to respond at the time of writing this report. Should this structure fail the Angus Council basic checks and further structural assessment, it is suitable for overbridging and therefore doesn't pose a high risk to delivery of the 114 te Split Phase SGT and 170 te SGT.

8.6. Route 4, from the A90 junction for Tealing village Forfar Road Junction, is not currently considered structurally feasible as at the time of writing this report Transport Scotland/Amey (North East) have not yet responded regarding the current capacity of structure no. A90 390 Newbigging, however, this structure was cleared for use by the 170 te SGT loaded onto 16-axle GFT, which has a higher axle load than the 114 te split phase SGT loaded onto the 6 bed 6 trailer so it is assumed that the structure will be cleared for the 6 bed 6 trailer as well.

8.7. Full details of all structures on both routes are included in Tables 2, 3, 4 & 5 in Appendix C.

9. Route Survey

9.1. Route Survey Reference Sheet Notes

9.1.1. 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

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

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

9.2. Route Survey High Level Notes

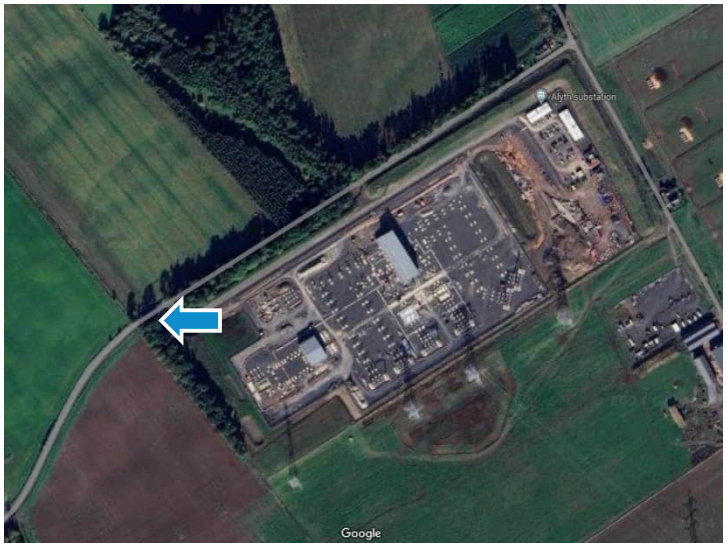
9.2.1. Route 1 from Alyth Substation to A90 is single carriageway, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from Alyth Substation and exited onto the A90. The route is then single carriageway from the A90/unclassified road junction to site, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from A90 and exited onto the proposed site access road.

9.2.2. Route 2 from Forth Ports (Dundee) to Scott Fyffe Roundabout is single carriageway, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from Prince Charles Wharf and exited onto the A972.

9.2.3. Route 3 from Old Glamis Road Junction to site is single carriageway, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from Old Glamis Road Junction and exited onto the proposed site access road.

9.3. Route Survey Reference Sheets

9.3.1. Route 1 Alyth Substation to Emmock Substation

Ref. ALL-A242453-RS-01 *Alyth Substation site access gate*	
	
 Note: - vehicle approaches camera	
Direction of Travel Location: Westbound on Alyth Substation site access road	**Coordinates:** 56.609417, -3.166139
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-02

Alyth Substation access road/UC road LH turn

Direction of Travel Location: LH turn from Alyth Substation access road onto unclassified road	**Coordinates:** 56.609417, -3.166778
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-03

UC road/B954 shunt manoeuvre

Direction of Travel Location**:** Shunt manoeuvre from unclassified road onto B954	**C**oordinates**:** 56.598944, -3.181556
Enabling Works Required**:** Carriageway widening PRI works to inside of RH turn Relocation of post and wire fence line to suit PRI works Third-party land owner(s) permission for PRI works Shunt manoeuvre	Enabling Work Grade**:** **High** **High** **High** **Medium**
Assessment Works Required**:** Route survey carried out SPA carried out, drawing no. ALL-A242453-SPA-17 included in Appendix D	Assessment Work **Grade:** Complete Complete

Ref. ALL-A242453-RS-03 cont'd

UC road/B954 shunt manoeuvre

Direction of Travel Location:	**Coordinates:**
Shunt manoeuvre from unclassified road onto B954	56.598944, -3.181556
Enabling Works Required:	**Enabling Work Grade:**
Carriageway widening PRI works to inside of RH turn	**High**
Relocation of post and wire fence line to suit PRI works	**High**
Third-party land owner(s) permission for PRI works	**High**
Shunt manoeuvre	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete
SPA carried out, drawing no. ALL-A242453-SPA-17 included in Appendix D	Complete

Ref. ALL-A242453-RS-03 cont'd

UC road/B954 shunt manoeuvre

Direction of Travel Location: Southbound on B954 past UC road junction following shunt manoeuvre	**Coordinates:** 56.598944, -3.181556
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242453-SPA-17 included in Appendix D	**Assessment Work Grade:** Complete Complete

Ref. ALL-A242453-RS-04

B954/04 Crathies

Direction of Travel Location: Southbound on B954 over structure no. B954/04 Crathies	**Coordinates:** 56.595194, -3.175278
Enabling Works Required: TBC	**Enabling Work Grade:** TBC
Assessment Works Required: Failed Perth and Kinross Council checks Further structural assessment Unsuitable for overbridging should assessment fail	**Assessment Work Grade:** Complete **Medium** **High**

Ref. ALL-A242453-RS-05

B954/A94 LH turn

Direction of Travel Location: LH turn from B954 onto A94	**Coordinates:** 56.590194, -3.168250
Enabling Works Required: Removal of 2 no. plastic bollard Temporary steel plating of verges to accommodate overrun	**Enabling Work Grade:** **Medium** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-05 cont'd

B954/A94 LH turn

Direction of Travel Location: LH turn from B954 onto A94	**Coordinates:** 56.590194, -3.168250
Enabling Works Required: Temporary steel plating of verges to accommodate overrun	**Enabling Work Grade:** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-06

A94/A928 RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from A94 onto A928	56.605111, -3.003000
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

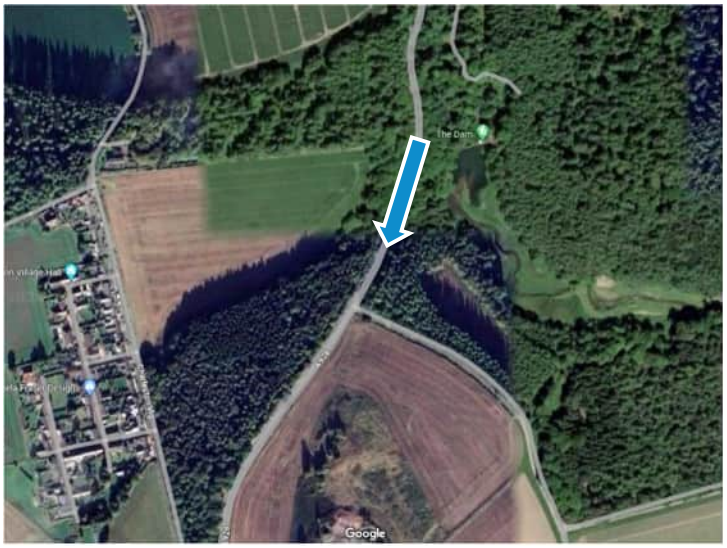
Ref. ALL-A242453-RS-06 cont'd

A94/A928 RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from A94 onto A928	56.605111, -3.003000
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-07

A928-385458 Lera Culvert



Direction of Travel Location: Southbound on A928 over structure no. A928-385458 Lera Culvert	**Coordinates:** 56.600361, -3.002111
Enabling Works Required: TBC	**Enabling Work Grade:** TBC
Assessment Works Required: Failed Angus Council checks Further structural assessment Suitable for overbridging should assessment fail	**Assessment Work Grade:** Complete **Medium** **Medium**

Ref. ALL-A242453-RS-08

A982 gradient

Direction of Travel Location: Southbound on A982	**Coordinates:** 56.598639, -3.003972
Enabling Works Required: Additional tractor unit(s) to produce necessary tractive and braking effort along length of A982	**Enabling Work Grade:** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-09

A928/3 Milton of Ogilvie Bridge

Direction of Travel Location:	**Coordinates:**
Southbound on A928 over structure no. A928/3 Milton of Ogilvie Bridge	56.581889, -3.005306
Enabling Works Required:	**Enabling Work Grade:**
TBC	TBC
Assessment Works Required:	**Assessment Work Grade:**
Failed Angus Council checks	Complete
Further structural assessment	**Medium**
Suitable for overbridging should assessment fail	**Medium**

Ref. ALL-A242453-RS-10

A928-389431 Kilmundie Bridge

Direction of Travel Location: Southbound on A928 over structure no. A928-389431 Kilmundie Bridge	**Coordinates:** 56.576361, -2.995528
Enabling Works Required: TBC	**Enabling Work Grade:** TBC
Assessment Works Required: Failed Angus Council checks Further structural assessment Suitable for overbridging should assessment fail	**Assessment Work Grade:** Complete **Medium** **Medium**

Ref. ALL-A242453-RS-11

A928-404415 Lumleyden Culvert

Direction of Travel Location:	**Coordinates:**
Southbound on A928 over structure no. A928-404415 Lumleyden Culvert	56.561694, -2.970944
Enabling Works Required:	**Enabling Work Grade:**
TBC	TBC
Assessment Works Required:	**Assessment Work Grade:**
Failed Angus Council checks	Complete
Further structural assessment	**Medium**
Suitable for overbridging should assessment fail	**Medium**

Ref. ALL-A242453-RS-12

A928/A90 RH turn

Direction of Travel Location: RH turn from A928 onto A90	**Coordinates:** 56.548278, -2.939667
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-12

A928/A90 RH turn

Direction of Travel Location: RH turn from A928 onto A90	**Coordinates:** 56.548278, -2.939667
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-12 cont'd

A928/A90 RH turn

Direction of Travel Location: RH turn from A928 onto A90	**Coordinates:** 56.548278, -2.939667
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-13

A90/UC road RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from A90 onto unclassified road	56.531000, -2.945583
Enabling Works Required:	**Enabling Work Grade:**
Removal of 1 no. illuminated road sign and 2 no. keep left bollard from UC road central splitter island	**Medium**
Temporary steel plating of UC road central splitter island	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

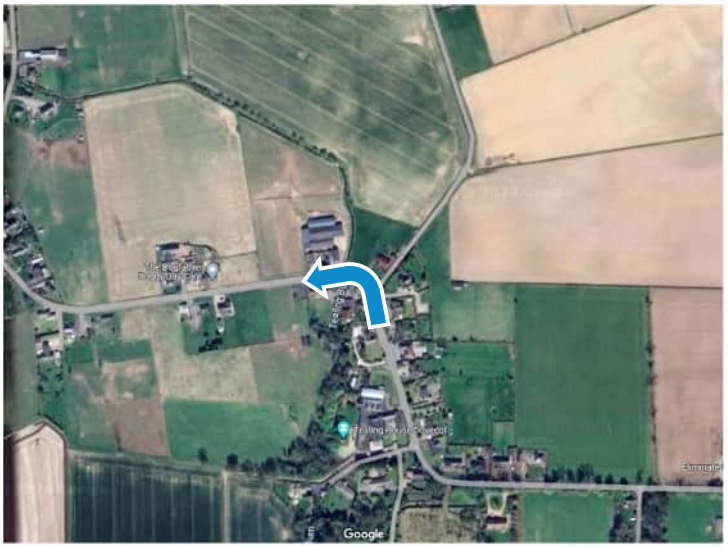
Ref. ALL-A242453-RS-13 cont'd

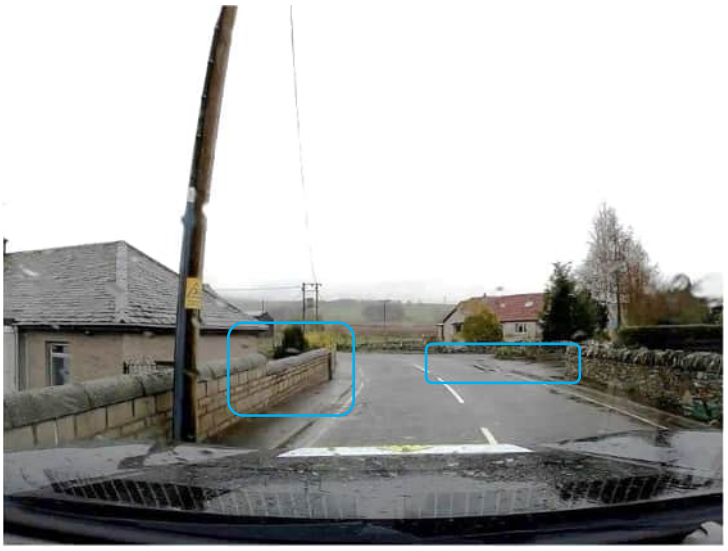
A90/UC road RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from A90 onto unclassified road	56.531000, -2.945583
Enabling Works Required:	**Enabling Work Grade:**
Removal of 1 no. illuminated road sign and 2 no. keep left bollard from UC road central splitter island	**Medium**
Temporary steel plating of UC road central splitter island	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-14

UC road Tealing Burn LH bend

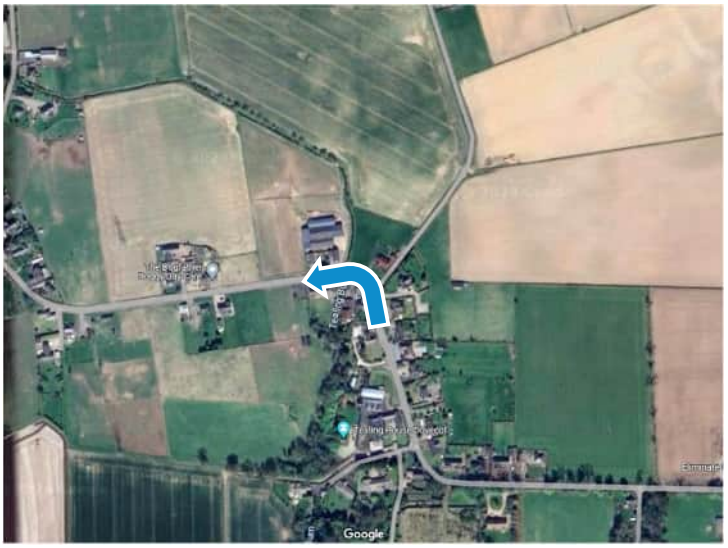


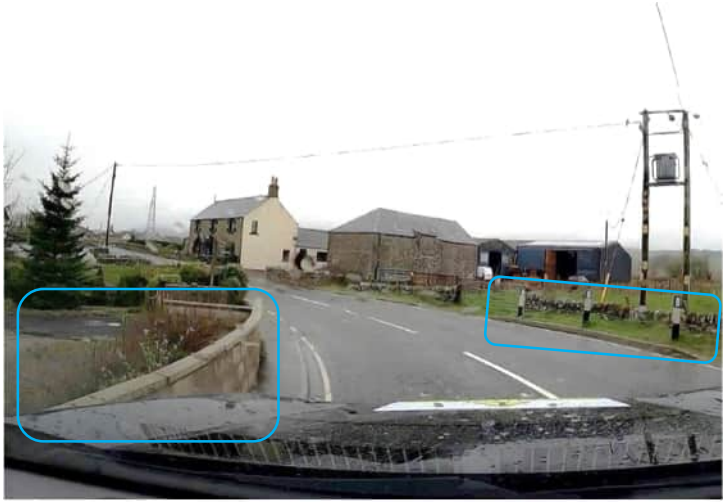


Direction of Travel Location: Westbound on unclassified road around LH bend over Tealing Burn	**Coordinates:** 56.533278, -2.955778
Enabling Works Required: Carriageway widening PRI works beyond highway limits Removal of sections of wall/fencing Third-party land owner(s) permission for PRI works Temporary steel plating off offside pavement for overrun	**Enabling Work Grade:** **High** **High** **High** **Low**
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242453-SPA-01 included in Appendix D	**Assessment Work Grade:** Complete Complete

Ref. ALL-A242453-RS-14 cont'd

UC road Tealing Burn LH bend





Direction of Travel Location:	**Coordinates:**
Westbound on unclassified road around LH bend over Tealing Burn	56.533278, -2.955778
Enabling Works Required:	**Enabling Work Grade:**
Carriageway widening PRI works beyond highway limits	**High**
Removal of sections of wall/fencing	**High**
Third-party land owner(s) permission for PRI works	**High**
Removal of 3 no. plastic bollard	**Medium**
Temporary steel plating off offside pavement for overrun	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete
SPA carried out, drawing no. ALL-A242453-SPA-01 included in Appendix D	Complete

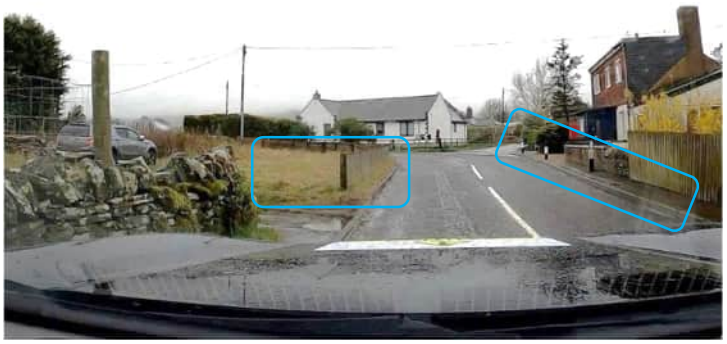
Ref. ALL-A242453-RS-15

C6-413383 Mill of Tealing Bridge

Direction of Travel Location:	**Coordinates:**
Westbound on unclassified road over structure no. C6-413383 Mill of Tealing Bridge	56.533333, -2.956194
Enabling Works Required:	**Enabling Work Grade:**
TBC	TBC
Assessment Works Required:	**Assessment Work Grade:**
Failed Angus Council checks	Complete
Further structural assessment	**Medium**
Suitable for overbridging should assessment fail	**Medium**

Ref. ALL-A242453-RS-16

UC road Tealing LH bend



Direction of Travel Location:	**Coordinates:**
Westbound on unclassified road around LH bend past Huntingfaulds Rd	56.533556, -2.963083
Enabling Works Required:	**Enabling Work Grade:**
Carriageway widening PRI works beyond highway limits	**High**
Removal of sections of fencing	**High**
Third-party land owner(s) permission for PRI works	**High**
Removal of 3 no. plastic bollard	**Medium**
Temporary steel plating off offside pavement for overrun	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete
SPA carried out, drawing no's ALL-A242453-SPA-02 & -10 included in Appendix D	Complete

Ref. ALL-A242453-RS-16 cont'd

UC road Tealing LH bend

Direction of Travel Location: Westbound on unclassified road around LH bend past Huntingfaulds Rd	**Coordinates:** 56.533556, -2.963083
Enabling Works Required: Carriageway widening PRI works beyond highway limits Removal of sections of fencing Third-party land owner(s) permission for PRI works Temporary steel plating off offside pavement for overrun	**Enabling Work Grade:** **High** **High** **High** **Low**
Assessment Works Required: Route survey carried out SPA carried out, drawing no's ALL-A242453-SPA-02 & -10 included in Appendix D	**Assessment Work Grade:** Complete Complete

Ref. ALL-A242453-RS-17

C6-406383 Coralden Bridge

Direction of Travel Location: Westbound on unclassified road over structure no. C6-406383 Coralden Bridge	**Coordinates:** 56.533194, -2.965944
Enabling Works Required: TBC	**Enabling Work Grade:** TBC
Assessment Works Required: Failed Angus Council checks Further structural assessment Suitable for overbridging should assessment fail	**Assessment Work Grade:** Complete **Medium** **Medium**

Ref. ALL-A242453-RS-18

UC road/UC road shunt manoeuvre

Direction of Travel Location:	**Coordinates:**
Westbound on unclassified road past Pump Cross Roads	56.531583, -2.984833
Enabling Works Required:	**Enabling Work Grade:**
Shunt manoeuvre	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out SPA carried out, drawing no's ALL-A242453-SPA-03 & -11 included in Appendix D	Complete Complete

Ref. ALL-A242453-RS-18 cont'd

UC road/UC road shunt manoeuvre

Direction of Travel Location:	**Coordinates:**
RH turn onto unclassified road at Pump Cross Roads	56.531583, -2.984833
Enabling Works Required:	**Enabling Work Grade:**
Carriageway widening PRI works beyond highway limits	**High**
Removal of sections of fencing and wall; 1 no. gate, 2 no. gate post and 1 no. illuminated road sign	**High**
Third-party land owner(s) permission for PRI works	**High**
Temporary steel plating off nearside verge for overrun	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete
SPA carried out, drawing no's ALL-A242453-SPA-03 & -11 included in Appendix D	Complete

Ref. ALL-A242453-RS-18 cont'd

UC road/UC road shunt manoeuvre

Direction of Travel Location:	**Coordinates:**
RH turn onto unclassified road at Pump Cross Roads	56.531583, -2.984833
Enabling Works Required:	**Enabling Work Grade:**
Carriageway widening PRI works beyond highway limits	**High**
Removal of sections of fencing and wall; 1 no. gate, 2 no. gate post and 1 no. illuminated road sign	**High**
Third-party land owner(s) permission for PRI works	**High**
Temporary steel plating off nearside verge for overrun	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete
SPA carried out, drawing no's ALL-A242453-SPA-03 & -11 included in Appendix D	Complete

Ref. ALL-A242453-RS-19

UC road/Emmock Substation access road RH turn

Direction of Travel Location: RH turn from unclassified road onto proposed Emmock Substation access road	**Coordinates:** 56.528111, -2.985167
Enabling Works Required: Bellmouth design to be widened to accommodate vehicle track	**Enabling Work Grade:** **High**
Assessment Works Required: Route survey carried out SPA carried out, drawing no's ALL-A242453-SPA-04 & -13 included in Appendix D	**Assessment Work Grade:** Complete Complete

Ref. ALL-A242453-RS-20 *Emmock Substation access road LH bend*	
	
Direction of Travel Location: LH bend on proposed access road	**Coordinates:** 56.527944, -2.987556
Enabling Works Required: Access road design to be widened to accommodate vehicle track	**Enabling Work Grade:** **High**
Assessment Works Required: Route survey carried out SPA carried out, drawing no's ALL-A242453-SPA-05 & -14 included in Appendix D	**Assessment Work Grade:** Complete Complete

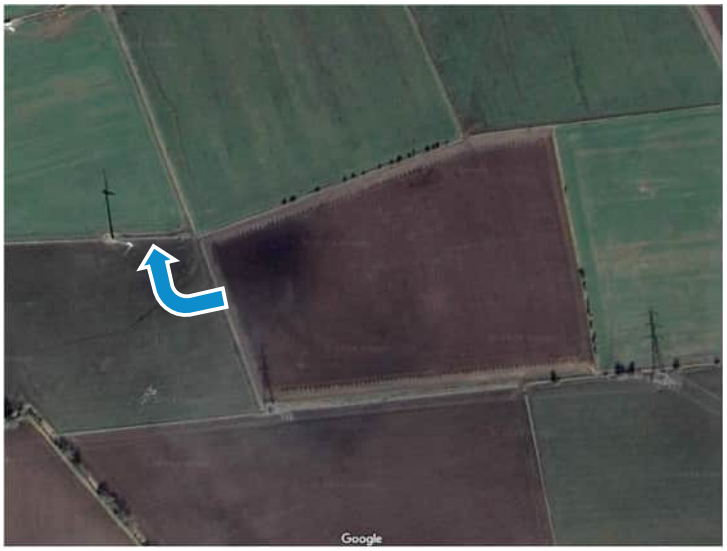
Ref. ALL-A242453-RS-21 *Emmock Substation access road RH bend & external access gate*	
	
Direction of Travel Location: RH bend on proposed access road	**Coordinates:** 56.526917, -2.989139
Enabling Works Required: Access road design to be widened to accommodate vehicle track Gate opening widened to accommodate girder frame	**Enabling Work Grade:** **High** **High**
Assessment Works Required: Route survey carried out SPA carried out, drawing no's ALL-A242453-SPA-06 & -15 included in Appendix D	**Assessment Work Grade:** Complete Complete

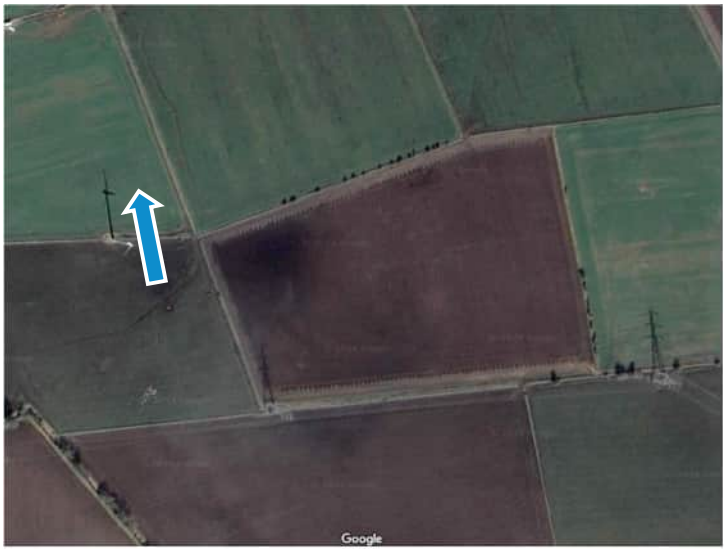
Ref. ALL-A242453-RS-22 *Emmock Substation access road/SGT2 plinth access road RH turn*	
	
Direction of Travel Location: RH turn from site access road onto SGT2 plinth access road	**Coordinates:** 56.526540, -2.9920417
Enabling Works Required: Oversail required to inside of turn, no items of site equipment to be located within this area	**Enabling Work Grade:** **Medium**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-07 & -16 included in Appendix D	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-23 *SGT2 plinth access road*	
	
Direction of Travel Location: Northbound on SGT2 plinth access road in-line with plinth centreline	**Coordinates:** 56.527223, -2.9919085
Enabling Works Required: Plinth access road design to be lengthened to accommodate vehicle track	**Enabling Work Grade:** **High**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-07 & -16 included in Appendix D	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-24 *Emmock Substation access road/SGT1 plinth access road shunt manoeuvre*	
	
Direction of Travel Location: Shunt manoeuvre from site access road onto SGT1 plinth access road	**Coordinates:** 56.526258, -2.9940478
Enabling Works Required: Shunt manoeuvre Oversail required to inside of LH turn, no items of site equipment to be located within this area	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-08 & -18 included in Appendix D	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-25 *SGT1 plinth access road*	
	
Direction of Travel Location: Northbound on SGT1 plinth access road in-line with plinth centreline	**Coordinates:** 56.527223, -2.9919085
Enabling Works Required: Plinth access road design to be lengthened to accommodate vehicle track Auxiliary site equipment to be relocated to avoid conflict with vehicles	**Enabling Work Grade:** **High** **High**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-08 & -18 included in Appendix D	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-26 *Emmock Substation access road/SGT3 plinth access road RH turn*	
	
Direction of Travel Location: RH turn from site access road onto SGT3 plinth access road	**Coordinates:** 56.525760, -2.9978600
Enabling Works Required: Oversail required to inside of turn, no items of site equipment to be located within this area	**Enabling Work Grade:** **Medium**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-09 & -19 included in Appendix D	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-27 *SGT3 plinth access road*	
	
Direction of Travel Location: Northbound on SGT3 plinth access road in-line with plinth centreline	**Coordinates:** 56.526449, -2.9977233
Enabling Works Required: Plinth access road design to be lengthened to accommodate vehicle track	**Enabling Work Grade:** **High**
Assessment Works Required: SPA carried out, drawing no's ALL-A242453-SPA-09 & -19 included in Appendix D	**Assessment Work Grade:** Complete

9.3.2. Route 2 Dundee to A90/UC road junction

Ref. ALL-A242453-RS-28

Dundee Port Stannergate Rd access gate

Note: - vehicle approaches camera

Direction of Travel Location: Northbound through Dundee Port Stannergate Rd access gate	**Coordinates:** 56.466917, -2.919861
Enabling Works Required: Dundee Port access permission	**Enabling Work Grade:** Medium
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-29

Stannergate Rd/Broughty Ferry Rd junction

Direction of Travel Location:	**Coordinates:**
Straight on from Dundee Port access gate across Stannergate Rd onto Broughty Ferry Rd	56.467000, -2.919944
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

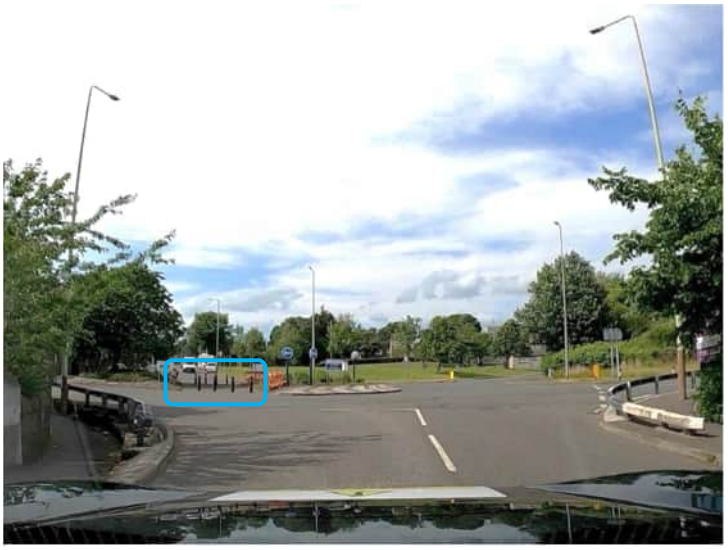
Ref. ALL-A242453-RS-30

MD/039 Stannergate

Direction of Travel Location:	**Coordinates:**
Northbound on Broughty Ferry Rd across structure no. MD/039 Stannergate	56.468139, -2.920972
Enabling Works Required: N other vehicles to cross structure at same time Vehicle to cross in centre of carriageway	**Enabling Work Grade:** **Low** **Low**
Assessment Works Required: Passed Dundee City Council checks with above cautions	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-31

Broughty Ferry/A930 Dundee Rd W/Strips of Craigie Rd rbt



Direction of Travel Location: Straight on at Broughty Ferry Rd/A930 Dundee Rd W/Strips of Craigie Rd roundabout	**Coordinates:** 56.468491, -2.921281
Enabling Works Required: Removal of 8 no. bollards Use of abnormal load roundabout crossing	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-31 cont'd

Broughty Ferry/A930 Dundee Rd W/Strips of Craigie Rd rbt

Direction of Travel Location:	**Coordinates:**
Straight on at Broughty Ferry Rd/A930 Dundee Rd W/Strips of Craigie Rd roundabout	56.468491, -2.921281
Enabling Works Required:	**Enabling Work Grade:**
Removal of 8 no. bollards Use of abnormal load roundabout crossing	Medium Medium
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-31 cont'd

Broughty Ferry/A930 Dundee Rd W/Strips of Craigie Rd rbt

Direction of Travel Location: Straight on at Broughty Ferry Rd/A930 Dundee Rd W/Strips of Craigie Rd roundabout	**Coordinates:** 56.468491, -2.921281
Enabling Works Required: Contraflow of Strips of Craigie Rd on exit from roundabout	**Enabling Work Grade:** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-32

Strips of Craigie Rd central splitter island no.1

Direction of Travel Location:	**Coordinates:**
Northbound on Strips of Craigie Rd	56.469056, -2.921917
Enabling Works Required:	**Enabling Work Grade:**
Removal of 1 no. keep left bollard	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-33

Strips of Craigie Rd central splitter island no.2

Direction of Travel Location:	**Coordinates:**
Northbound on Strips of Craigie Rd	56.470222, -2.922750
Enabling Works Required:	**Enabling Work Grade:**
Removal of 2 no. keep left bollard	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

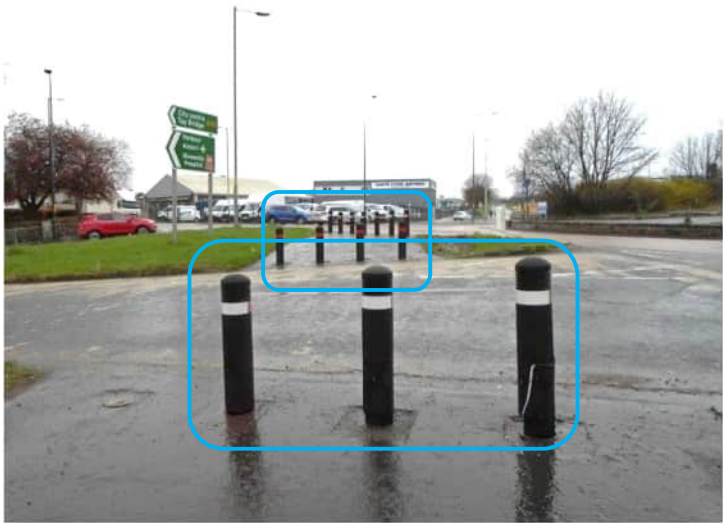
Ref. ALL-A242453-RS-34

Strips of Craigie Rd/A92/A972 Scott Fyffe Roundabout

Direction of Travel Location: Straight on at Scott Fyffe Roundabout from Strips of Craigie Rd onto A972	**Coordinates:** 56.474000, -2.924944
Enabling Works Required: Removal of 15 no. bollards Use of abnormal load roundabout crossing	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-34 cont'd

Strips of Craigie Rd/A92/A972 Scott Fyffe Roundabout



Direction of Travel Location: Straight on at Scott Fyffe Roundabout from Strips of Craigie Rd onto A972	**Coordinates:** 56.474000, -2.924944
Enabling Works Required: Removal of 15 no. bollards Use of abnormal load roundabout crossing	**Enabling Work Grade:** **Medium** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-34 cont'd

Strips of Craigie Rd/A92/A972 Scott Fyffe Roundabout

Direction of Travel Location: Straight on at Scott Fyffe Roundabout from Strips of Craigie Rd onto A972	**Coordinates:** 56.474000, -2.924944
Enabling Works Required: Removal of 15 no. bollards Use of abnormal load roundabout crossing	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-34 cont'd

Strips of Craigie Rd/A92/A972 Scott Fyffe Roundabout

Direction of Travel Location:	**Coordinates:**
Straight on at Scott Fyffe Roundabout from Strips of Craigie Rd onto A972	56.474000, -2.924944
Enabling Works Required:	**Enabling Work Grade:**
Use of abnormal load roundabout crossing	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-35

A972/Moffat Rd rbt

Direction of Travel Location:	**Coordinates:**
Straight on at A972/Moffat Rd rbt continuing on A972	56.476694, -2.930167
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

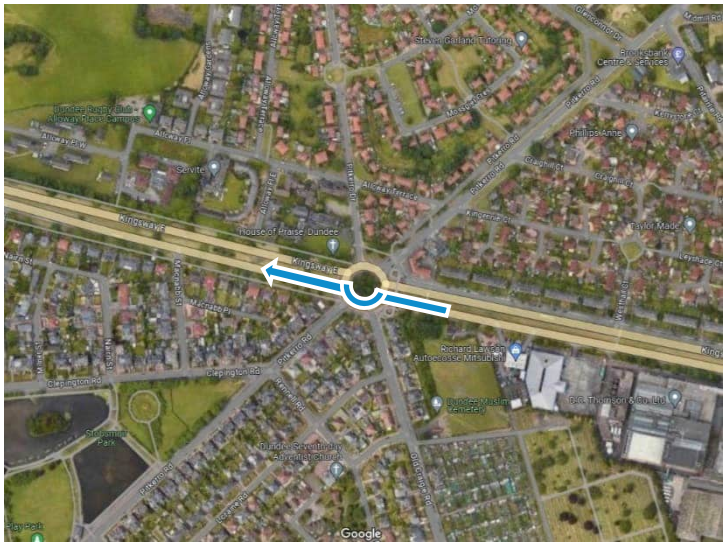
Ref. ALL-A242453-RS-35 cont'd

A972/Moffat Rd rbt

Direction of Travel Location:	**Coordinates:**
Straight on at A972/Moffat Rd rbt continuing on A972	56.476694, -2.930167
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-36

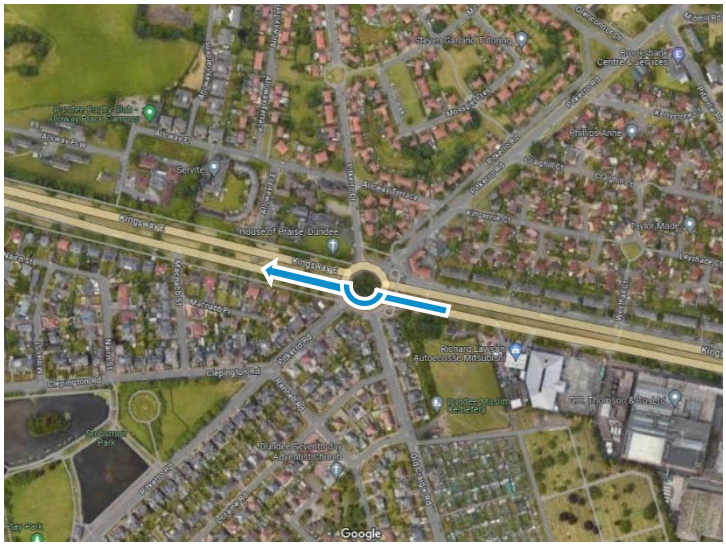
A972/Pitkerro Rd rbt



Direction of Travel Location:	**Coordinates:**
Straight on at A972/Pitkerro Rd rbt continuing on A972	56.478944, -2.943639
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-36 cont'd

A972/Pitkerro Rd rbt



Direction of Travel Location:	**Coordinates:**
Straight on at A972/Pitkerro Rd rbt continuing on A972	56.478944, -2.943639
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

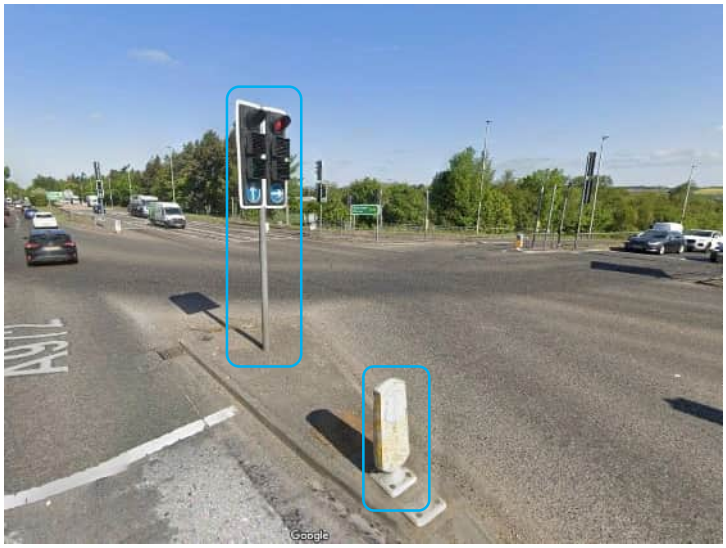
Ref. ALL-A242453-RS-37

A972/A90 Forfar Road Junction RH turn

Direction of Travel Location: RH turn from A972 onto A90 at Forfar Road Junction	**Coordinates:** 56.480278, -2.952889
Enabling Works Required: Removal of 1. no traffic signal and 1 no. keep left bollard from entry central splitter island Full use of junction	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-37 cont'd

A972/A90 Forfar Road Junction RH turn



Direction of Travel Location: RH turn from A972 onto A90 at Forfar Road Junction	**Coordinates:** 56.480278, -2.952889
Enabling Works Required: Removal of 1. no traffic signal and 1 no. keep left bollard from entry central splitter island Full use of junction	**Enabling Work Grade:** Medium Medium
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-37 cont'd

A972/A90 Forfar Road Junction RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from A972 onto A90 at Forfar Road Junction	56.480278, -2.952889
Enabling Works Required:	**Enabling Work Grade:**
Removal of 2. no traffic signal, section of steel railing and 1 no. keep left bollard from exit central splitter island Full use of junction	**Medium** **Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-38

A90 Claverhouse Roundabout (northbound)

Direction of Travel Location: Straight on at Claverhouse Roundabout continuing on A90 northbound	**Coordinates:** 56.491556, -2.950528
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-38 cont'd

A90 Claverhouse Roundabout (northbound)

Direction of Travel Location: Straight on at Claverhouse Roundabout continuing on A90 northbound	**Coordinates:** 56.491556, -2.950528
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-39

A90 Emmock Roundabout (northbound)

Direction of Travel Location:	**Coordinates:**
Straight on at Emmock Roundabout continuing on A90 northbound	56.494722, -2.949889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

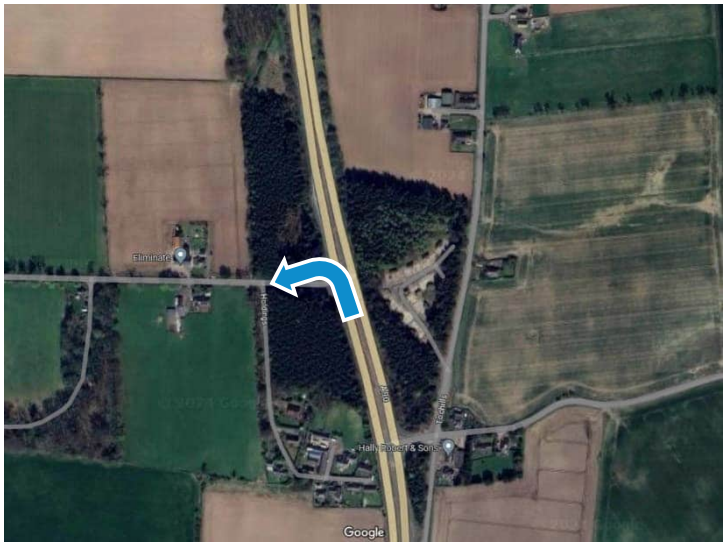
Ref. ALL-A242453-RS-39 cont'd

A90 Emmock Roundabout (northbound)

Direction of Travel Location:	**Coordinates:**
Straight on at Emmock Roundabout continuing on A90 northbound	56.494722, -2.949889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-40

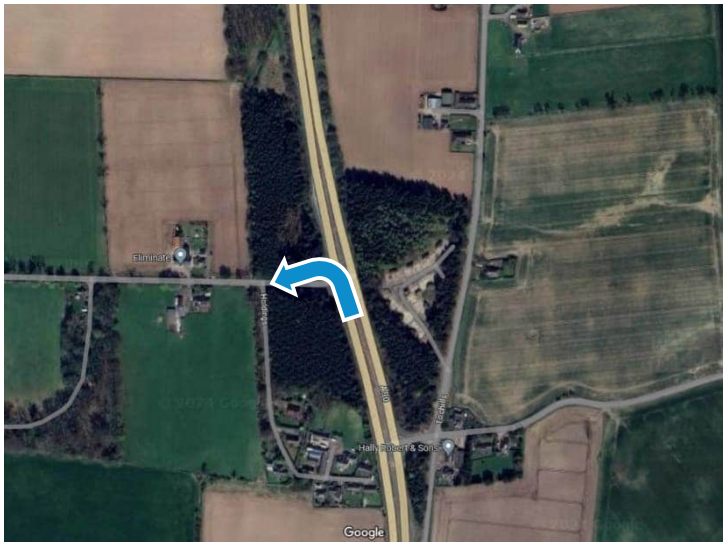
A90/UC road LH turn



Direction of Travel Location:	**Coordinates:**
LH turn from A90 onto unclassified road	56.531000, -2.945583
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-40 cont'd

A90/UC road LH turn



Direction of Travel Location:	**Coordinates:**
LH turn from A90 onto unclassified road	56.531000, -2.945583
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Note: - Route 2 joins Route 1 for remaining section to site (refer to route reference sheets ALL-A242453-RS-14 to -27 for remainder of route).

9.3.3. Route 3 Forfar Road Junction to Emmock Substation

Note: - Route 3 departs Route 2 at Forfar Road Junction (refer to route reference sheets -28 to -36 for preceding section).

Ref. ALL-A242453-RS-41

A972/A90 Forfar Road Junction

Direction of Travel Location:	**Coordinates:**
Straight on from A972 onto A90 at Forfar Road Junction	56.480167, -2.953028
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-42

A90 Old Glamis Road Junction

Direction of Travel Location:	**Coordinates:**
RH turn from A90 onto Old Glamis Rd at Old Glamis Road Junction	56.483056, -2.975361
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

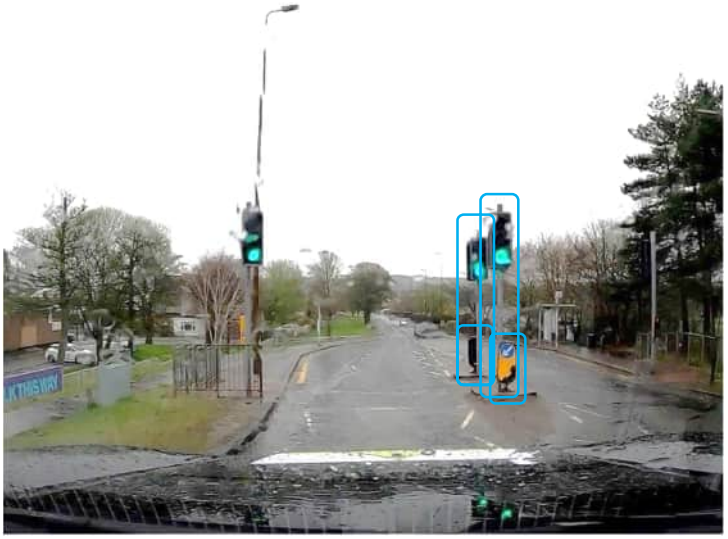
Ref. ALL-A242453-RS-42 cont'd

A90 Old Glamis Road Junction

Direction of Travel Location:	**Coordinates:**
RH turn from A90 onto Old Glamis Rd at Old Glamis Road Junction	56.483056, -2.975361
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-43

Old Glamis Rd pedestrian crossing



Direction of Travel Location: Northbound on Old Glamis Rd	**Coordinates:** 56.483972, -2.975000
Enabling Works Required: Removal of 2 no. traffic signal and 2 no. keep left bollard	**Enabling Work Grade:** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-44

Old Glamis Rd/Forres Ave rbt

Direction of Travel Location: Straight on at Old Glamis Rd/Forres Ave rbt continuing on Old Glamis Rd	**Coordinates:** 56.487222, -2.973917
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-44 cont'd

Old Glamis Rd/Forres Ave rbt

Direction of Travel Location:	**Coordinates:**
Straight on at Old Glamis Rd/Forres Ave rbt continuing on Old Glamis Rd	56.487222, -2.973917
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-45

Old Glamis Rd gradient

Direction of Travel Location: Northbound on Old Glamis Rd	**Coordinates:** 56.490944, -2.972750
Enabling Works Required: Additional tractor unit(s) to produce necessary braking effort	**Enabling Work Grade:** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-46

Old Glamis Rd/Balgowan Ave rbt

Direction of Travel Location:	**Coordinates:**
Straight on at Old Glamis Rd/Balgowan Ave rbt continuing on Old Glamis Rd	56.491583, -2.973056
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

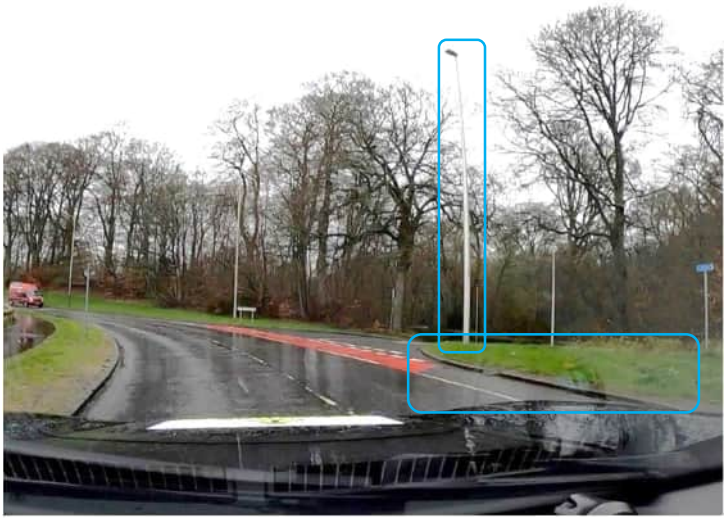
Ref. ALL-A242453-RS-46 cont'd

Old Glamis Rd/Balgowan Ave rbt

Direction of Travel Location:	**Coordinates:**
Straight on at Old Glamis Rd/Balgowan Ave rbt continuing on Old Glamis Rd	56.491583, -2.973056
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-47

Old Glamis Rd/Emmock Rd RH turn



Direction of Travel Location: RH turn from Old Glamis Rd onto Emmock Rd	**Coordinates:** 56.494694, -2.975278
Enabling Works Required: Removal of 1 no. street light Temporary steel plating of verge to inside of turn to accommodate vehicle track	**Enabling Work Grade:** **Medium** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-47 cont'd

Old Glamis Rd/Emmock Rd RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from Old Glamis Rd onto Emmock Rd	56.491583, -2.973056
Enabling Works Required: Removal of 1 no. street light Temporary steel plating of verge to inside of turn to accommodate vehicle track	**Enabling Work Grade:** **Medium** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-47 cont'd

Old Glamis Rd/Emmock Rd RH turn

Direction of Travel Location:	**Coordinates:**
RH turn from Old Glamis Rd onto Emmock Rd	56.491583, -2.973056
Enabling Works Required: Removal of 1 no. street light Temporary steel plating of verge to inside of turn to accommodate vehicle track	**Enabling Work Grade:** **Medium** **Low**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-48

U322-001 Balmuir

Direction of Travel Location:	**Coordinates:**
Northbound on Emmock Rd over structure no. U322-001 Balmuir	56.495306, -2.976056
Enabling Works Required:	**Enabling Work Grade:**
TBC	TBC
Assessment Works Required:	**Assessment Work Grade:**
Failed Angus Council checks	Complete
Further structural assessment	**Medium**
Unsuitable for overbridging should assessment fail	**High**

Ref. ALL-A242453-RS-49

Emmock Rd gradient

Direction of Travel Location:	**Coordinates:**
Northbound on Emmock Rd	56.496611, -2.977694
Enabling Works Required:	**Enabling Work Grade:**
Additional tractor unit(s) to produce necessary tractive effort	**Low**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

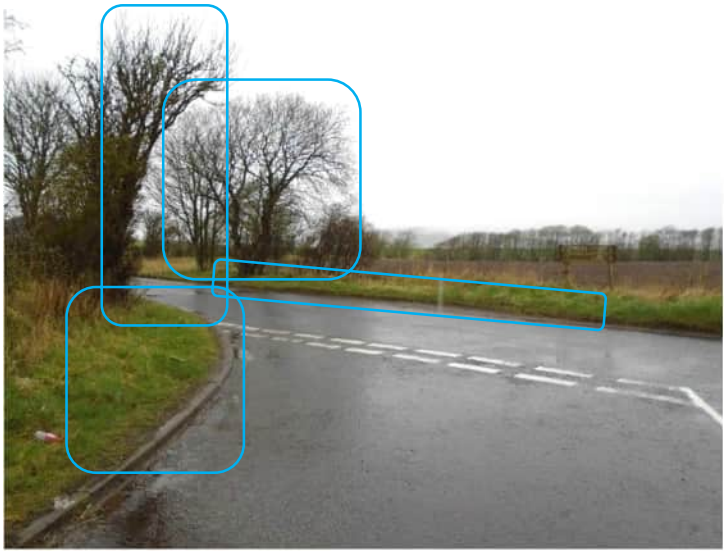
Ref. ALL-A242453-RS-50

Emmock Rd/UC road LH turn

Direction of Travel Location:	**Coordinates:**
LH turn from Emmock Rd onto unclassified road	56.507556, -2.984306
Enabling Works Required:	**Enabling Work Grade:**
PRI carriageway widening works within highway limits to accommodate vehicle track Vegetation clearance/pruning	**High** **Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-50 cont'd

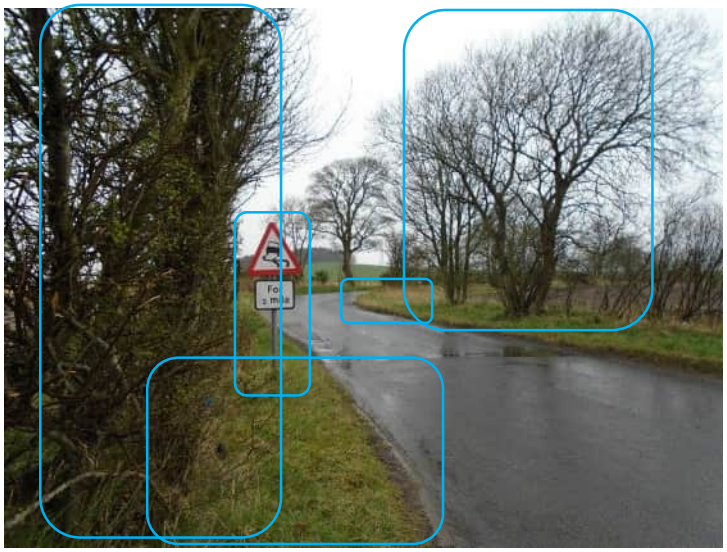
Emmock Rd/UC road LH turn



Direction of Travel Location: LH turn from Emmock Rd onto unclassified road	**Coordinates:** 56.507556, -2.984306
Enabling Works Required: PRI carriageway widening works within highway limits to accommodate vehicle track Vegetation clearance/pruning	**Enabling Work Grade:** **High** **Medium**
Assessment Works Required: Route survey carried out	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-50 cont'd

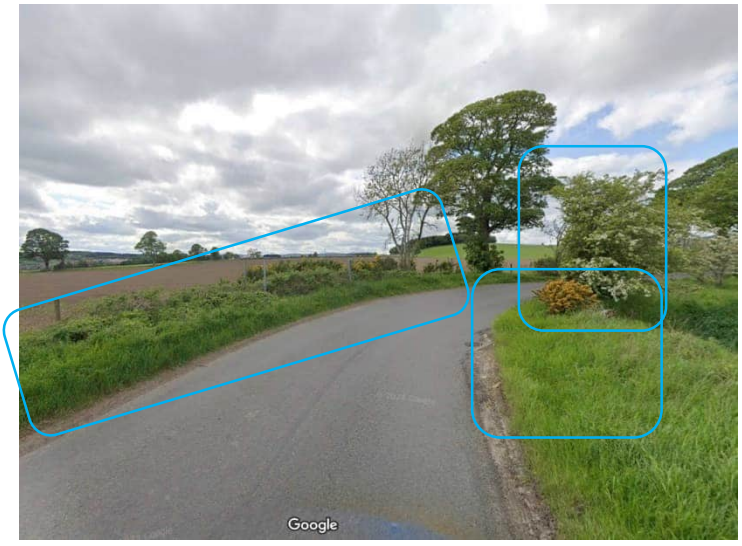
Emmock Rd/UC road LH turn



Direction of Travel Location:	**Coordinates:**
LH turn from Emmock Rd onto unclassified road	56.507556, -2.984306
Enabling Works Required:	**Enabling Work Grade:**
PRI carriageway widening works within highway limits to accommodate vehicle track	**High**
Vegetation clearance/pruning	**Medium**
Removal of 1 no. non-illuminated road sign	**Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-50 cont'd

Emmock Rd/UC road LH turn



Direction of Travel Location:	**Coordinates:**
LH turn from Emmock Rd onto unclassified road and around RH bend	56.507556, -2.984306
Enabling Works Required:	**Enabling Work Grade:**
PRI carriageway widening works within highway limits to accommodate vehicle track Vegetation clearance/pruning	**High** **Medium**
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out	Complete

Ref. ALL-A242453-RS-51

Unknown Fithie Burn structure

Direction of Travel Location:	**Coordinates:**
Northbound on unclassified road over structure no. Unknown Fithie Burn structure	56.522139, -2.985667
Enabling Works Required:	**Enabling Work Grade:**
TBC	TBC
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out Awaiting Angus Council approval	Complete **Medium**

Ref. ALL-A242453-RS-52

UC road/Emmock Substation access road LH turn

Direction of Travel Location: LH turn from unclassified road onto proposed Emmock Substation access road	**Coordinates:** 56.528111, -2.985167
Enabling Works Required: Bellmouth design to be widened to accommodate vehicle track	**Enabling Work Grade:** **High**
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242453-SPA-12 included in Appendix D	**Assessment Work Grade:** Complete Complete

Note: - Route 3 joins Route 2 for remaining section to plinth (refer to route reference sheets ALL-A242453-RS-20 to -27 for remainder of route).

9.3.4. Route 4 A90/UC road junction to Forfar Road Junction

Note: - Route 4 departs Route 1 at A90/UC road junction (refer to route reference sheets ALL-A242453-RS-01 to -12 for preceding section).

Ref. ALL-A242453-RS-53

A90/UC road junction

Direction of Travel Location:	**Coordinates:**
Straight on past A90/unclassified road junction continuing on A90	56.531000, -2.945583
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-54

A90 390 Newbigging

Direction of Travel Location: Southbound on A90 over structure no. A90 390 Newbigging	**Coordinates:** 56.514250, -2.945222
Enabling Works Required: TBC	**Enabling Work Grade:** TBC
Assessment Works Required: Route survey carried out Awaiting Transport Scotland/Amey approval	**Assessment Work Grade:** Complete **Medium**

Ref. ALL-A242453-RS-55

A90 Emmock Roundabout (southbound)

Direction of Travel Location:	**Coordinates:**
Straight on at Emmock Roundabout continuing on A90 southbound	56.494722, -2.949889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-55 cont'd

A90 Emmock Roundabout (southbound)

Direction of Travel Location:	**Coordinates:**
Straight on at Emmock Roundabout continuing on A90 southbound	56.494722, -2.949889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-56

A90 Claverhouse Roundabout (southbound)

Direction of Travel Location: Straight on at Claverhouse Roundabout continuing on A90 southbound	**Coordinates:** 56.491556, -2.950528
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-56 cont'd

A90 Claverhouse Roundabout (southbound)

Direction of Travel Location: Straight on at Claverhouse Roundabout continuing on A90 southbound	**Coordinates:** 56.491556, -2.950528
Enabling Works Required: N/A	**Enabling Work Grade:** N/A
Assessment Works Required: Route survey carried out - negotiable	**Assessment Work Grade:** Complete

Ref. ALL-A242453-RS-57

A90 Forfar Road Junction RH turn

Direction of Travel Location:	**Coordinates:**
RH turn at Forfar Road Junction continuing on A90	56.480278, -2.952889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Ref. ALL-A242453-RS-57 cont'd

A90 Forfar Road Junction RH turn

Direction of Travel Location:	**Coordinates:**
RH turn at Forfar Road Junction continuing on A90	56.480278, -2.952889
Enabling Works Required:	**Enabling Work Grade:**
N/A	N/A
Assessment Works Required:	**Assessment Work Grade:**
Route survey carried out - negotiable	Complete

Note: - Route 4 joins Route 3 for remaining section to site (refer to route reference sheets ALL-A242453-RS-42 to -52 andALL-A242453-RS -20 to -27 to remainder of route).

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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10. Conclusion

10.1. Allelys have been commissioned by Cnoclee Environmental Services to provide a feasibility survey for the transport of 114 te Split Phase Super Grid Transformers (SGT) from Alyth Substation to Emmock Substation and 170 te SGT from Forth Ports (Dundee) to Emmock Substation.

10.2. The objective of this document is to clearly outline a workable delivery concept for the enclosed cargo whilst adhering to UK legislation and equipment capabilities. Our recommendations are based on a wealth of knowledge and experience, however, are subject to relevant permissions at the time of delivery.

10.3. The nominated transport configuration for delivery of the 114 te split phase SGT is a 6-axle bed 6-axle trailer and for the 170 te SGT is a 16-axle Girder Frame Trailer (GFT), subject to structural assessments. Both transport configurations are classified as Special Order due to gross weights of 168 te and 263 te respectively.

10.4. As the transport is classified as Special Order, in accordance with the Water Preferred Policy, Forth Ports (Dundee) has been considered as Port Of Delivery (POD) for the 170 te SGT as it is the closest marine facility to site capable of dealing with this size of cargo.

10.5. It is expected that Prince Charles Wharf be the nominated quay for use as it has a minimum low water depth of 9 m and is therefore suitable for use by deep sea vessels. Offload of the SGT from the delivery vessel by crane is available due to a maximum Ground Bearing Pressure (GBP) of 80 te/m^2. There is also sufficient quayside area to mobilise the 16-axle GFT ready for loading and onward movement of the SGT to site.

10.6. Route 1, from Alyth Substation to Emmock Substation, is not currently considered feasible in terms of structural capacity, as Perth & Kinross Council and Angus Council have advised that seven structures require further structural assessment. The LH turn from the unclassified road onto B954 is not physically negotiable due to the presence of a culvert on the B954, therefore, the 6 bed 6 trailer is to perform a shunt manoeuvre at this junction. In order for the vehicle to turn right onto the B954 northbound before travelling southbound and on to site, third-party land uptake is required to the inside of the turn with carriageway widening works required to accommodate the vehicle track. The remainder of the route to the A90 junction with the unclassified road into Tealing village is considered negotiable with Police Escort, Temporary Traffic Regulation Orders (TTRO) and street furniture removals. However, Route 1 from Tealing village to site is not physically negotiable through Tealing village for either transport configuration and at Pump Cottage Crossroads due to the need for third-party land uptake in multiple locations, therefore, this section of Route 1 is not to be used for the delivery of both the 114 te split phase SGT and 170 te SGT.

10.7. Route 2, from Forth Ports (Dundee) to the A90 junction for Tealing village, is currently considered feasible in terms of structural capacity although Dundee City Council have advised that structure no. MD/039 Stannergate is to be crossed under caution with no other traffic to be on the structure at the same time as the 16-axle GFT and the vehicle must also cross the structure in the centre of the carriageway. The remainder of Route 2 until it joins Route 1 at Tealing village is considered negotiable with Police Escort, TTROs and street furniture removals although the section of the route through Tealing Village to site is again not feasible for the vehicle, therefore, Route 2 is not to be used.

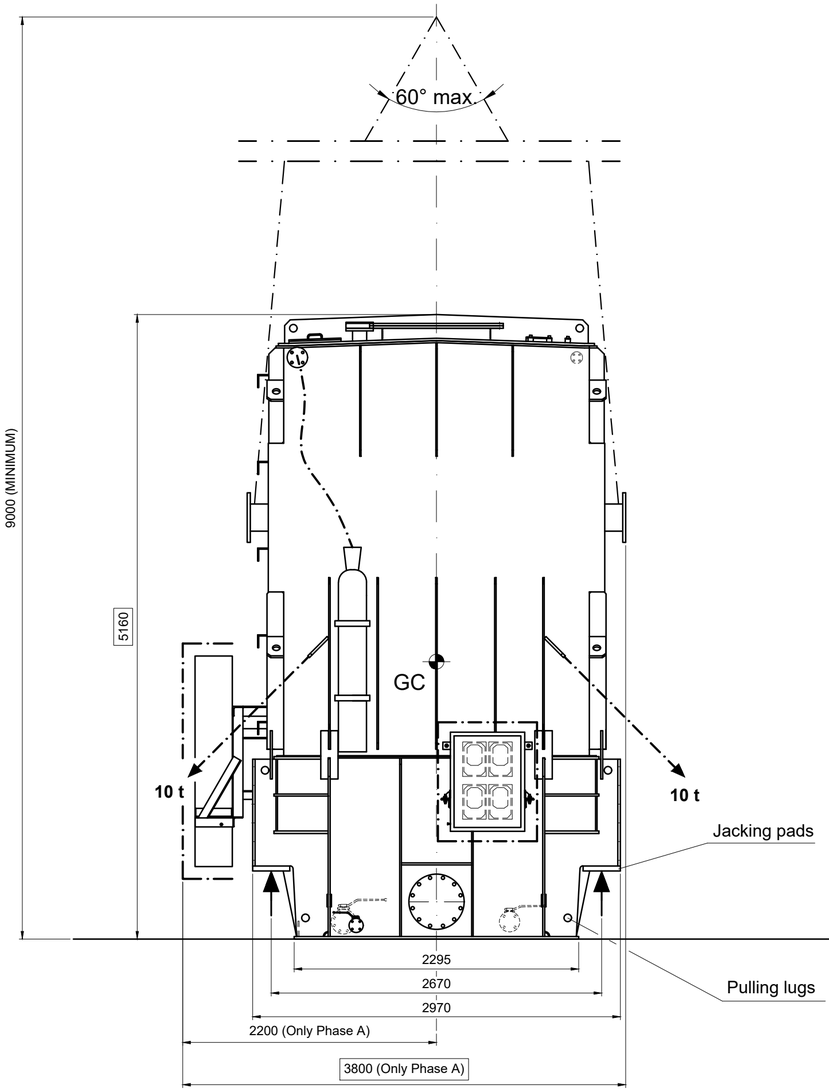
10.8. Route 3, from Forth Ports (Dundee) to site via Old Glamis Road, is not currently considered structurally feasible due to the need to further assess structure no. U322-001 Balmuir, as advised by Angus Council. The span of this structure is too large for overbridging to be an option should the results of the structural assessment be negative; therefore, this structure is to be considered a risk to delivery of both the 114te split phase SGT and 170 te SGT. An additional structure over Fithie Burn on the unclassified road on approach to site has been noted that isn't shown on the ESDAL portal. It is assumed that this structure is owned/managed by Angus Council who have been approached to confirm the current capacity of this asset, however, they are yet to respond at the time of writing this report. Should this structure fail the Angus Council basic checks and further structural assessment, it is suitable for overbridging and therefore doesn't pose a high risk to delivery of the 114 te Split Phase SGT and 170 te SGT. The LH turn from Emmock Road onto an unclassified road and RH bend on the unclassified road immediately after requires minor carriageway widening to accommodate the vehicle tracks with vegetation clearance also required. The rest of Route 3 is considered negotiable with Police Escort, TTROs, additional tractor unit(s) and street furniture removals.

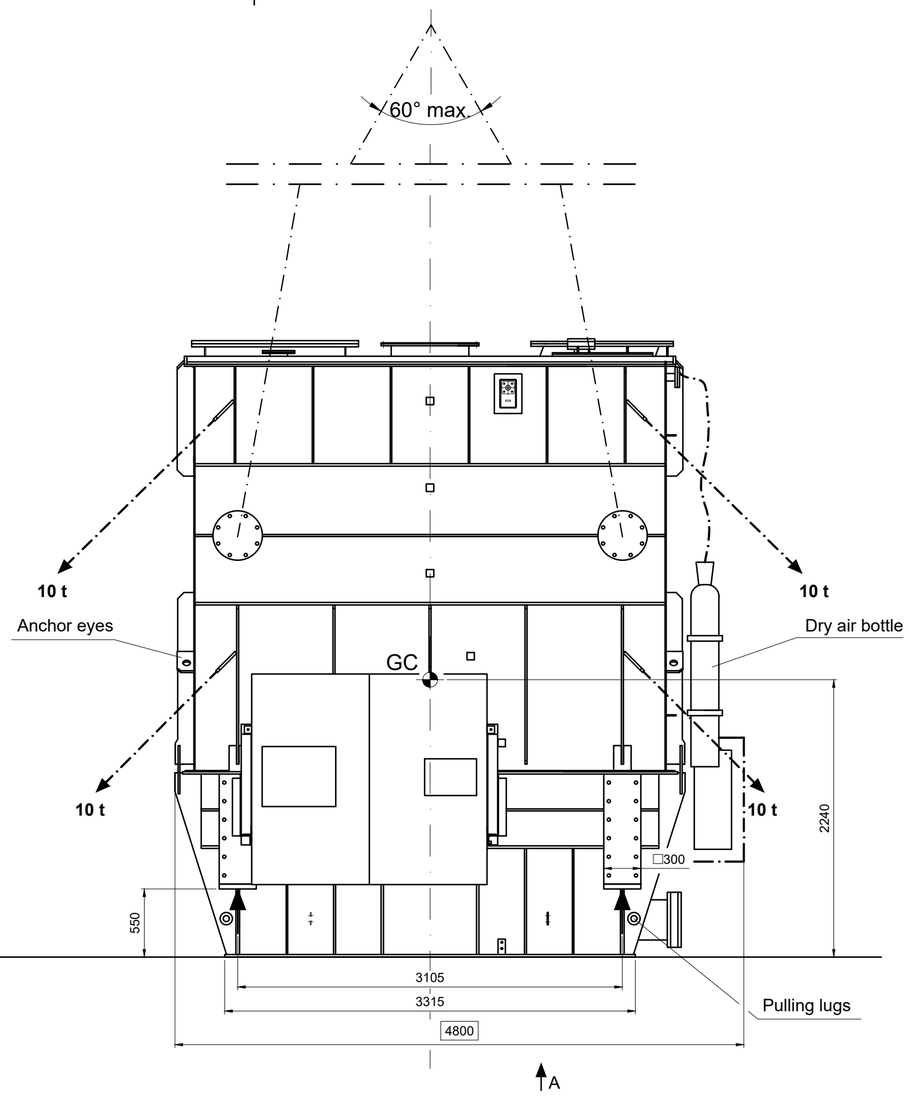
10.9. Route 4, from the A90 junction for Tealing village Forfar Road Junction, is not currently considered structurally feasible as at the time of writing this report Transport Scotland/Amey (North East) have not yet responded regarding the current capacity of structure no. A90 390 Newbigging, however, this structure was cleared for use by the 170 te SGT loaded onto 16-axle GFT, which has a higher axle load than the 114 te split phase SGT loaded onto the 6 bed 6 trailer so it is assumed that the structure will be cleared for the 6 bed 6 trailer as well. Route 4 then joins Route 3 at Forfar Road Junction for the final delivery of the 114 te split phase SGT to site.

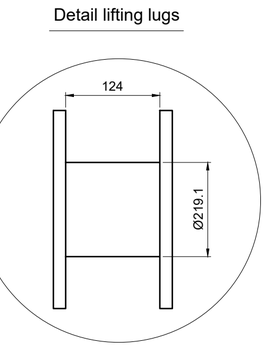
10.10. Swept path assessments (SPA) of the proposed Emmock Substation site access point and layout design have been carried out and show that widening of the site access road is required at the junction from the unclassified road, around a LH bend on approach to site and also around a RH bend just prior to the external site access gate. The external site access gate is also to be widened to allow delivery of the 170 te SGT loaded onto the 16-axle GFT. The SGT2 & 3 plinth access roads are to be lengthened to allow delivery of the units in-line with the plinth centrelines. It is not possible for both units to be delivered directly onto plinth by either the 6bed6 trailer or the 16-axle GFT, therefore, it is assumed that final movement of both units be made by hydraulic jacking and skidding although this operation has not been explored as part of this report. The SGT1 plinth access road also needs to be lengthened to allow delivery in-line with the plinth centreline, however, items of auxiliary site equipment located to the north of the end of the road would need to be relocated to permit this. Therefore, a trailer interchange of SGT1 from the delivery vehicle onto Self-Propelled Modular Trailer (SPMT) is required to allow final delivery onto the plinth.

Appendix A

Cargo & Trailer Arrangement Drawings



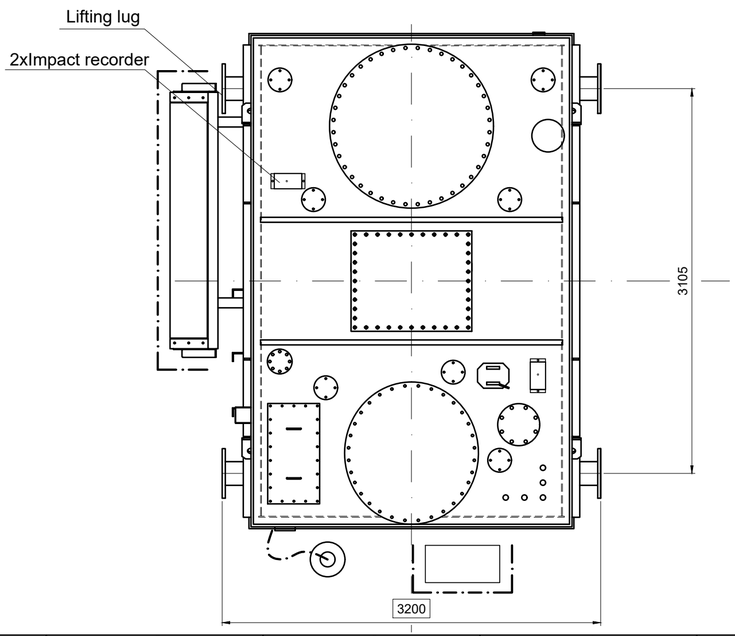


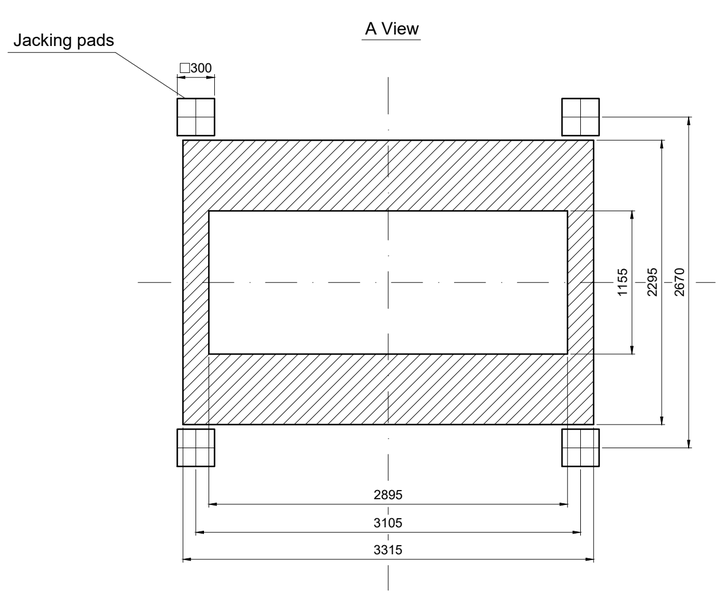


Mechanical Resistive Area

GC - Gravity Center

EACH LIFTING LUG UNIT IS DESIGNED FOR THE QUARTER OF THE TOTAL MASS TO BE LIFTED





SHIPPING
WEIGHT WITHOUT OIL - 114000 kg

THREE - PHASE AUTOTRANSFORMER (DISASSOCIATED PHASES)
ONAN/ODAF - 600/1200 MVA
400 / 275 / 33 kV - YNa0d1

AS BUILT

Drawing Number | 284_1108_1475_00_02

Client: Scottish and Southern Energy plc - BLACKHILLOCK SUBSTATION

Rev.	Date	Designation	Des.	Verif.
B	2017-04-12	Added "As Built" stamp.	B. Oliveira	R. Bento

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ISO Simb.	Scale	Verifier	Checked in
	1:35	R. Bento	2015-12-10

E1320162A/B

Title: Shipping Dimensions

Drawing n.º: 2PT158846B

Created by	Creation Date	Page
B. Oliveira	2015-12-03	1/1

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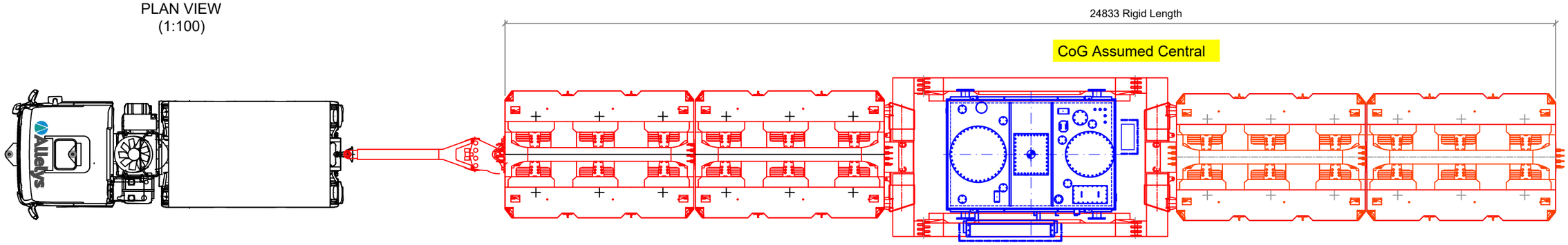
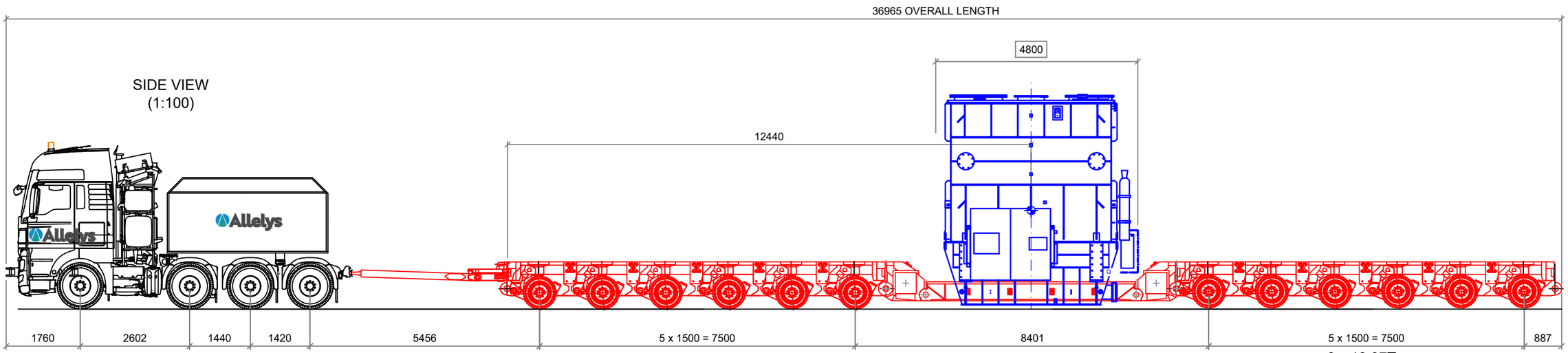
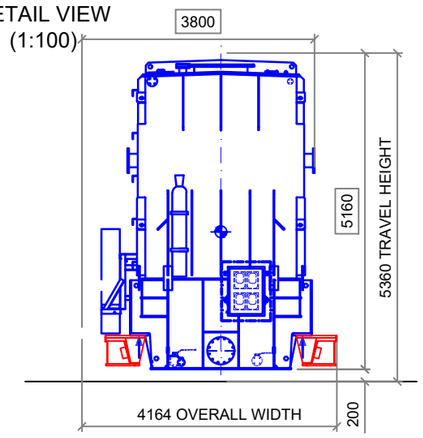
PLAN VIEW (1:100)



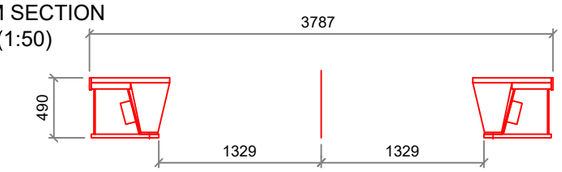
SIDE VIEW (1:100)



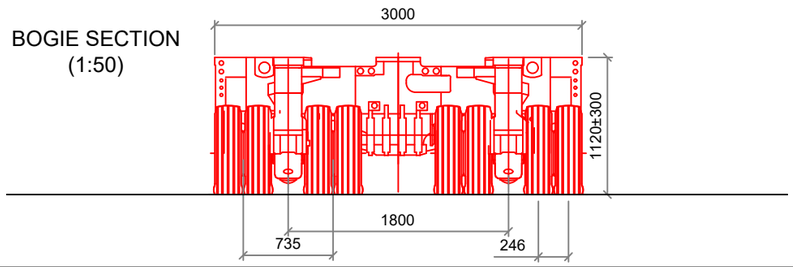
SECTION A-A DETAIL VIEW (1:100)

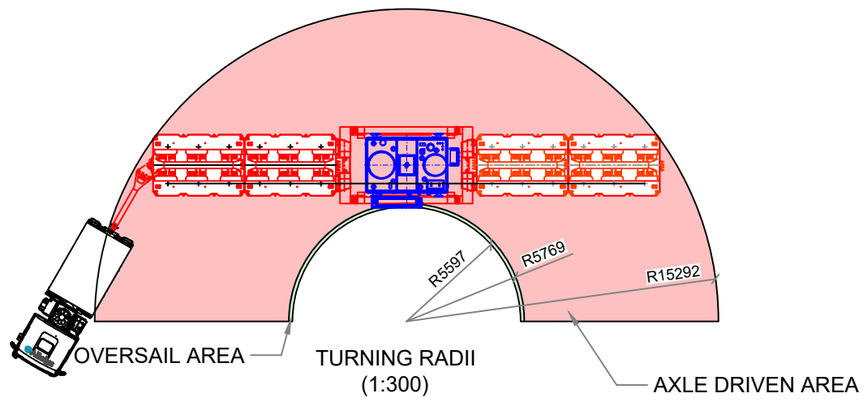


BEAM SECTION (1:50)



BOGIE SECTION (1:50)





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.
5. CARGO DIMS XXXX

TECHNICAL NOTES:

LOAD TABLE

Applied Load Weight (Te)	114.00
Trailer Tare Weight (Te)	53.64
Auxiliary Steel Work (Te)	0.00
Trailer Gross Weight (Te)	167.64
Load per Bogie (Te)	83.82
Load per Axle (Te)	13.97
Block Ground Loading (Te/m²)	3.10

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	06/03/24	First issue			
A					
B					
C					

Allelys
The Slough, Studley, Warwickshire, B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock
Title	114Te Split Phase Unit on a 6 Bed 6 Transport Arrangement
Scale (A3)	As Shown
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-TA-01

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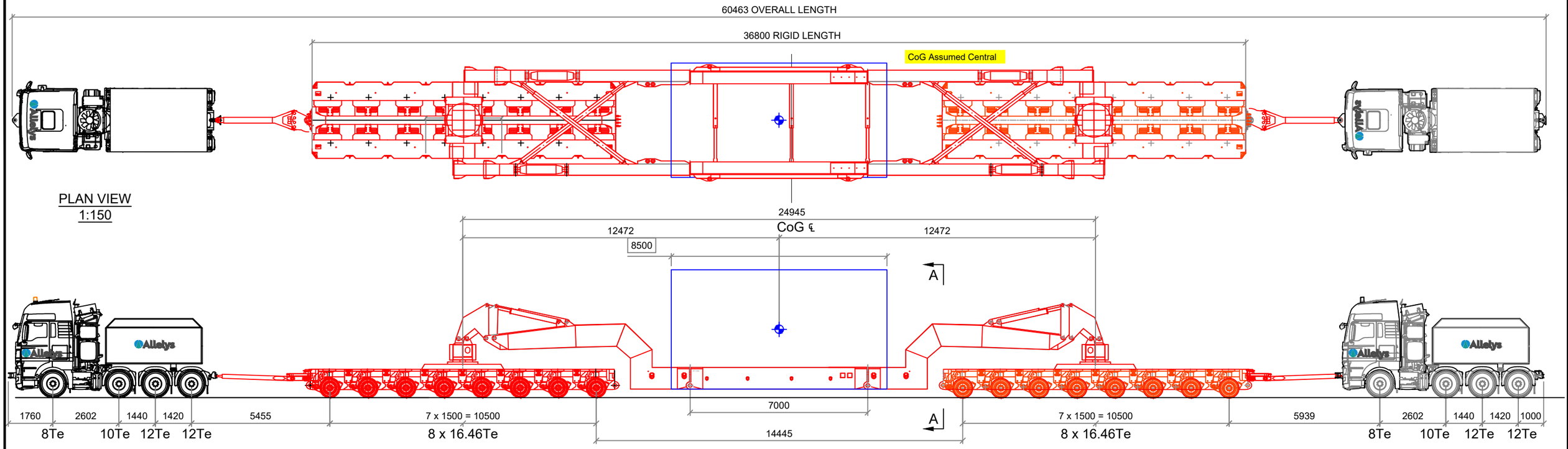
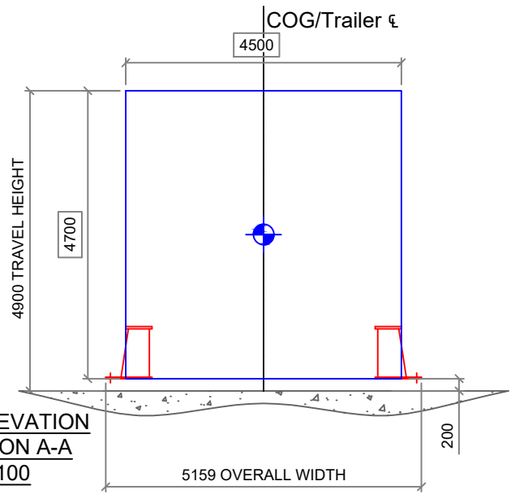


PLAN VIEW
1:150

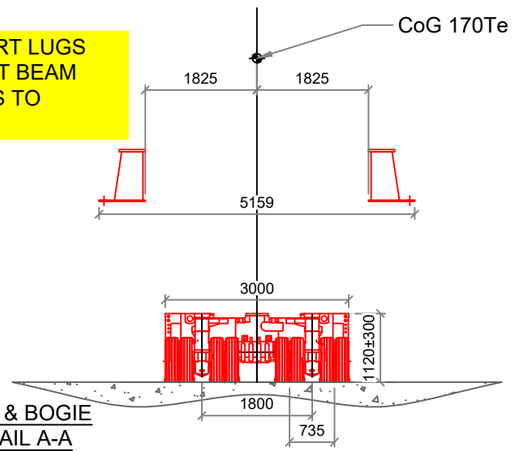
SIDE ELEVATION
1:150

STABILITY CIRCUITS
1:150

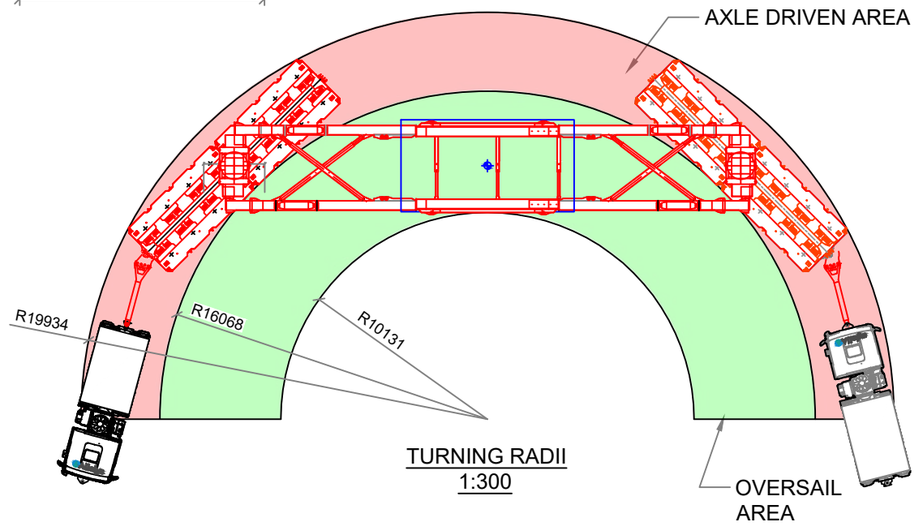


END ELEVATION
SECTION A-A
1:100

TRANSPORT LUGS
TBC EXACT BEAM
POSITIONS TO
FOLLOW



BEAM & BOGIE
DETAIL A-A
1:100



TURNING RADII
1:300

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3. ALL DRAWINGS ARE BASED UPON DETAILS PROVIDED BY THE CLIENT.
4. PLYWOOD/RUBBER SHEETS SHALL BE PROVIDED AT ALL STEEL TO STEEL INTERFACES.
5. CARGO DIMS XXXX

TECHNICAL NOTES:

LOAD TABLE	
Applied Load Weight (Te)	170.00
Girder Frame Tare Weight (Te)	45.40
Axles Tare Weight (Te)	48.00
Auxiliary Steel Work Weight (Te)	00.00
Transport Gross Weight (Te)	263.40
Load per Bogie (Te)	131.70
Load per Axle (Te)	16.46
Block Ground Loading (Te/m²)	3.66

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	06/03/24	First issue			
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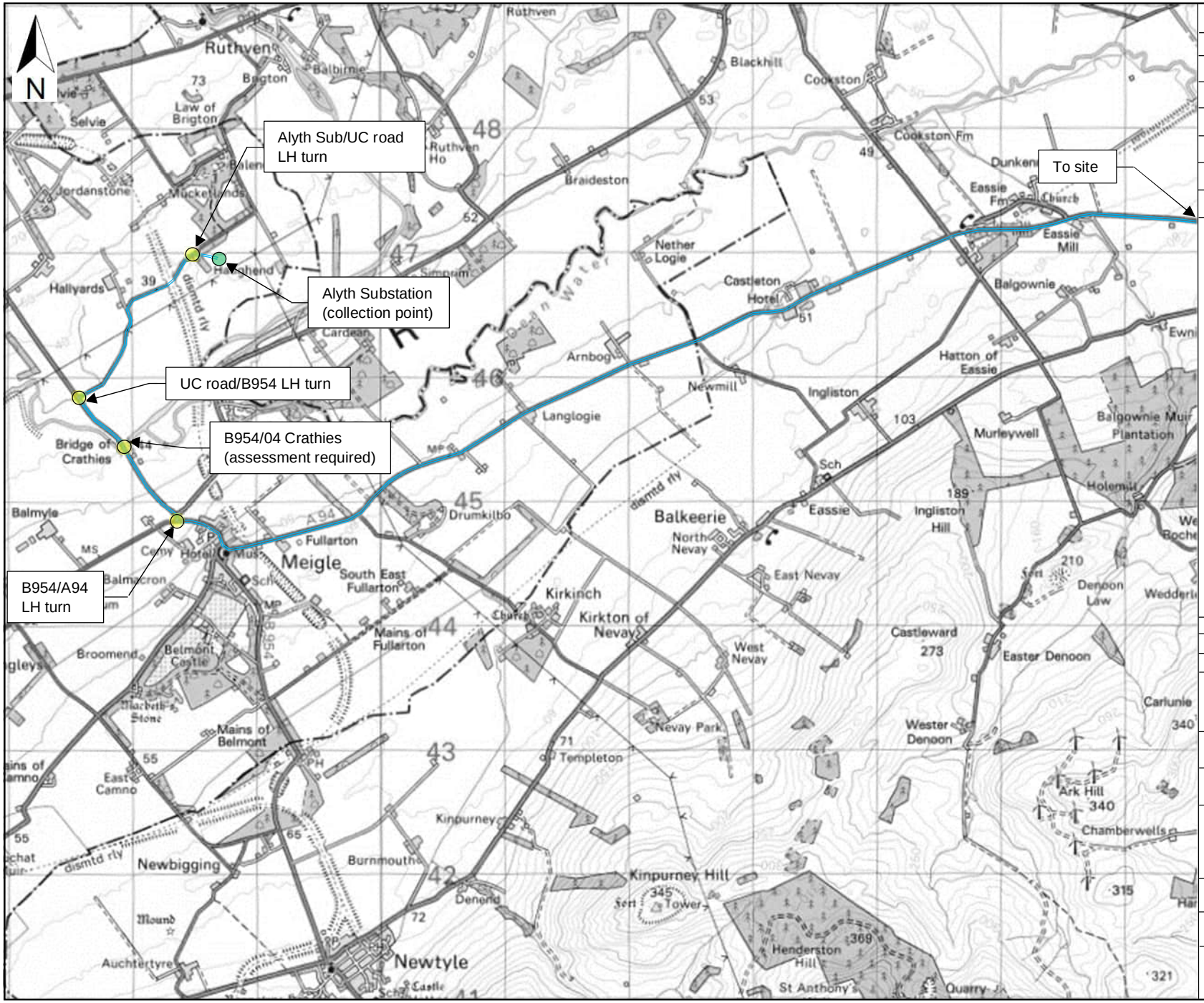
C					

Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock
Title	170Te Tx on a 16 Ax SGF Transport Arrangement
Scale (A3)	As Shown
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-TA-02

Appendix B

Maps



Key

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	Route 2
	Route 3
	Route 4
	Collection point
	Point of interest
	Delivery point

Rev.	Date	Amendments
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Revisions

Allelys
The Slough,
Studley,
Warwickshire
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client: Cnoclee Environmental Services

Project: A242453 Emmock

Title: 114 te Tx & 170 te SGT
Alyth Sub/Dundee to Emmock Sub

Doc. no.: ALL-A242453-MAP-01

Sheet: 1 of 4

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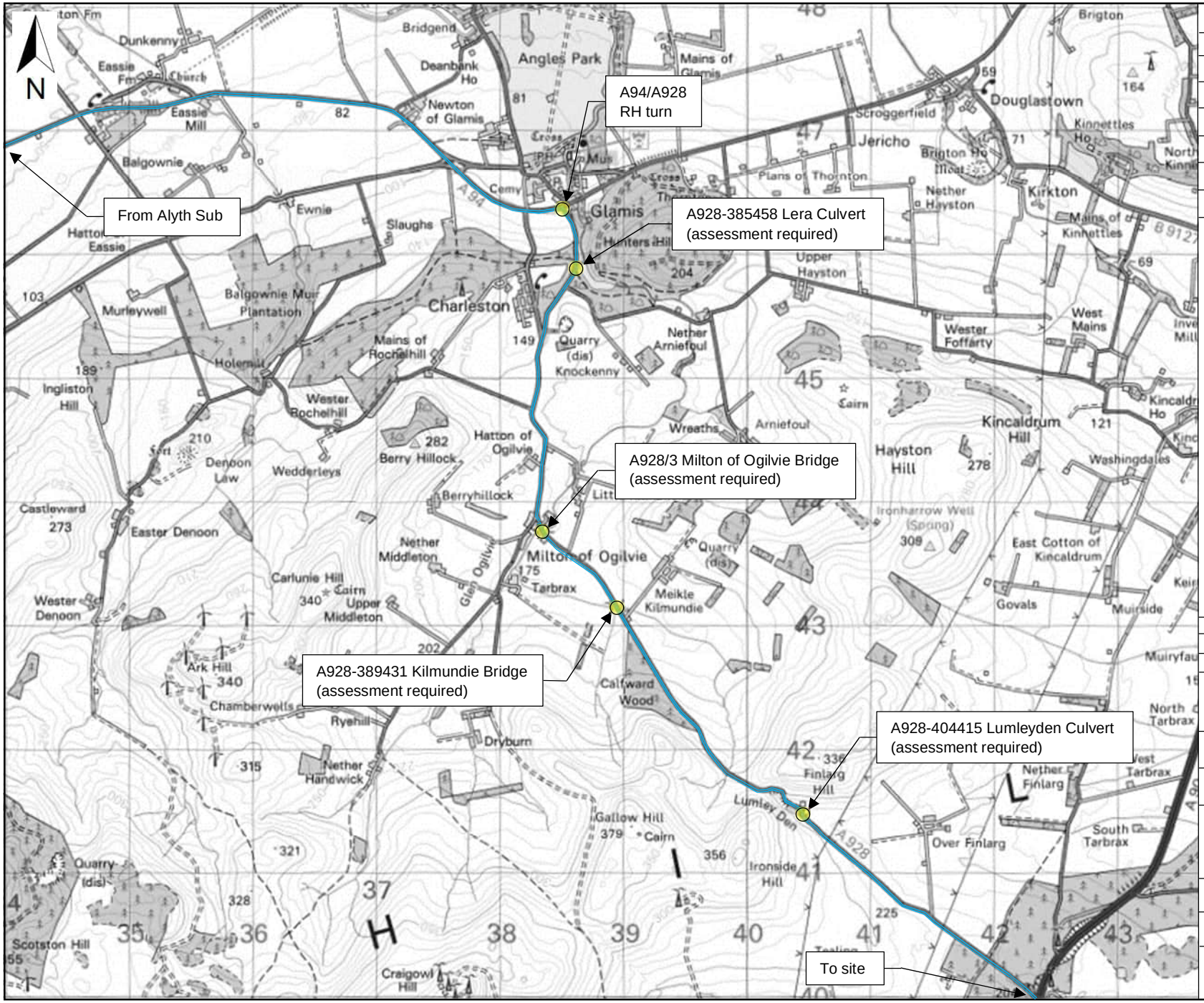

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	Collection point
	Point of interest
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Allelys
The Slough,
Studley,
Warwickshire
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

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Project: A242453 Emmock

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Alyth Sub/Dundee to Emmock Sub

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	Route 4
	Collection point
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	Delivery point

Rev.	Date	Amendments
0	10/06/24	First issue

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Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client: Cnoclee Environmental Services

Project: A242453 Emmock

Title: 114 te Tx & 170 te SGT Alyth Sub/Dundee to Emmock Sub

Doc. no.: ALL-A242453-MAP-01

Sheet: 3 of 4 | Rev.: 0

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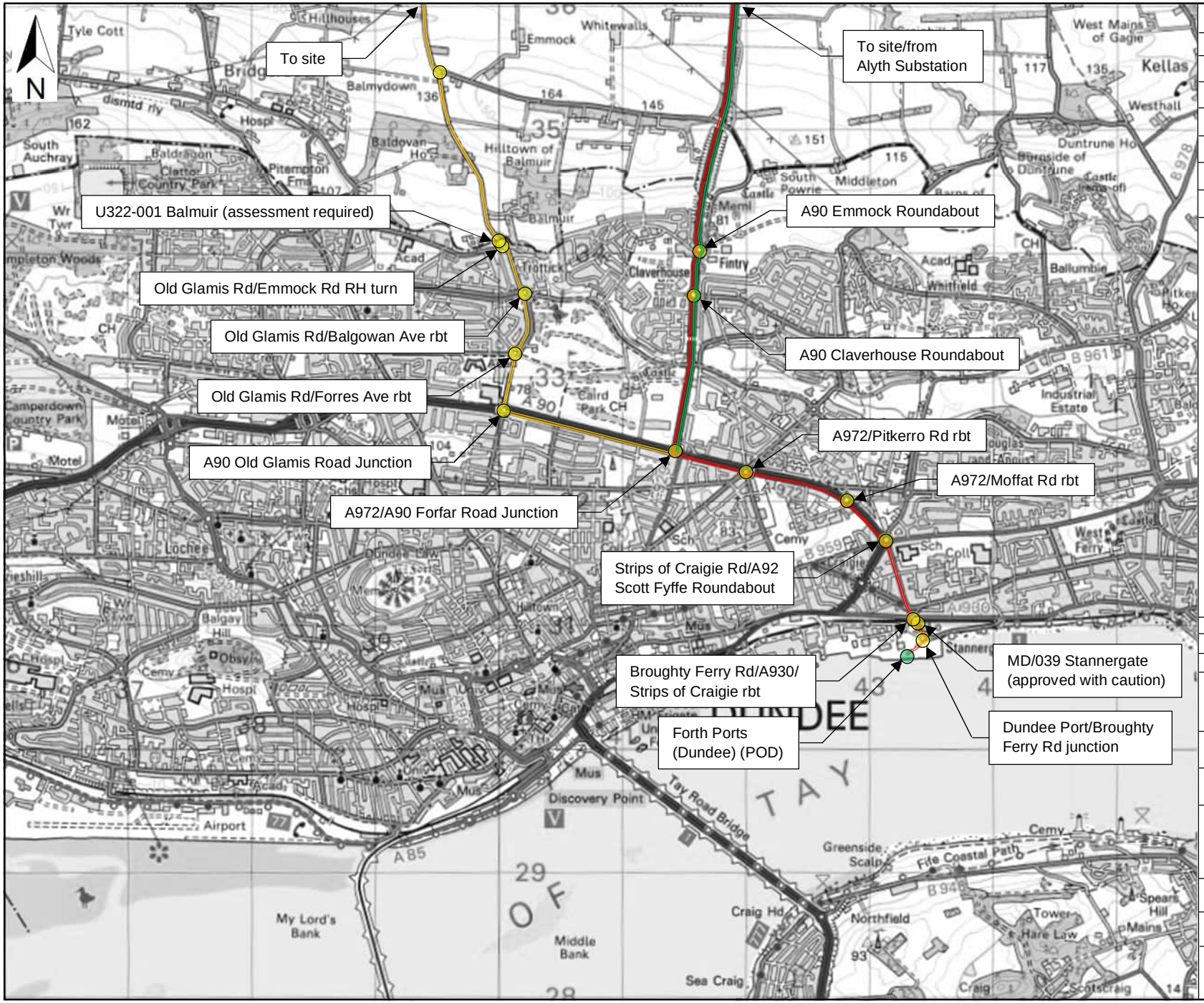

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	Route 2
	Route 3
	Route 4
	Collection point
	Point of interest
	Delivery point

Rev.	Date	Amendments
0	10/06/24	First issue

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The Slough,
Studley,
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Client
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Project
A242453 Emmock

Title
114 te Tx & 170 te SGT
Alyth Sub/Dundee to Emmock Sub

Doc. no.
ALL-A242453-MAP-01

Sheet 4 of 4 | Rev. 0

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Appendix C

Structures Details

Table 2 Route 1 structures

Structure no.	Structure name	Structural authority	Check result	Easting	Northing	Category	Type	Class	Length [m]
U100/00 C05	HALLYARDS	PERTH AND KINROSS COUNCIL	Approved	327757	745952	CULVERT	-	UNDERBRIDGE	1.40
-	UNNAMED	PERTH AND KINROSS COUNCIL	Approved	327552	745847	CULVERT	-	UNDERBRIDGE	3.50
B954/04	CRATHIES	PERTH AND KINROSS COUNCIL	Assessment required	327929	745429	ROAD BRIDGE	-	UNDERBRIDGE	-
A94/07	MEIGLE	PERTH AND KINROSS COUNCIL	Approved	328685	744759	ROAD BRIDGE	-	UNDERBRIDGE	-
A94/6	CASTLETON OF EASSIE BRIDGE	ANGUS COUNCIL	Approved	333202	746515	ROAD BRIDGE	-	UNDERBRIDGE	-
A94/7	EASSIE RAILWAY BRIDGE	ANGUS COUNCIL	Approved	335032	747190	ROAD BRIDGE	-	UNDERBRIDGE	-
A94/8	EASSIE MILL BRIDGE	ANGUS COUNCIL	Approved	335478	747247	ROAD BRIDGE	-	UNDERBRIDGE	-
A928-385458	LERA CULVERT	ANGUS COUNCIL	Assessment required	338571	745832	ROAD BRIDGE	-	UNDERBRIDGE	-
A928/3	MILTON OF OGILVIE BRIDGE	ANGUS COUNCIL	Assessment required	338346	743784	ROAD BRIDGE	-	UNDERBRIDGE	-
A928-389431	KILMUNDIE BRIDGE	ANGUS COUNCIL	Assessment required	338936	743163	ROAD BRIDGE	-	UNDERBRIDGE	-
A928-404415	LUMLEYDEN CULVERT	ANGUS COUNCIL	Assessment required	340429	741500	ROAD BRIDGE	-	UNDERBRIDGE	-
A90 390 C50	PETTERDEN	TRANSPORT SCOTLAND /AMEY (NORTH EAST SCOTLAND)	Approved	342290	739865	CULVERT	-	UNDERBRIDGE	-
C6-413383	MILL OF TEALING BRIDGE	ANGUS COUNCIL	Assessment required	341289	738337	ROAD BRIDGE	-	UNDERBRIDGE	-
C6-406383	CORALDEN BRIDGE	ANGUS COUNCIL	Assessment required	340689	738330	ROAD BRIDGE	-	UNDERBRIDGE	-

Table 3 Route 2 structures

Structure no.	Structure name	Structural authority	Check result	Easting	Northing	Category	Type	Class	Length [m]
MD/039	STANNERGATE	DUNDEE CITY COUNCIL	Approved with caution	343353	731048	ROAD BRIDGE	-	UNDERBRIDGE	-
A972 10 F	PITKERRO ROAD R/B	TRANSPORT SCOTLAND/ AMEY (NE)	N/A - overbridge	342012	732249	PEDESTRIAN BRIDGE	SIMPLY SUPPORTED SPAN	OVERBRIDGE	30.85
A90 350	LINLATHEN U/P	TRANSPORT SCOTLAND/ AMEY (NE)	Approved	341499	732895	ACCOMMODATION ACCESS UNDER	FIXED	UNDERBRIDGE	3.60
A90 360	FORFAR ROAD	TRANSPORT SCOTLAND/ AMEY (NE)	Approved	341550	733182	ROAD BRIDGE	FIXED	UNDERBRIDGE	7.60
A90 360 F	FINTRY F/B	TRANSPORT SCOTLAND/ AMEY (NE)	N/A - overbridge	341563	733331	PEDESTRIAN BRIDGE	SIMPLY SUPPORTED SPAN	OVERBRIDGE	50.70
A90 380	EMMOCK O/B	TRANSPORT SCOTLAND/ AMEY (NE)	N/A - overbridge	341795	735064	ROAD BRIDGE	CONTINUOUS SPAN	UNDER AND OVERBRIDGE	43.50
A90 380 C50	EMMOCK	TRANSPORT SCOTLAND/ AMEY (NE)	Approved	341889	735680	CULVERT	-	UNDERBRIDGE	-
A90 390	NEWBIGGING	TRANSPORT SCOTLAND/ AMEY (NE)	Approved	341922	736198	ROAD BRIDGE	FIXED	UNDERBRIDGE	4.50

Table 4 Route 3 structures

Structure no.	Structure name	Structural authority	Check result	Easting	Northing	Category	Type	Class	Length [m]
MD/039	STANNERGATE	DUNDEE CITY COUNCIL	Approved with caution	343353	731048	ROAD BRIDGE	-	UNDERBRIDGE	-
A972 10 F	PITKERRO ROAD F/B	TRANSPORT SCOTLAND /AMEY (NE)	N/A - overbridge	342012	732249	PEDESTRIAN BRIDGE	SIMPLY SUPPORTED SPAN	OVERBRIDGE	30.85
U322-001	BALMUIR	ANGUS COUNCIL & DUNDEE CITY COUNCIL	Assessment required	340003	734127	ROAD BRIDGE	-	UNDERBRIDGE	-
TBC	UNKNOWN FITHIE BURN BRIDGE	ASSUME ANGUS COUNCIL	Awaiting approval			ROAD BRIDGE	-	UNDERBRIDGE	-

Table 5 Route 4 structures

Structure no.	Structure name	Structural authority	Check result	Easting	Northing	Category	Type	Class	Length [m]
A90 390	NEWBIGGING	TRANSPORT SCOTLAND/ AMEY (NE)	Awaiting approval	341922	736198	ROAD BRIDGE	FIXED	UNDERBRIDGE	4.50

Sally Weston

From:	Andrew Brown <BrownA@angus.gov.uk>
Sent:	29 May 2024 15:54
To:	Sally Weston
Cc:	NRSWA
Subject:	FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request
Attachments:	ALL-A242453-TA-01 - 114Te Split Phase Unit on a 6Bed6.IFC.pdf; A242453 Emmock structures list.xlsx; 405.00660.00059.211 rev P0 - A94-6 Castleton of Eassie Certificate.pdf; 405.00660.00059.209 rev P0 - A94-7 Eassie Mill Railway Bridge Certificate.pdf; 405.00660.00059.207 rev P0 - A94-8 Eassie Mill Certificate.pdf
Importance:	High

Dear Sally,

Please accept my sincere apologies for the delay in my response.

In relation to the Angus Council Structures listed in your attached;

- A94/6 Castleton of Eassie – Has previously taken abnormal loadings in excess of proposed (see attached)
- A94/7 Eassie Railway Bridge - Has previously taken abnormal loadings in excess of proposed (see attached)
- A94/8 Eassie Mill Bridge - Has previously taken abnormal loadings in excess of proposed (see attached)
- A928-385458 Lera Culvert – Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928/3 Milton of Ogilvie Bridge (45 units HB) - Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928-389431 – Kilmundie Bridge - Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928-404415 – Lumleyden Culvert – no record of previous abnormal loading - Assessment would be required
- C6-413383- Mill of Tealing Bridge – no record of previous abnormal loading - Assessment would be required
- C6-406383 – Coralden Bridge – no record of previous abnormal loading - Assessment would be required

I believe Allelys were the haulier for the abnormal loads in the attached check certificates for the A94 bridges on your proposed route.

Kind regards,

Andrew

Andrew Brown | Team Leader – Coastal, Flood Risk and Structures | Angus Council | Tel: 01307 491824 | Browna@angus.gov.uk | www.angus.gov.uk

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From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 28, 2024 10:31 AM
To: Andrew Brown <BrownA@angus.gov.uk>; NRSWA <NRSWA@angus.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request
Importance: High

Good morning All,

Tried calling but didn't get any answer, please could I have an update on the below feasibility request? Its just the Angus Council structures that I'm outstanding a response for now.

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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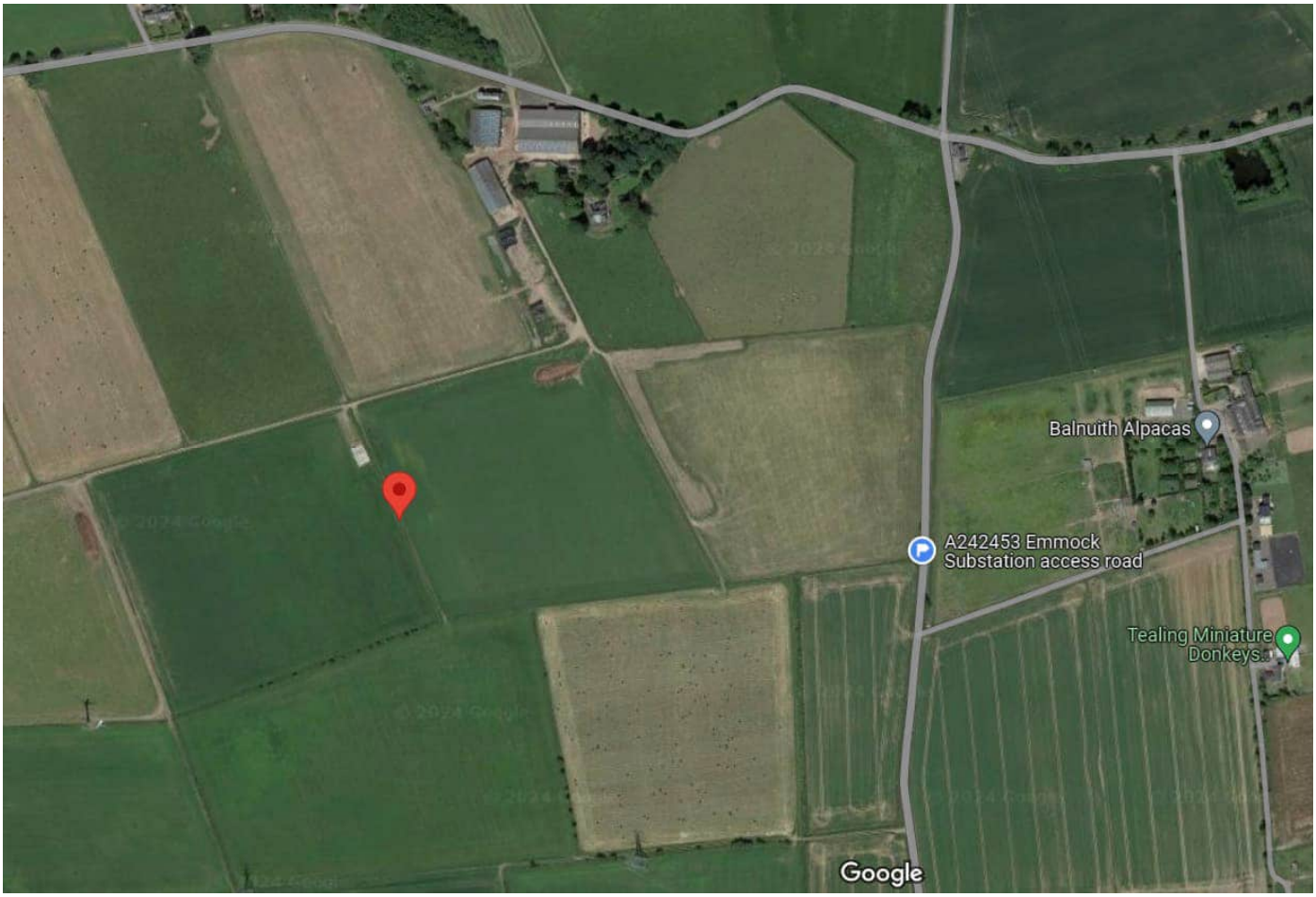
From: Sally Weston
Sent: 14 May 2024 12:14
To: abnormalloads@pkc.gov.uk; Andrew Brown <BrownA@angus.gov.uk>; NRSWA@angus.gov.uk; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>
Subject: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Good afternoon All,

Have we any update on the attached structural feasibility request please?

Route 1 – Alyth substation to site
The delivery of 114 te split phase transformer loaded onto 6bed6 trailer (drawing no. ALL-A242453-TA-01 attached) from the existing Alyth Substation to site, route link is below:
https://maps.app.goo.gl/DcGx5dqmNKNbXCej8

Site location
The proposed site entrance is at lat/long 56.527944, -2.985167 (and approx. site location shown by the red pin below), but I've had to use Tealing Miniature Donkeys to make sure that the route links work!



Many thanks,

Sally

Sally Weston CEng MRINA
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Tel: 01527 852 408 (Option 3)
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Sally Weston

From:	Derek Davidson <DTDavidson@pkc.gov.uk>
Sent:	21 May 2024 09:19
To:	Sally Weston
Cc:	Communities Abnormal Loads; Communities Structure ALR; Lachlan MacLean; Jake Eadie; James Escott
Subject:	FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request
Attachments:	Abnormal Load Response - Emmock Substation.xlsx

Hi Sally,

See attached response as requested, also copied to my colleagues in Transportation Planning and Roads Maintenance teams for their information / comment.

Best regards,
Derek

Derek Davidson C.Eng M.I.C.E
Acting Depute Structures Manager
Structures Team,
Environment and Infrastructure,
Economy, Place and Learning,
Perth & Kinross Council,
Pullar House,
35 Kinoull Street,
PERTH.
PH1 5GD

Tel: 01738 477236 (Direct Dial)
E-mail: DTDavidson@pkc.gov.uk

Report a Perth & Kinross Council road bridge, culvert or road retaining wall fault online here.
Information regarding Abnormal Load Enquiries can be found here.

From: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>
Sent: Tuesday, May 14, 2024 12:14 PM
To: Communities Structure ALR <StructureALR@pkc.gov.uk>
Subject: FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 14, 2024 12:13:44 PM (UTC+00:00) Dublin, Edinburgh, Lisbon, London
To: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Andrew Brown <BrownA@angus.gov.uk>; NRSWA@angus.gov.uk <NRSWA@angus.gov.uk>; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>
Subject: A242453 Emmock Substation 114 te split phase unit structural feasibility request

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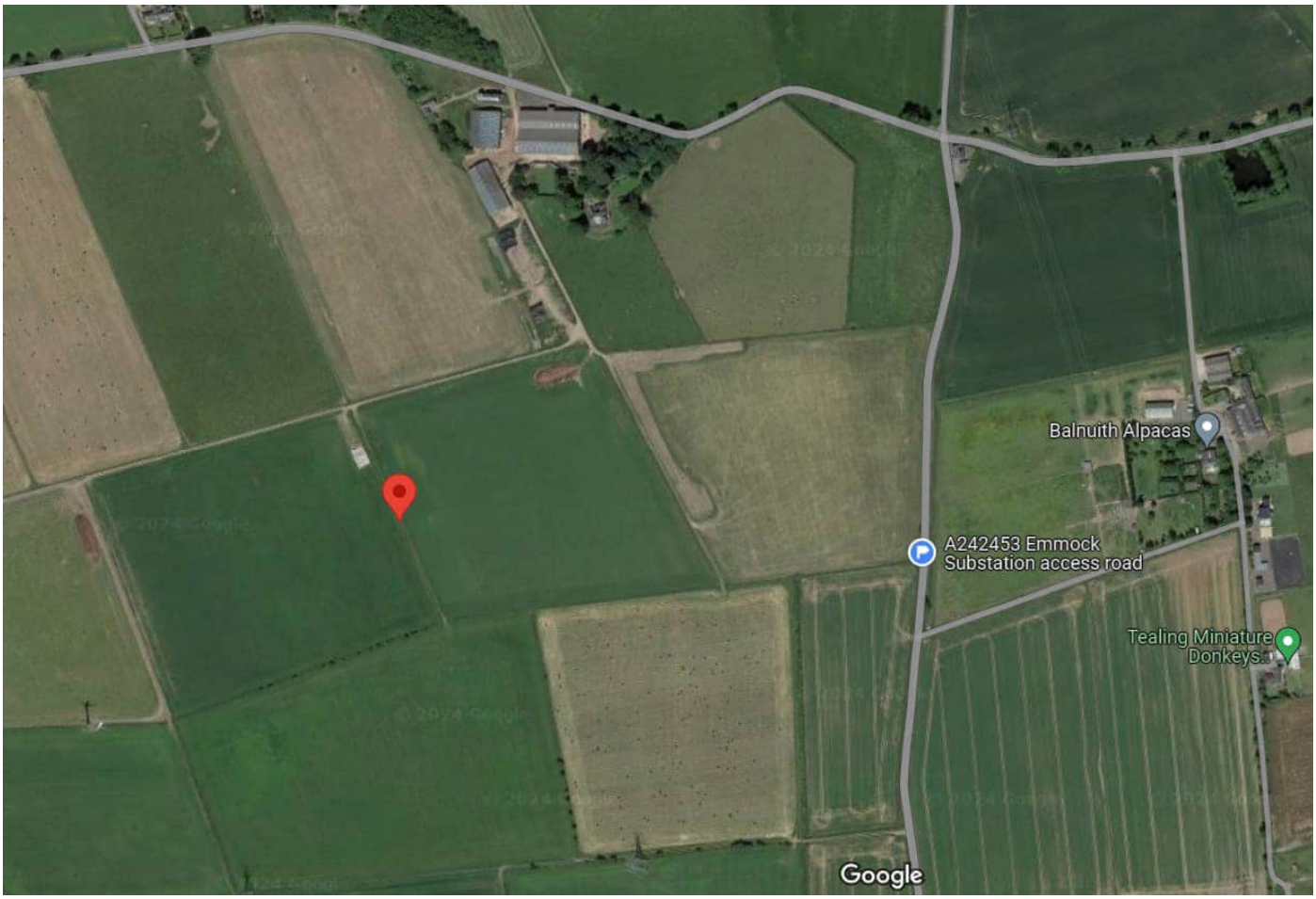
Good afternoon All,

Have we any update on the attached structural feasibility request please?

Route 1 – Alyth substation to site
The delivery of 114 te split phase transformer loaded onto 6bed6 trailer (drawing no. ALL-A242453-TA-01 attached) from the existing Alyth Substation to site, route link is below:
https://maps.app.goo.gl/DcGx5dqmNKNbXCej8

Site location
The proposed site entrance is at lat/long 56.527944, -2.985167 (and approx. site location shown by the red pin below), but I've had to use Tealing Miniature Donkeys to make sure that the route links work!



Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)

Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
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Abnormal Load Route: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Gross Vehicle Weight (Tonnes): 167

List of Structures Affected with Comments:

Structure Code	Structure Name	Easting	Northing	Construction	No. of Spans	Span Length	HA Capacity	HB Capacity	Comments
U100/00 C05	Hallyards	327,757	745,952	Box (constructed 2020)	1	1.40	Full	N/A	5. Approved for load ref. above
B954/04	Bridge of Crathies	327,929	745,428	Concrete Arch	3	15, 16.9, 15	Full	45	4. NOT APPROVED
A94/07	Meigle	328,686	744,757	Stone Arch with insitu concrete slab extensions both US and DS	2	3.47; 3.49	Full	N/A	5. Approved for load ref. above

Notes:

1. * HA Capacity – NWL: indicates no weight limit in place.
2. **HB Loading – N/A: indicates information not available
3. NOT OWNED – the structure is not owned by Perth and Kinross Council, please obtain approval from the owner prior to load movement.
4. NOT APPROVED – this structure will require inspection, assessment and potential strengthening by the haulier's client to the satisfaction of Perth and Kinross Council Structures Section prior to movement.
5. Approved for load ref. above – this structure is confirmed as having sufficient structural capacity to support the proposed load.

Sally Weston

From: Jake Eadie <JTEadie@pkc.gov.uk>
Sent: 29 May 2024 15:41
To: Sally Weston
Cc: Communities Abnormal Loads; Communities Structure ALR; Lachlan MacLean; Derek Davidson; James Escott; Willie Mahoney
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Sally,
I have confirmed with Willie Mahoney, senior engineer in this area.
Willie has confirmed the structure at the location on the B954 is structurally fine to carry your loads. There is a little bit of existing damage to the wing wall adjacent to the unclassified road however this may be repaired before your movements.

Kind Regards

Jake Eadie, Eng Tech FIHE, MIAT
Roads Maintenance Officer
Perth and Kinross Council
Roads Maintenance Partnership
Ruthvenfield Depot
Ruthvenfield Road
Inveralmond Industrial Estate
Perth
PH1 3EE
✉ Email: jteadie@pkc.gov.uk

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 28, 2024 9:24 AM
To: Jake Eadie <JTEadie@pkc.gov.uk>
Cc: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Communities Structure ALR <StructureALR@pkc.gov.uk>; Lachlan MacLean <LMacLean@pkc.gov.uk>; Derek Davidson <DTDavidson@pkc.gov.uk>; James Escott <JEscott@pkc.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Good morning Jake,

Have we any update on the small culvert query below please?

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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From: Derek Davidson <DTDavidson@pkc.gov.uk>
Sent: 21 May 2024 13:13
To: Sally Weston <sally.weston@allelys.co.uk>
Cc: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Communities Structure ALR <StructureALR@pkc.gov.uk>; Lachlan MacLean <LMacLean@pkc.gov.uk>; Jake Eadie <JTEadie@pkc.gov.uk>; James Escott <JEscott@pkc.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Sally,
We don't have that one on record in this team so I can only assume that is a small culvert <1.5m span, my colleague Jake can hopefully confirm from a road maintenance perspective.
Kind regards,
Derek.

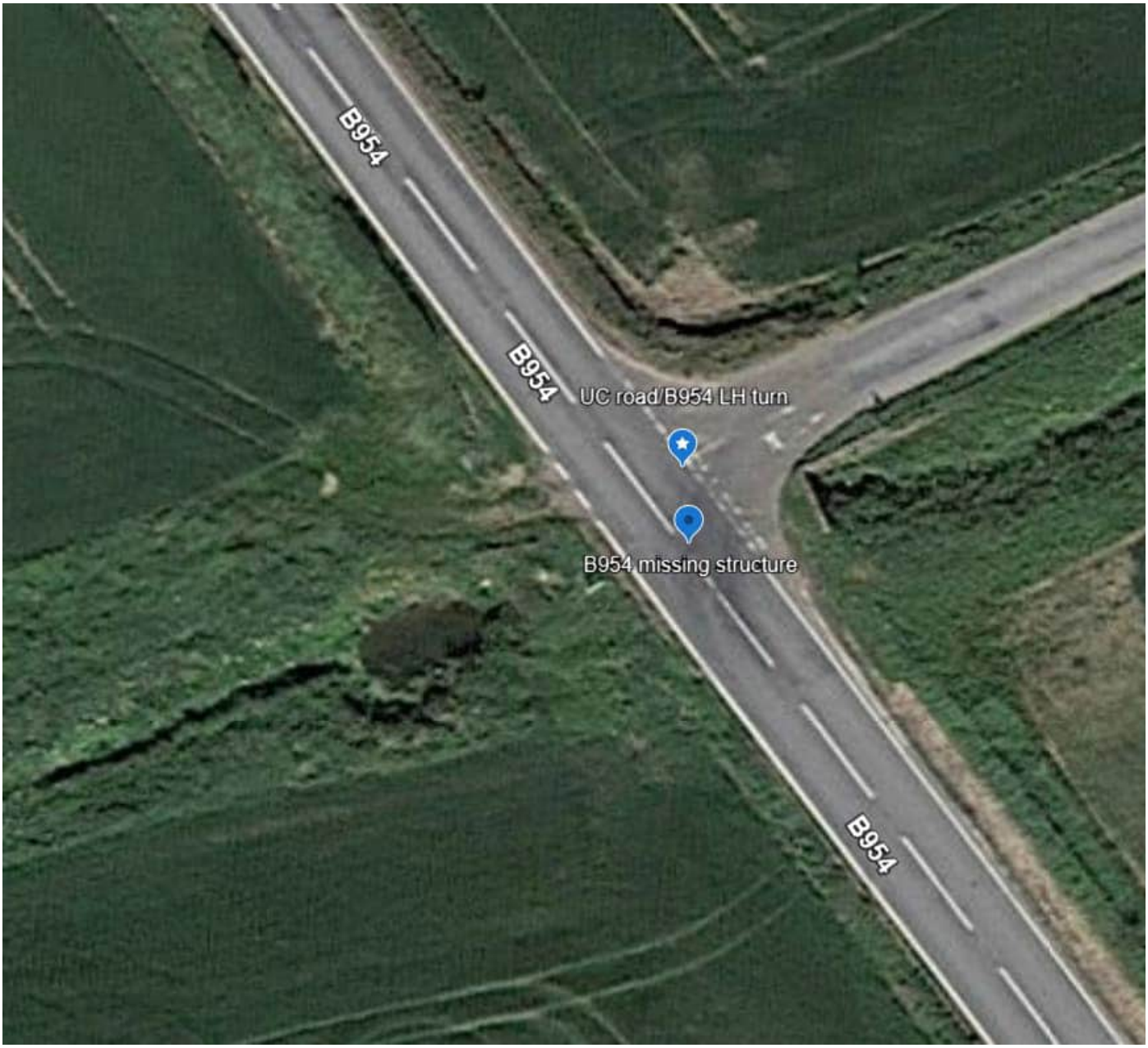
From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 21, 2024 12:17 PM
To: Derek Davidson <DTDavidson@pkc.gov.uk>
Cc: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Communities Structure ALR <StructureALR@pkc.gov.uk>; Lachlan MacLean <LMacLean@pkc.gov.uk>; Jake Eadie <JTEadie@pkc.gov.uk>; James Escott <JEscott@pkc.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Derek,

I've been updating my structures info and have noticed a structure that isn't shown on ESDAL or on either of our lists, and am wondering if it's one of yours?

It appears to be a short span culvert on the B954 at the junction with the unclassified road from Alyth Substation. Lat/long 56.598897, -3.1815472.

Please see below satellite and street view screenshots.


B954
B954
UC road/B954 LH turn
B954 missing structure
B954

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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Cc: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Communities Structure ALR <StructureALR@pkc.gov.uk>; Lachlan MacLean <LMacLean@pkc.gov.uk>; Jake Eadie <JTEadie@pkc.gov.uk>; James Escott <JEscott@pkc.gov.uk>
Subject: FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Sally,

See attached response as requested, also copied to my colleagues in Transportation Planning and Roads Maintenance teams for their information / comment.

Best regards,
Derek

Derek Davidson C.Eng M.I.C.E
Acting Depute Structures Manager
Structures Team,
Environment and Infrastructure,
Economy, Place and Learning,
Perth & Kinross Council,
Pullar House,
35 Kinoull Street,
PERTH.
PH1 5GD

Tel: 01738 477236 (Direct Dial)
E-mail: DTDavidson@pkc.gov.uk

Report a Perth & Kinross Council road bridge, culvert or road retaining wall fault online here.
Information regarding Abnormal Load Enquiries can be found here.

From: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>
Sent: Tuesday, May 14, 2024 12:14 PM
To: Communities Structure ALR <StructureALR@pkc.gov.uk>
Subject: FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 14, 2024 12:13:44 PM (UTC+00:00) Dublin, Edinburgh, Lisbon, London
To: Communities Abnormal Loads <AbnormalLoads@pkc.gov.uk>; Andrew Brown <BrownA@angus.gov.uk>; NRSWA@angus.gov.uk <NRSWA@angus.gov.uk>; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>
Subject: A242453 Emmock Substation 114 te split phase unit structural feasibility request

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Site location
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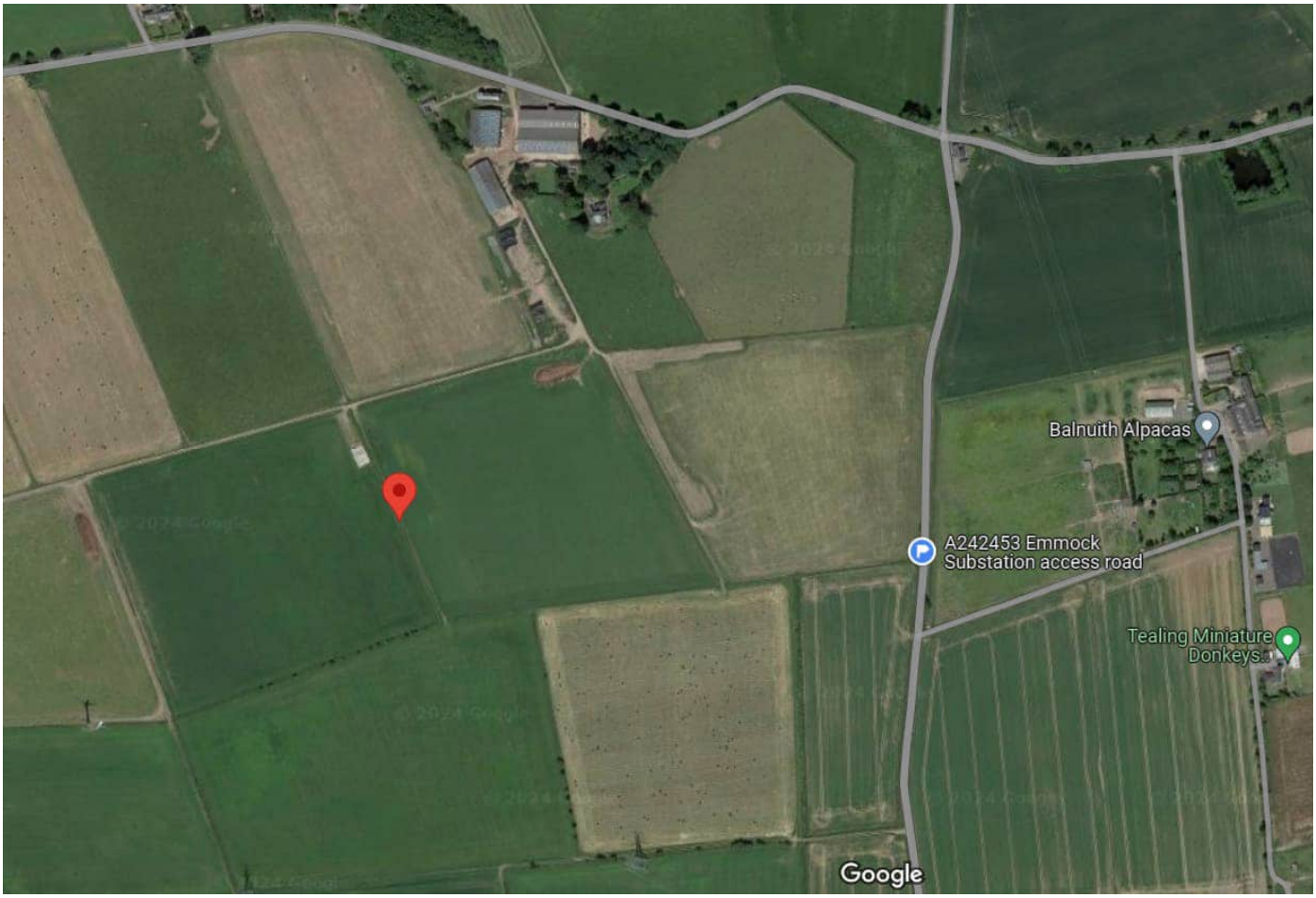

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
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Sally Weston

From: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>
Sent: 22 May 2024 15:08
To: Sally Weston
Subject: Fw: A242453 Emmock Substation 170 te SGT structural feasibility request
Attachments: ALL-A242453-TA-02 170Te Tx 16Ax SGF.pdf

Hi Sally,

See attached response from our Bridges team regarding the Stannergate Bridge.

Regards

Mark Cobb
Assistant Engineer (Network Management) at Dundee City Council

E mark.cobb@dundeecity.gov.uk
M 07939 282884
W www.dundeecity.gov.uk
A Contracts House, 1 Soutar Street, Dundee, DD3 8SS

From: Graeme Boyd <graeme.boyd@dundeecity.gov.uk>
Sent: 22 May 2024 10:13
To: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>
Subject: FW: A242453 Emmock Substation 170 te SGT structural feasibility request

Morning Mark,

We have reviewed this Abnormal load vehicle and can confirm that the Stannergate Bridge is suitable for the vehicle loading. This is assuming that there are no other vehicles on the bridge at the time of crossing and that the abnormal load vehicle drives down the middle of the bridge.

Regards,

Graeme Boyd CEng MICE
Principal Engineer (Design & Property Services) at Dundee City Council

E graeme.boyd@dundeecity.gov.uk
P 01382 433036
M 07776668446
W www.dundeecity.gov.uk

A Dundee House, 50 North Lindsay Street, DUNDEE, DD1 1QE

From: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>
Sent: Tuesday, May 21, 2024 4:19 PM
To: Graeme Boyd <graeme.boyd@dundeecity.gov.uk>
Subject: Fw: A242453 Emmock Substation 170 te SGT structural feasibility request

Hi Graeme,

Can you have a look at the attached abnormal load and let me know if the Stannergate Bridge is suitable?

Thanks

Mark Cobb
Assistant Engineer (Network Management) at Dundee City Council

E mark.cobb@dundeecity.gov.uk
M 07939 282884
W www.dundeecity.gov.uk
A Contracts House, 1 Soutar Street, Dundee, DD3 8SS

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: 21 May 2024 16:10
To: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>
Subject: RE: A242453 Emmock Substation 170 te SGT structural feasibility request

Hi Mark,

Just wondering whether our 16-axle girder frame can cross structure no. MD/039 Stannergate?

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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From: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>
Sent: 21 May 2024 15:50
To: Sally Weston <sally.weston@allelys.co.uk>
Subject: Re: A242453 Emmock Substation 170 te SGT structural feasibility request

Hi Sally,

What information do you need regarding these routes?
Previous movements have used Strips of Craigie Road directly onto the trunk road.

Regards

Mark Cobb
Assistant Engineer (Network Management) at Dundee City Council

E mark.cobb@dundeecity.gov.uk
M 07939 282884
W www.dundeecity.gov.uk
A Contracts House, 1 Soutar Street, Dundee, DD3 8SS

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: 14 May 2024 12:07
To: Mark Cobb <Mark.Cobb@dundeecity.gov.uk>; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>; NRSWA@angus.gov.uk <NRSWA@angus.gov.uk>; Andrew Brown <BrownA@angus.gov.uk>
Subject: A242453 Emmock Substation 170 te SGT structural feasibility request

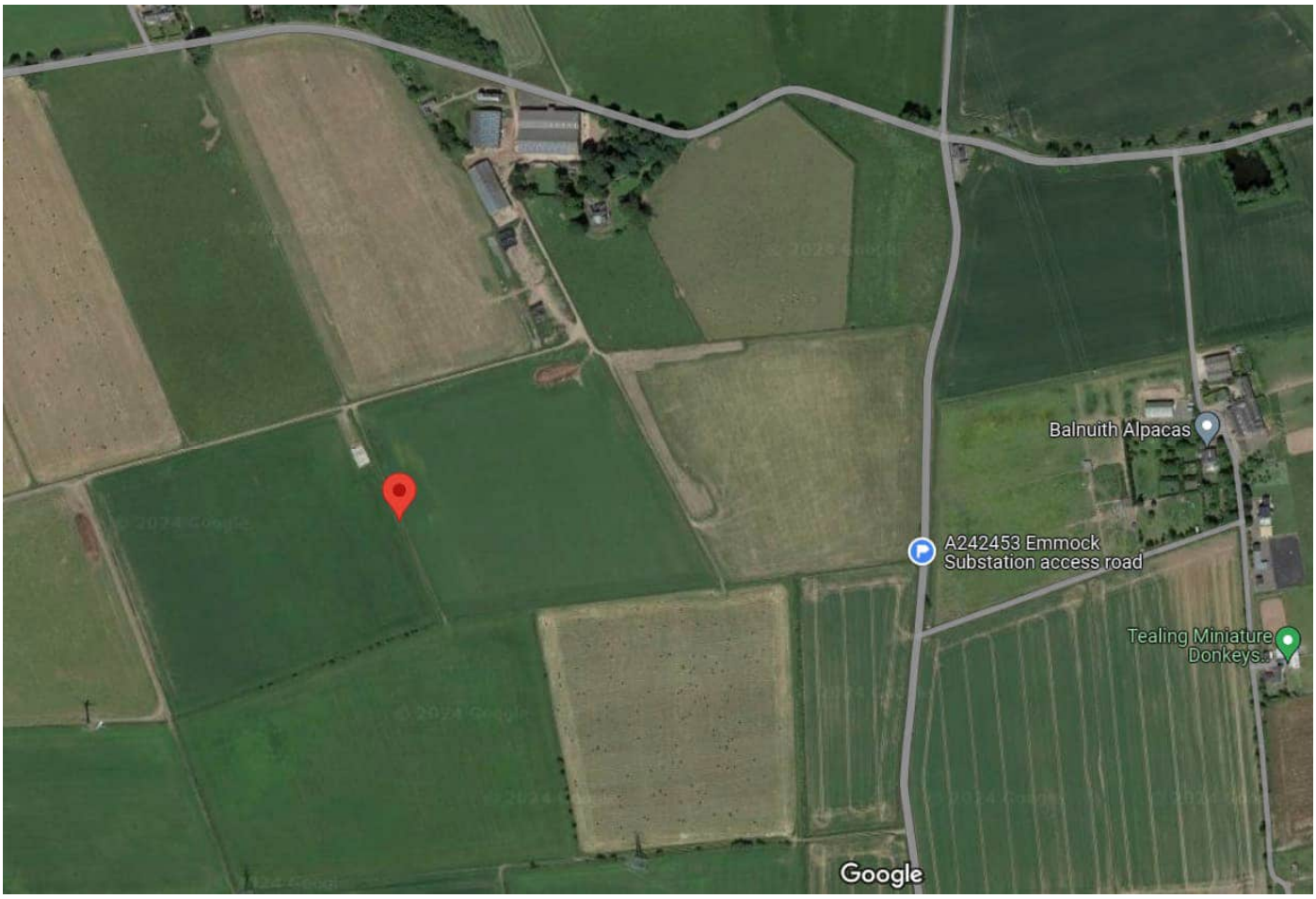
Good afternoon All,

Have we any update on the attached structural feasibility request please? Summary of the routes shown below.

Route 2: https://maps.app.goo.gl/fhg1UJZ7X2wia4fz6 with the use of the AIL crossings at Broughty Ferry Rd/A930/Strips of Craigie Rd roundabout and Scott Fyffe Roundabout.

Route 3: https://maps.app.goo.gl/U4oLQvnYhuCoAhhp9 also using the AIL crossings in Dundee.

Site location
The proposed site entrance is at lat/long 56.527944, -2.985167 (and approx. site location shown by the red pin below), but I've had to use Tealing Miniature Donkeys to make sure that the route links work!



Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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Sally Weston

From: James Bryce <James.Bryce1@amey.co.uk>
Sent: 08 May 2024 11:48
To: Sally Weston
Cc: Abnormal-loadNE
Subject: RE: A242453 Emmock Substation 114 te split phase unit and 170 te SGT structural feasibility request

Good Morning Sally,

Apologies in the delay in reply, however we have now run both route options and can confirm that both would be suitable in regards to structure capacities that we oversee. Despite this confirmation of the feasibility of your movements, we require that prior to any movement taking place an official final movement order is submitted either directly or through ESDAL which contains all info on routes, vehicles and your indemnity.

If you require anything further please get in touch,

All the best,

Jamie Bryce MEng (he/him/his)
Graduate Engineer | Structures | NE NMC

Amey

✆ 07508 321 328
✉ james.bryce1@amey.co.uk
Caledonian House, West Kinfauns, Perth, PH2 7XZ
amey.co.uk

From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, March 12, 2024 11:14 PM
To: NRSWA@angus.gov.uk; Andrew Brown <BrownA@angus.gov.uk>; mortonp@angus.co.uk; Mark Cobb <Mark.Cobb@dundeecity.gov.uk>; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>; Irene.Young@transport.gov.scot; Abnormal-loadNE <Abnormal-loadNE@amey.co.uk>
Subject: A242453 Emmock Substation 114 te split phase unit and 170 te SGT structural feasibility request

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Good evening All,

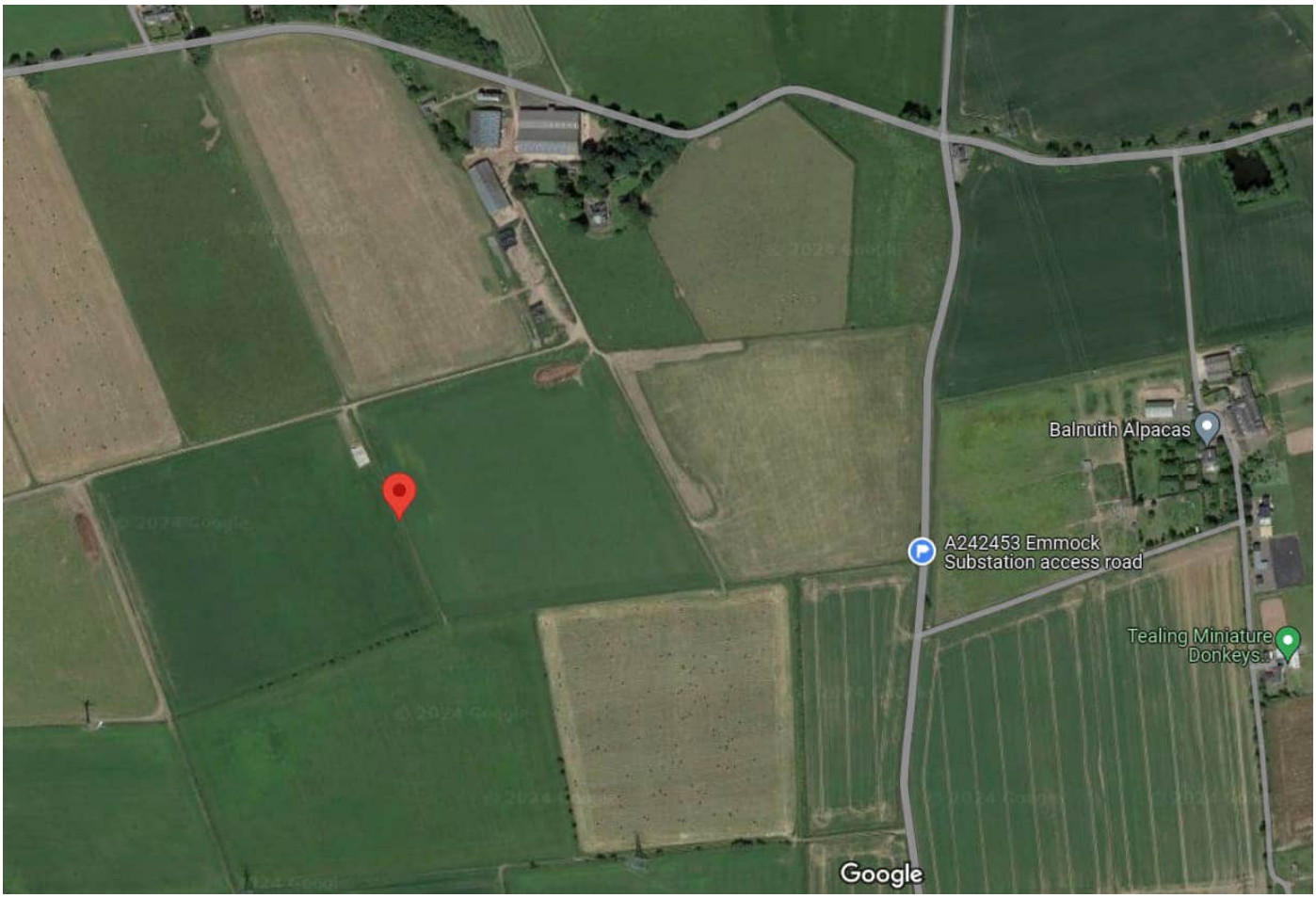
We're currently undertaking a route feasibility study for delivery of transformers to a new site close to the existing Tealing Substation. There are two cargoes and two routes being considered, as follows.

Route 1 – Alyth substation to site

The first is the delivery of 114 te transformer loaded onto 6bed6 trailer (drawing no. ALL-A242453-TA-01 attached) from the existing Alyth Substation to site, route link is below:
https://maps.app.goo.gl/pimgjWJ1SEpFM82XA

Route 2 – Port of Dundee to site
The second is the delivery of 170 te SGT loaded onto 16-axle girder frame trailer (drawing no. ALL-A242453-TA-02 attached) from Dundee to site, route link is below:
Route 2 - https://maps.app.goo.gl/fhg1UJZ7X2wia4fz6 although we will be using the AIL crossings at the Broughty Ferry Rd/A930/Strips of Craigie Rd roundabout and Scott Fyffe Roundabout.

Site location
The proposed site entrance is at lat/long 56.527944, -2.985167 (and approx. site location shown by the red pin below), but I've had to use Tealing Miniature Donkeys to make sure that the route links work!



Please could you give your thoughts on the feasibility of moving the transformers on the respective routes?

National Highways have asked us to contact stakeholders outside of ESDAL as this is currently only a feasibility study.

I've attached a list of structures on both routes taken from ESDAL, for assistance.

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk

Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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Sally Weston

From: Andrew Brown <BrownA@angus.gov.uk>
Sent: 29 May 2024 18:12
To: Sally Weston
Cc: NRSWA
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Sally,

Yes U322-001 Balmuir is jointly owned by Angus Council and Dundee City Council. I unfortunately do not have abnormal loading history in relation to this bridge and therefore it would require an assessment to be undertaken.

Kind regards,

Andrew

Andrew Brown | Team Leader – Coastal, Flood Risk and Structures | Angus Council | Tel: 01307 491824 | Browna@angus.gov.uk | www.angus.gov.uk

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From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Wednesday, May 29, 2024 4:41 PM
To: Andrew Brown <BrownA@angus.gov.uk>
Cc: NRSWA <NRSWA@angus.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Hi Andrew,

Thanks very much, that's great. And yes, I expect our vehicles were used for the previous assessments as we've been delivering to National Grid's Tealing Substation recently.

I see that U322-001 Balmuir is missing from your list below, please could you confirm the status of this one? I see that ESDAL shows Angus Council and Dundee City Council having joint ownership, is this correct? We've done some physical negotiability checks coming through Tealing village itself and have major concerns so I'm now looking at using a different route to approach the site from the south, meaning that both the 6bed6 trailer and the 16-axle girder frame would need to cross Balmuir. The span appears to be quite long, which makes it more of a risk to our deliveries.

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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From: Andrew Brown <BrownA@angus.gov.uk>
Sent: 29 May 2024 15:54
To: Sally Weston <sally.weston@allelys.co.uk>
Cc: NRSWA <NRSWA@angus.gov.uk>
Subject: FW: A242453 Emmock Substation 114 te split phase unit structural feasibility request
Importance: High

Dear Sally,

Please accept my sincere apologies for the delay in my response.

In relation to the Angus Council Structures listed in your attached;

- A94/6 Castleton of Eassie – Has previously taken abnormal loadings in excess of proposed (see attached)
- A94/7 Eassie Railway Bridge - Has previously taken abnormal loadings in excess of proposed (see attached)
- A94/8 Eassie Mill Bridge - Has previously taken abnormal loadings in excess of proposed (see attached)
- A928-385458 Lera Culvert – Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928/3 Milton of Ogilvie Bridge (45 units HB) - Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928-389431 – Kilmundie Bridge - Largest previous abnormal load recorded on route is 62T over 7 axles – Assessment would be required
- A928-404415 – Lumleyden Culvert – no record of previous abnormal loading - Assessment would be required
- C6-413383- Mill of Tealing Bridge – no record of previous abnormal loading - Assessment would be required
- C6-406383 – Coralden Bridge – no record of previous abnormal loading - Assessment would be required

I believe Allelys were the haulier for the abnormal loads in the attached check certificates for the A94 bridges on your proposed route.

Kind regards,

Andrew

Andrew Brown | Team Leader – Coastal, Flood Risk and Structures | Angus Council | Tel: 01307 491824 | Browna@angus.gov.uk | www.angus.gov.uk

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From: Sally Weston <sally.weston@allelys.co.uk>
Sent: Tuesday, May 28, 2024 10:31 AM
To: Andrew Brown <BrownA@angus.gov.uk>; NRSWA <NRSWA@angus.gov.uk>
Subject: RE: A242453 Emmock Substation 114 te split phase unit structural feasibility request
Importance: High

Good morning All,

Tried calling but didn't get any answer, please could I have an update on the below feasibility request? Its just the Angus Council structures that I'm outstanding a response for now.

Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)

Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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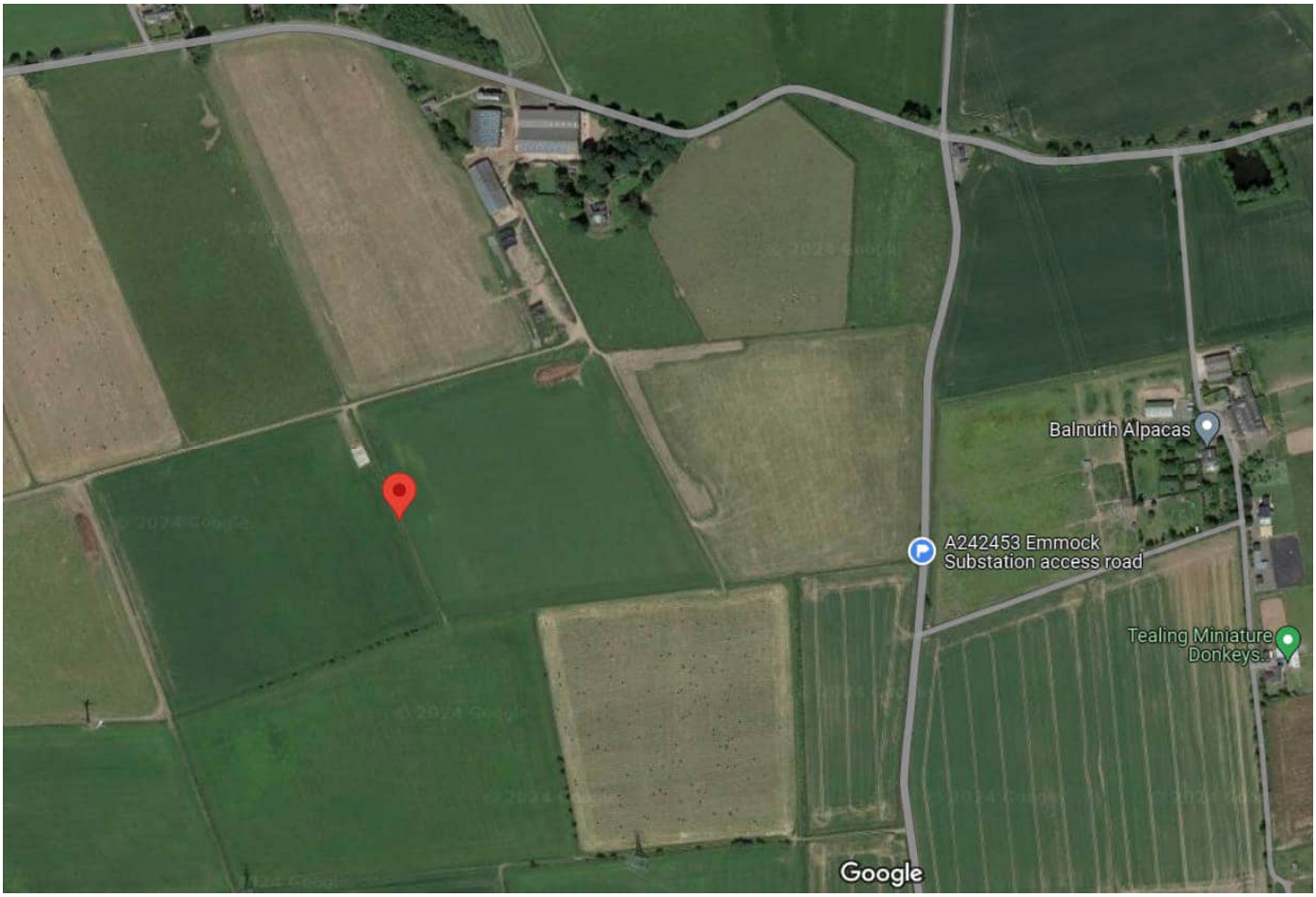
From: Sally Weston
Sent: 14 May 2024 12:14
To: abnormalloads@pkc.gov.uk; Andrew Brown <BrownA@angus.gov.uk>; NRSWA@angus.gov.uk; OSD Abnormal Loads Scotland <OSDAbnormalLoadsScotland@scotland.police.uk>
Subject: A242453 Emmock Substation 114 te split phase unit structural feasibility request

Good afternoon All,

Have we any update on the attached structural feasibility request please?

Route 1 – Alyth substation to site
The delivery of 114 te split phase transformer loaded onto 6bed6 trailer (drawing no. ALL-A242453-TA-01 attached) from the existing Alyth Substation to site, route link is below:
https://maps.app.goo.gl/DcGx5dqmNKNbXCej8

Site location
The proposed site entrance is at lat/long 56.527944, -2.985167 (and approx. site location shown by the red pin below), but I've had to use Tealing Miniature Donkeys to make sure that the route links work!



Many thanks,

Sally

Sally Weston CEng MRINA
Specialist Transport Route Planner
Allelys

Tel: 01527 852 408 (Option 3)
Mob: +44(0)7985 899 046
Web: www.allelys.co.uk
Email: sally.weston@allelys.co.uk
Address: The Slough, Studley, Warwickshire, B80 7EN

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Appendix D

Swept Path Assessments

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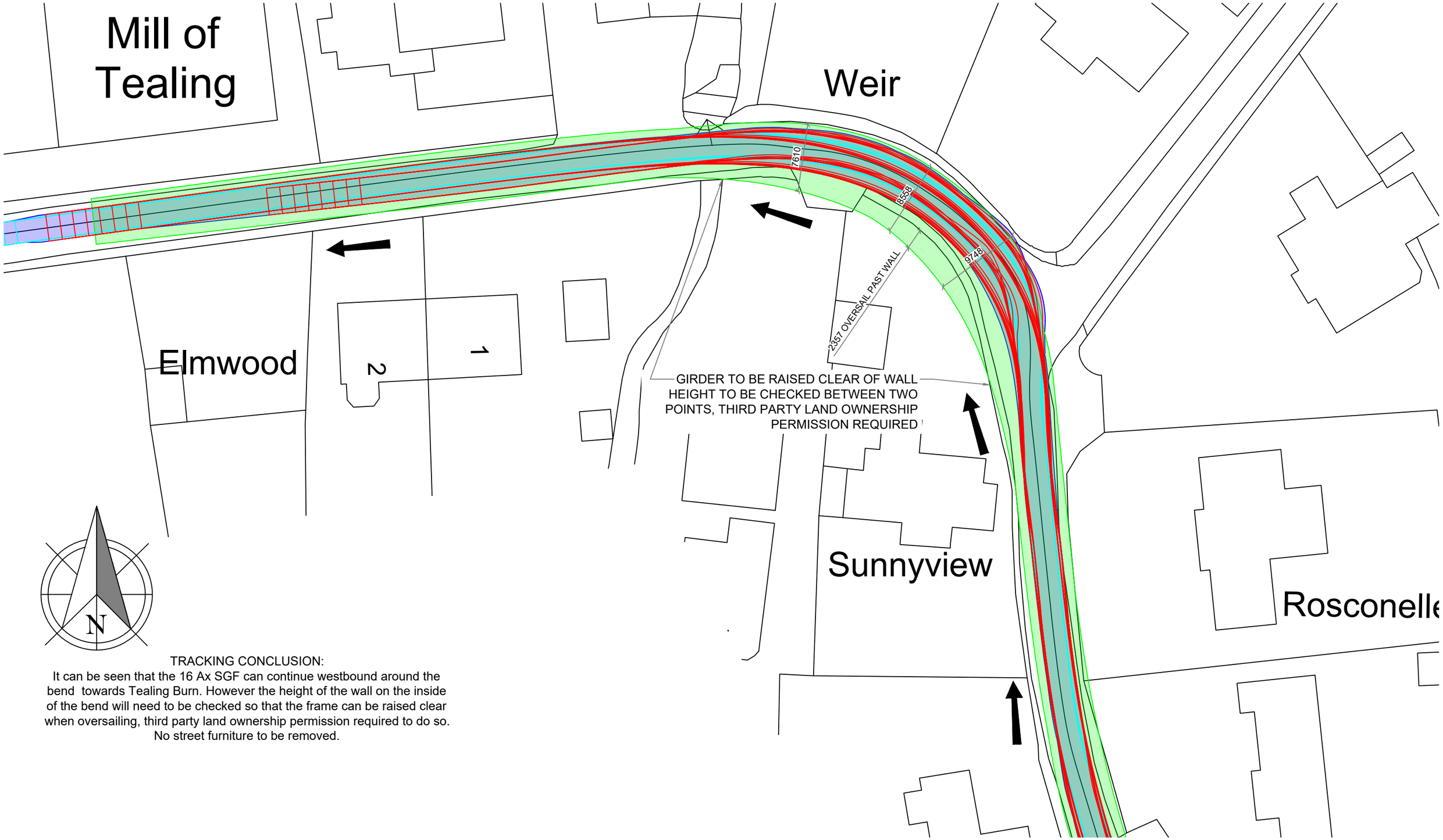

TRACKING CONCLUSION:

It can be seen that the 16 Ax SGF can continue westbound around the bend towards Tealing Burn. However the height of the wall on the inside of the bend will need to be checked so that the frame can be raised clear when oversailing, third party land ownership permission required to do so. No street furniture to be removed.

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:

What Three Words: ///radio.trains.jeeps
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	02/05/24	First issue			
A					
B					
C					

Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA Westbound towards Tealing Burn
Scale (A3)	1:400
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-01

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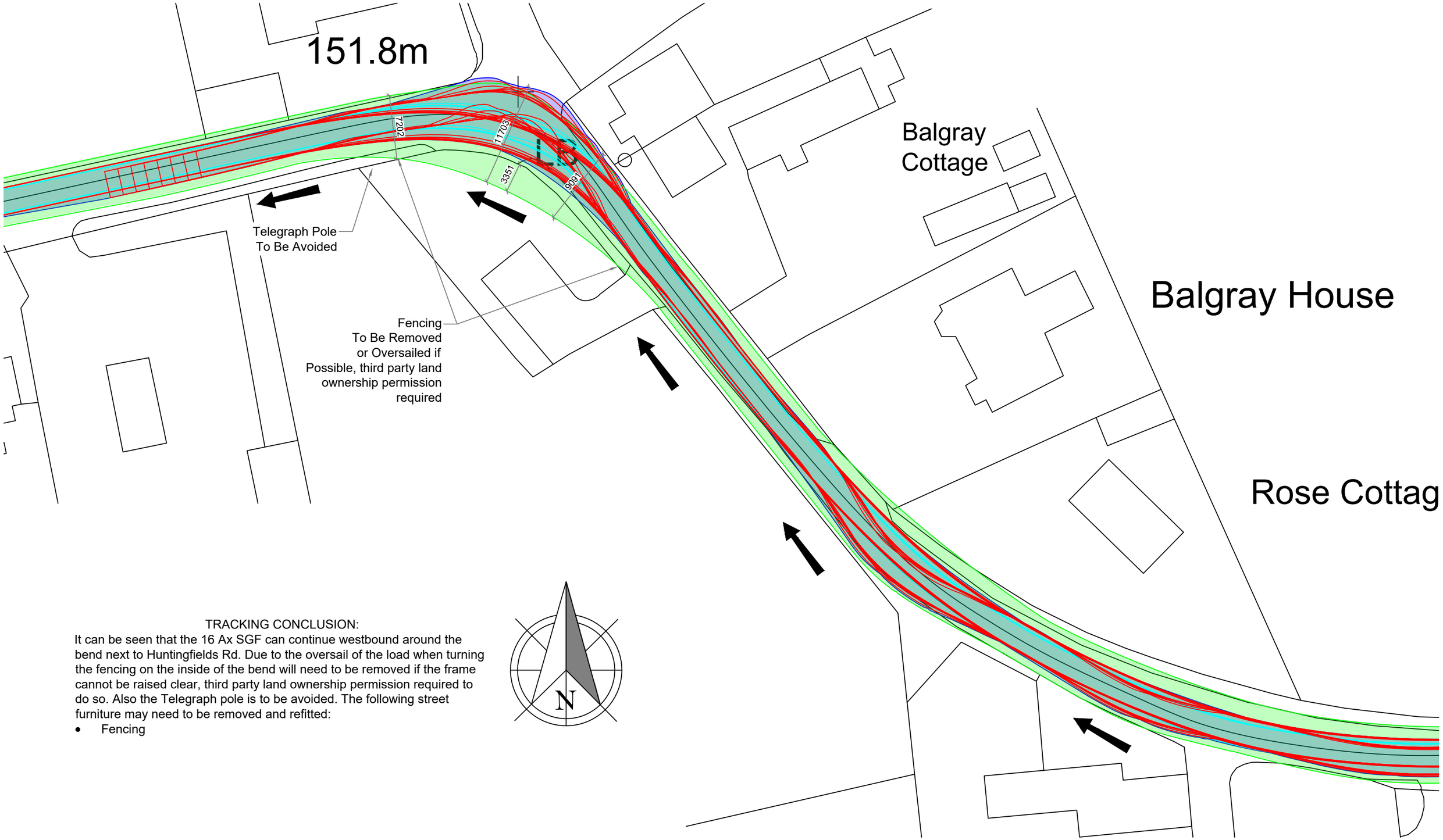

TRACKING CONCLUSION:

It can be seen that the 16 Ax SGF can continue westbound around the bend next to Huntingfields Rd. Due to the oversail of the load when turning the fencing on the inside of the bend will need to be removed if the frame cannot be raised clear, third party land ownership permission required to do so. Also the Telegraph pole is to be avoided. The following street furniture may need to be removed and refitted:

- Fencing

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:

What Three Words: ///wanted.quiet.activism
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	02/05/24	First issue			
A					
B					
C					

Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA Westbound around bend next to Huntingfaulds Rd
Scale (A3)	1:400
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-02

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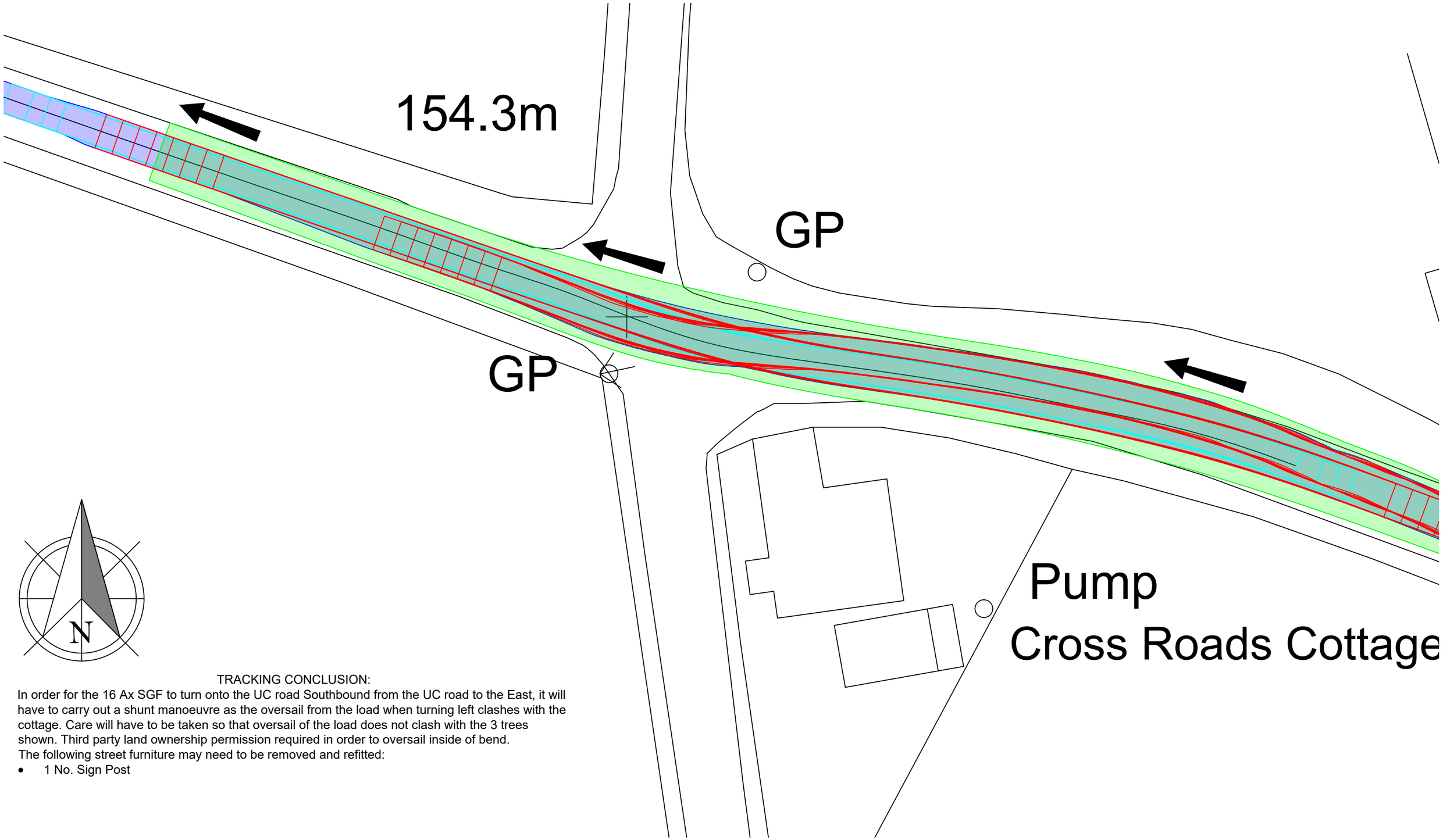

TRACKING CONCLUSION:

In order for the 16 Ax SGF to turn onto the UC road Southbound from the UC road to the East, it will have to carry out a shunt manoeuvre as the oversail from the load when turning left clashes with the cottage. Care will have to be taken so that oversail of the load does not clash with the 3 trees shown. Third party land ownership permission required in order to oversail inside of bend.
The following street furniture may need to be removed and refitted:

- 1 No. Sign Post

DRAWING NOTES:

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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:

What Three Words: ///look.giant.star
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	02/05/24	First issue			
A					
B					
C					

Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA UC Road Westbound onto UC Road Southbound
Scale (A3)	1:300
Sheet No.	1
Total No.	2
Dwg. No	ALL-A242453-SPA-03

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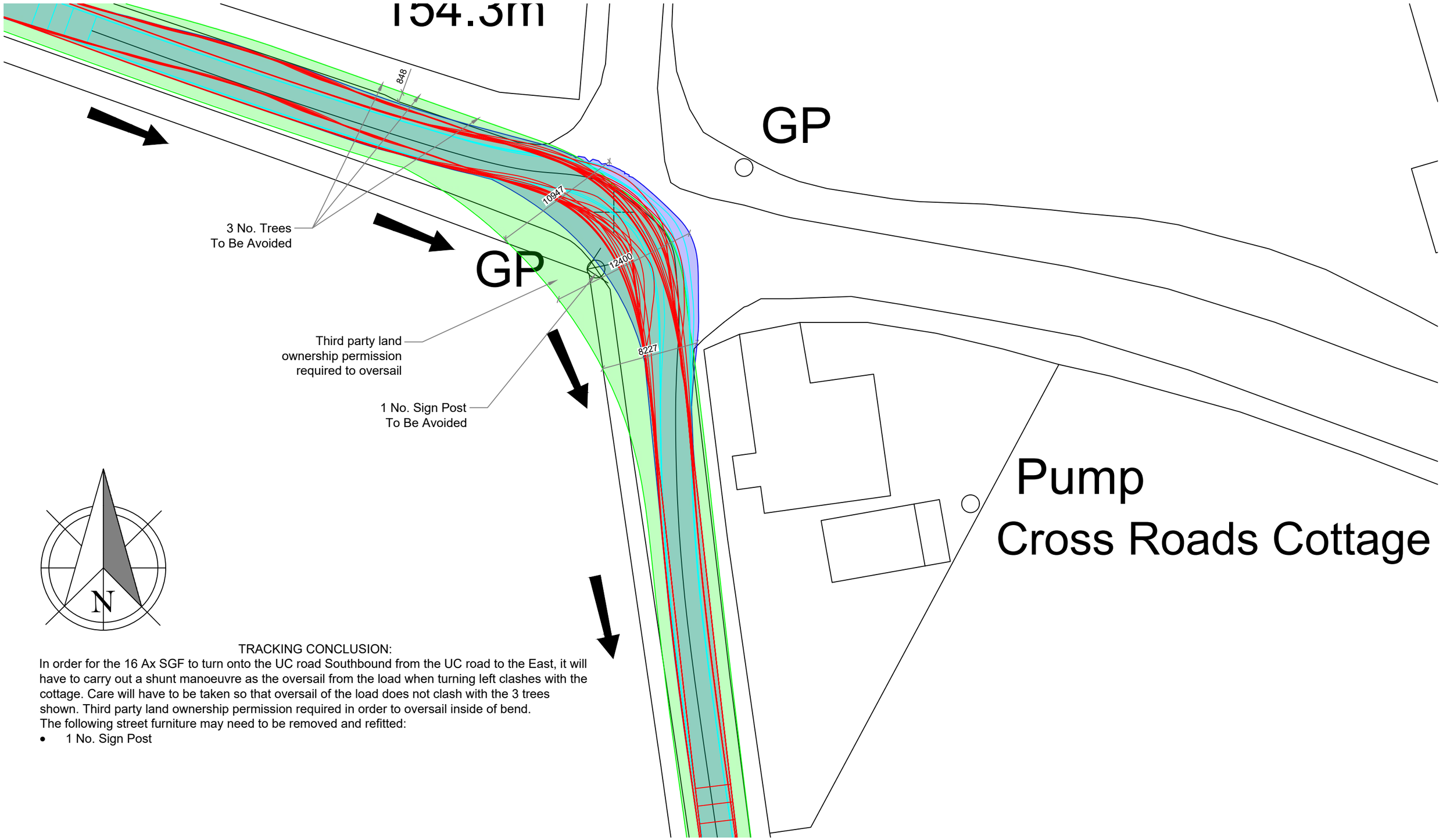

TRACKING CONCLUSION:

In order for the 16 Ax SGF to turn onto the UC road Southbound from the UC road to the East, it will have to carry out a shunt manoeuvre as the oversail from the load when turning left clashes with the cottage. Care will have to be taken so that oversail of the load does not clash with the 3 trees shown. Third party land ownership permission required in order to oversail inside of bend.
The following street furniture may need to be removed and refitted:

- 1 No. Sign Post

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:

What Three Words: ///look.giant.star
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	02/05/24	First issue			
A					
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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA UC Road Westbound onto UC Road Southbound
Scale (A3)	1:300
Sheet No.	2
Total No.	2
Dwg. No	ALL-A242453-SPA-03

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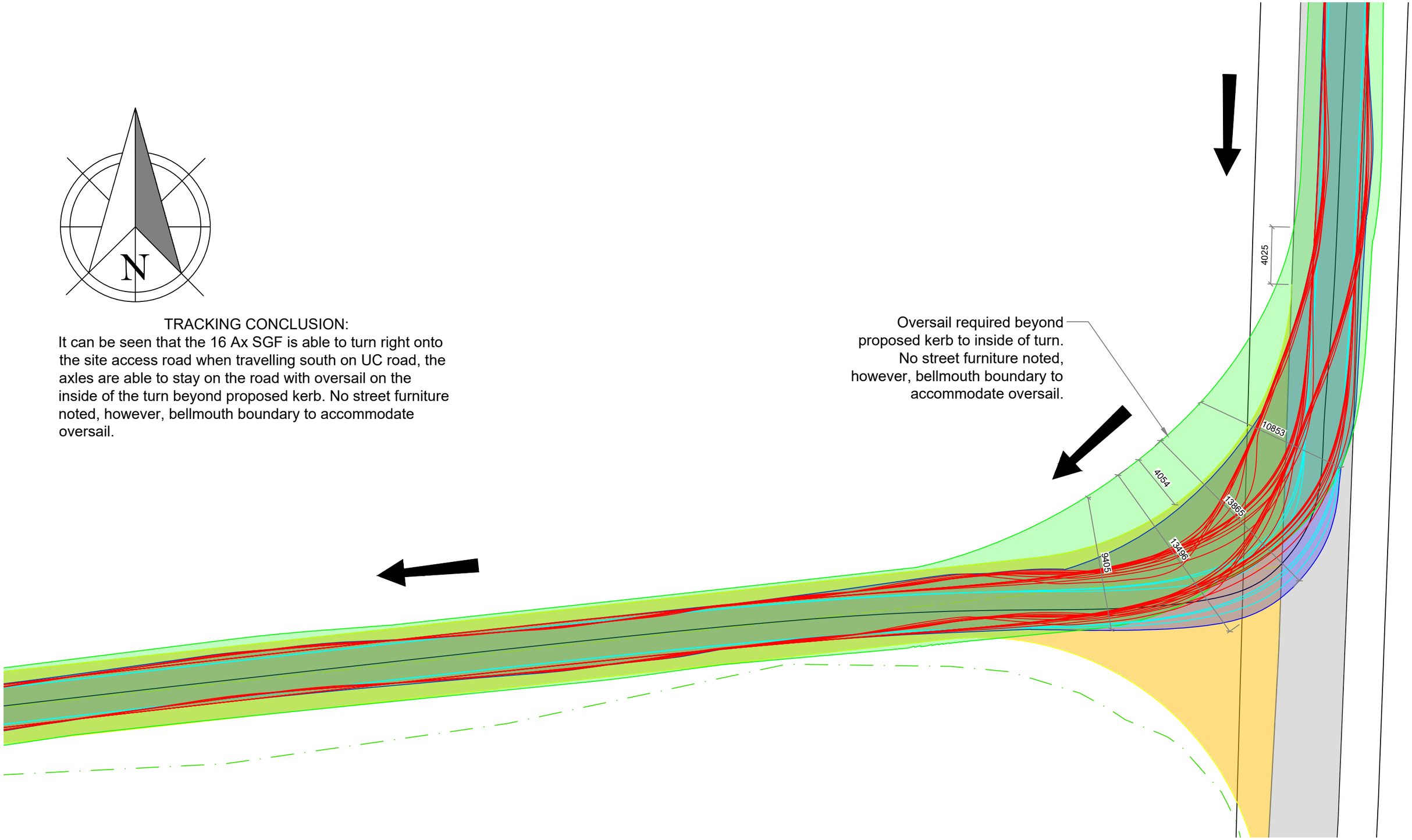
TRACKING CONCLUSION:

It can be seen that the 16 Ax SGF is able to turn right onto the site access road when travelling south on UC road, the axles are able to stay on the road with oversail on the inside of the turn beyond proposed kerb. No street furniture noted, however, bellmouth boundary to accommodate oversail.

Oversail required beyond proposed kerb to inside of turn. No street furniture noted, however, bellmouth boundary to accommodate oversail.



DRAWING NOTES:

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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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
00	02/05/24	First issue			
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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF UC Road Southbound Right Turn onto Site Access Rd
Scale (A3)	1:250
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-04

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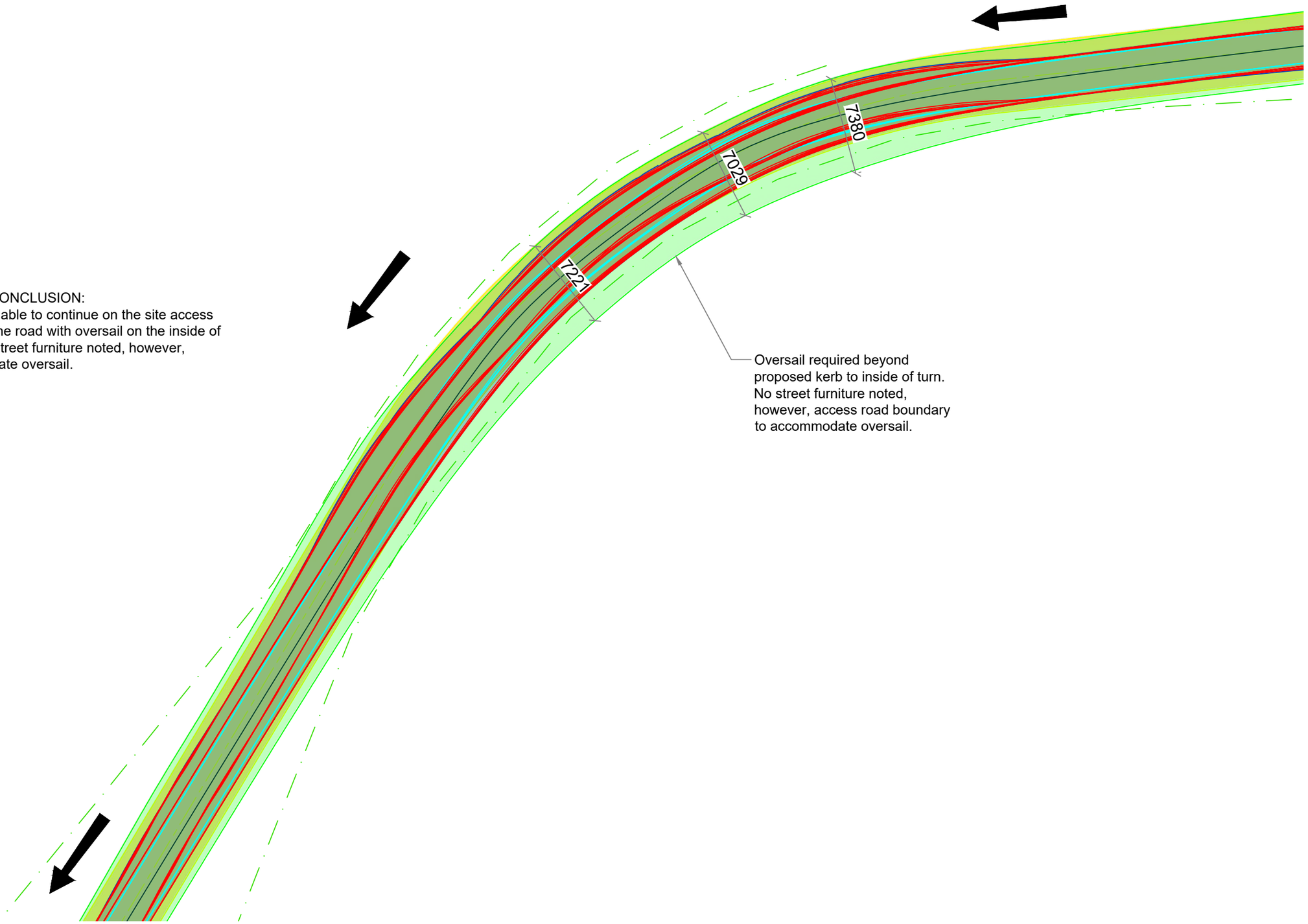
N

TRACKING CONCLUSION:

It can be seen that the 16 Ax SGF is able to continue on the site access road. The axles are able to stay on the road with oversail on the inside of the turn beyond proposed kerb. No street furniture noted, however, access road boundary to accommodate oversail.



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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA Westbound Along Site Access Rd
Scale (A3)	1:300
Sheet No.	1
Total No.	2
Dwg. No	ALL-A242453-SPA-05

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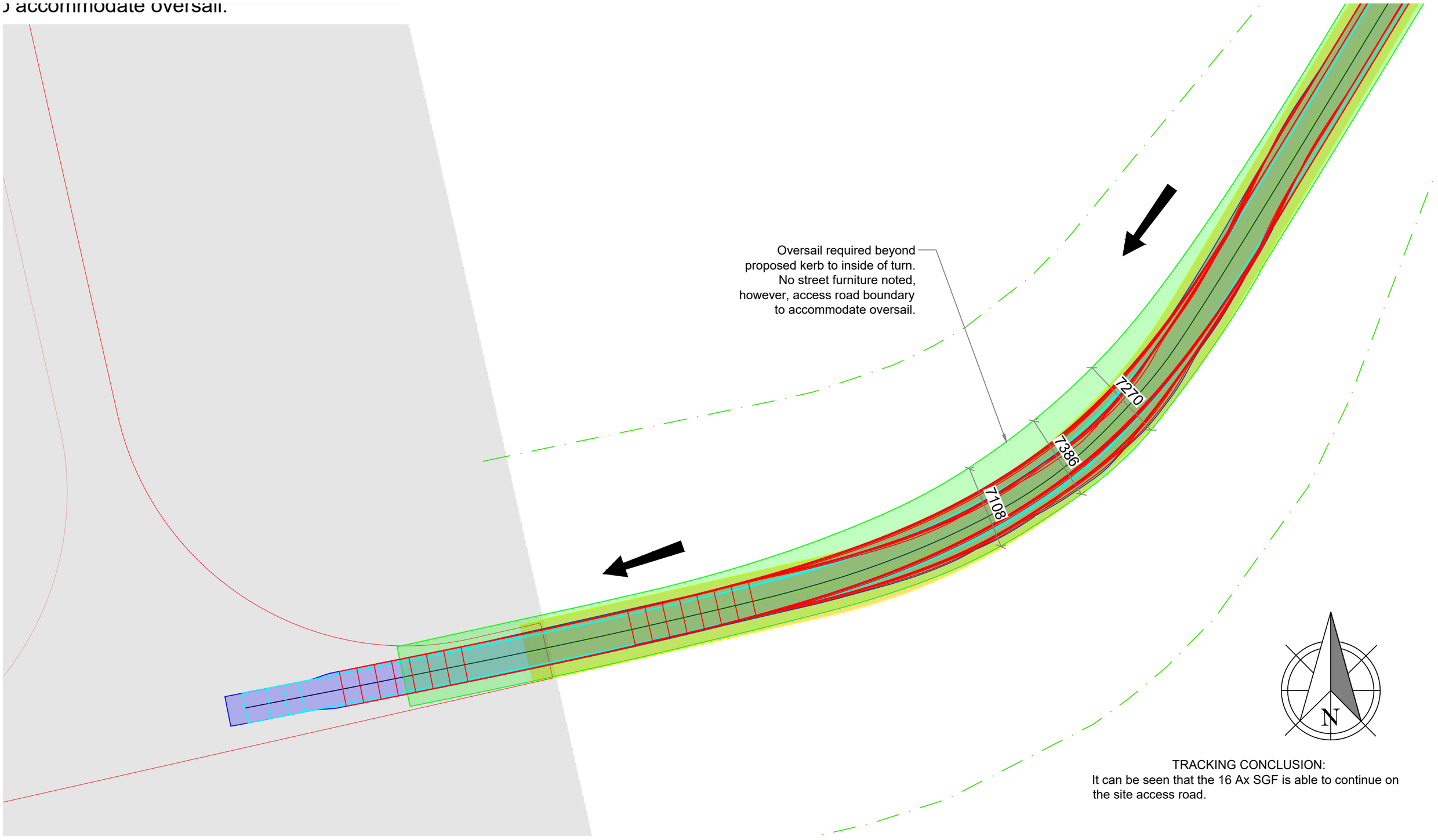

TRACKING CONCLUSION:
It can be seen that the 16 Ax SGF is able to continue on the site access road.

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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

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Allelys
The Slough, Studley, Warwickshire, B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF SPA Westbound Along Site Access Rd
Scale (A3)	1:300
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-06

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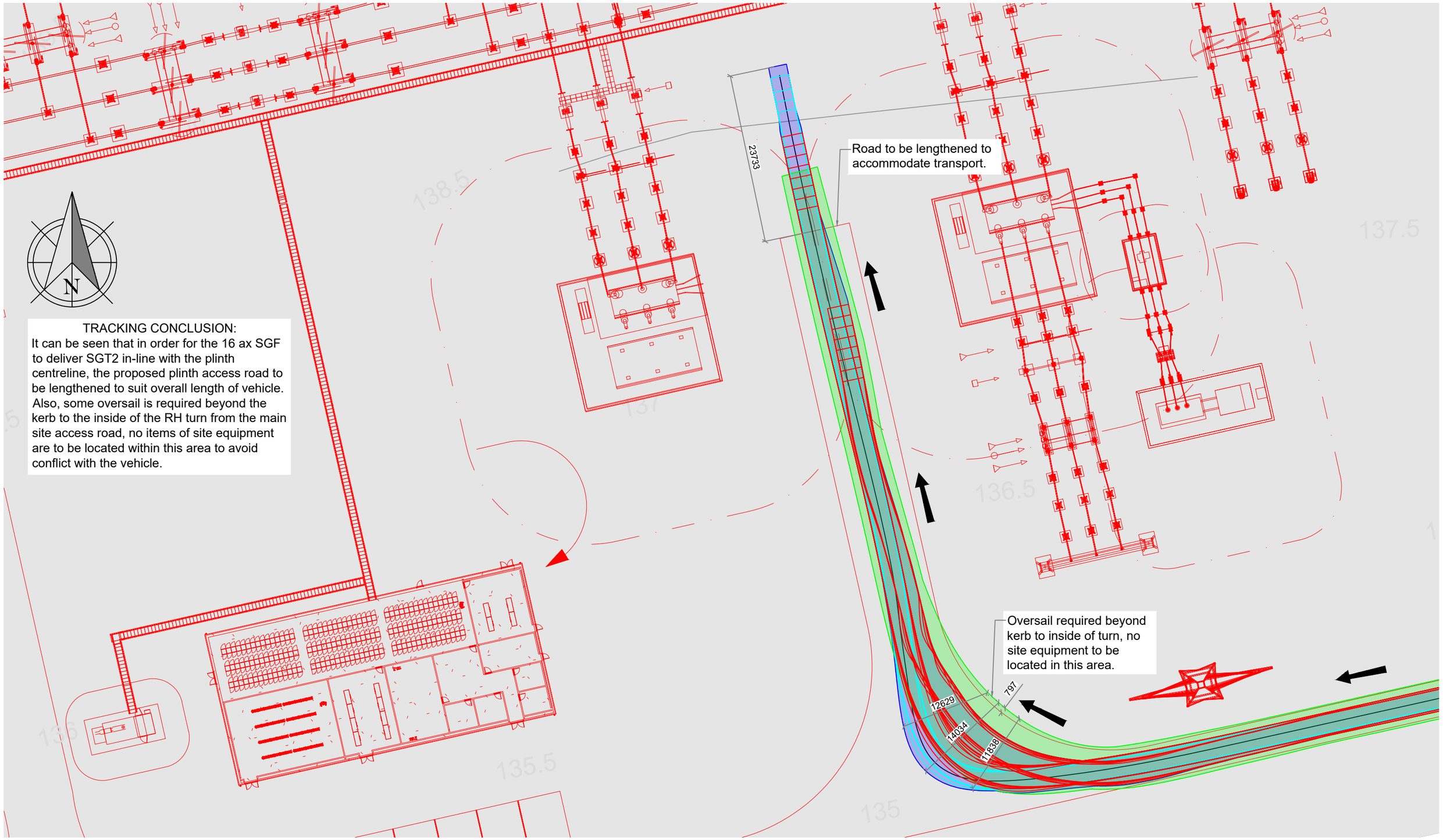

DRAWING NOTES:

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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF Right Turn onto SGT2 Plinth Road
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-07

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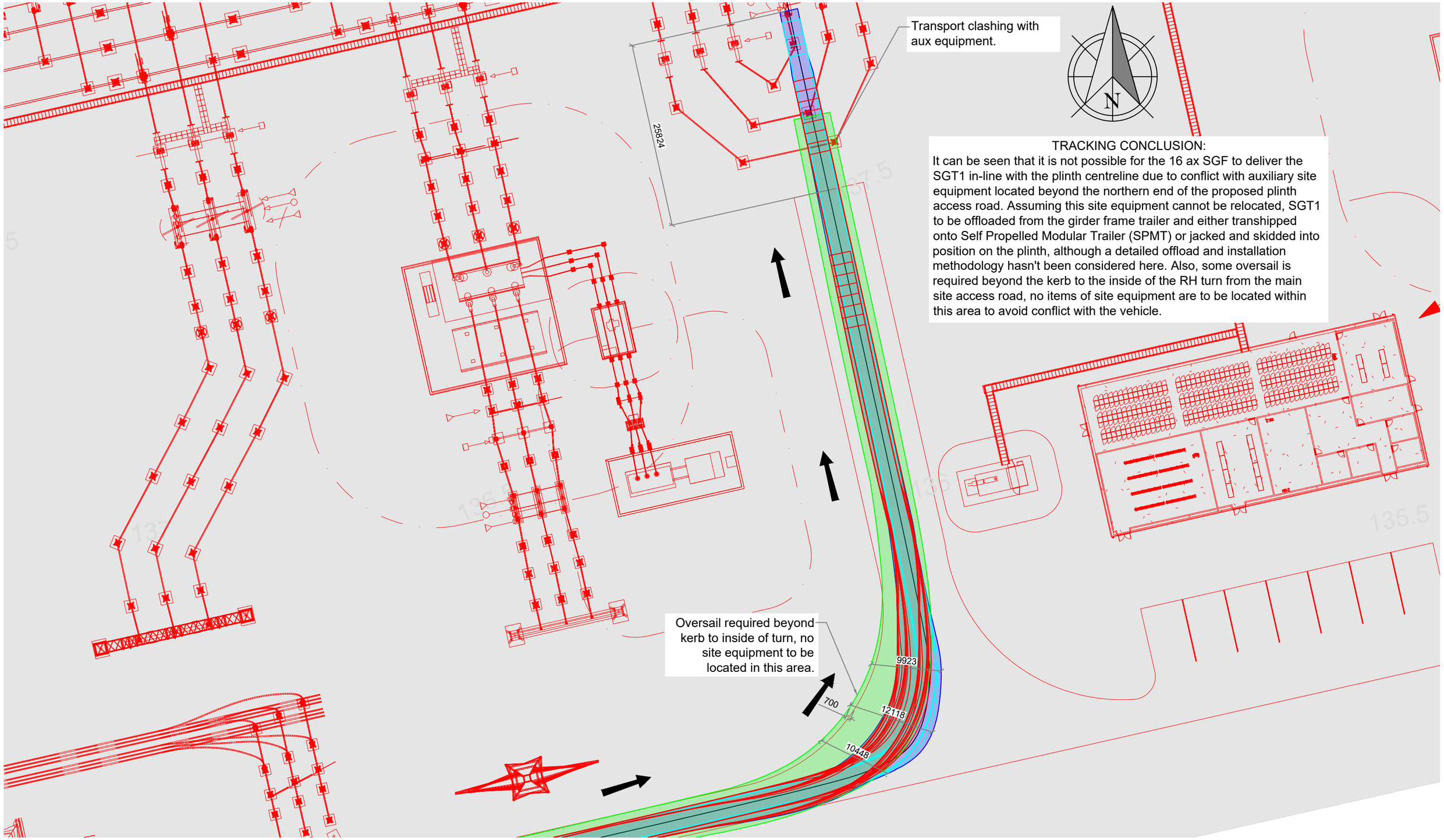

DRAWING NOTES:

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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF Left Turn onto SGT1 Plinth Road Post Shunt
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-08

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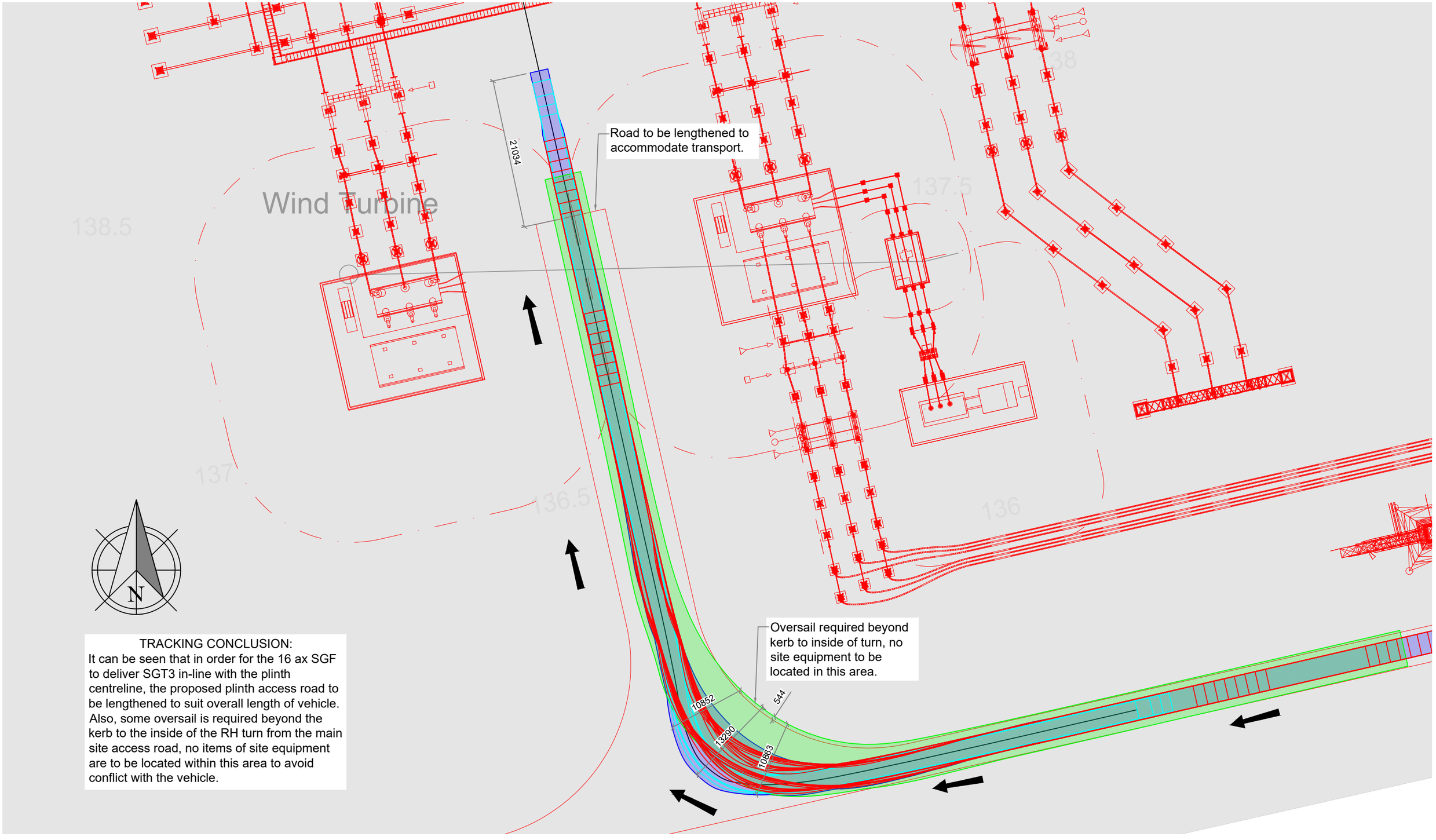

TRACKING CONCLUSION:

It can be seen that in order for the 16 ax SGF to deliver SGT3 in-line with the plinth centreline, the proposed plinth access road to be lengthened to suit overall length of vehicle. Also, some oversail is required beyond the kerb to the inside of the RH turn from the main site access road, no items of site equipment are to be located within this area to avoid conflict with the vehicle.

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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF Right Turn onto SGT3 Plinth Road
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-09

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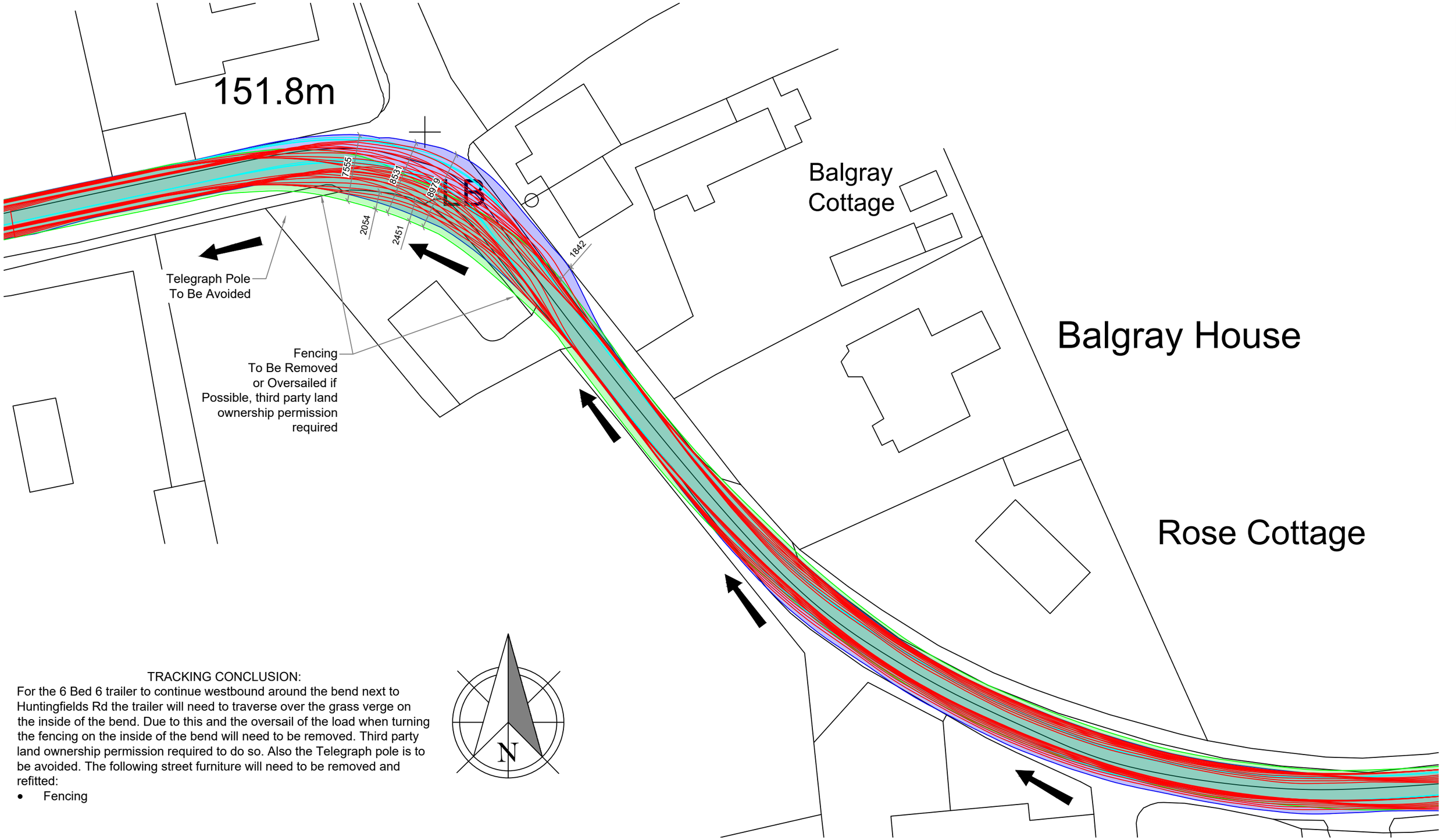

TRACKING CONCLUSION:

For the 6 Bed 6 trailer to continue westbound around the bend next to Huntingfields Rd the trailer will need to traverse over the grass verge on the inside of the bend. Due to this and the oversail of the load when turning the fencing on the inside of the bend will need to be removed. Third party land ownership permission required to do so. Also the Telegraph pole is to be avoided. The following street furniture will need to be removed and refitted:

- Fencing

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:

What Three Words: ///wanted.quiet.activism
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

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REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 SPA Westbound around bend next to Huntingfaulds Rd
Scale (A3)	1:400
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-10

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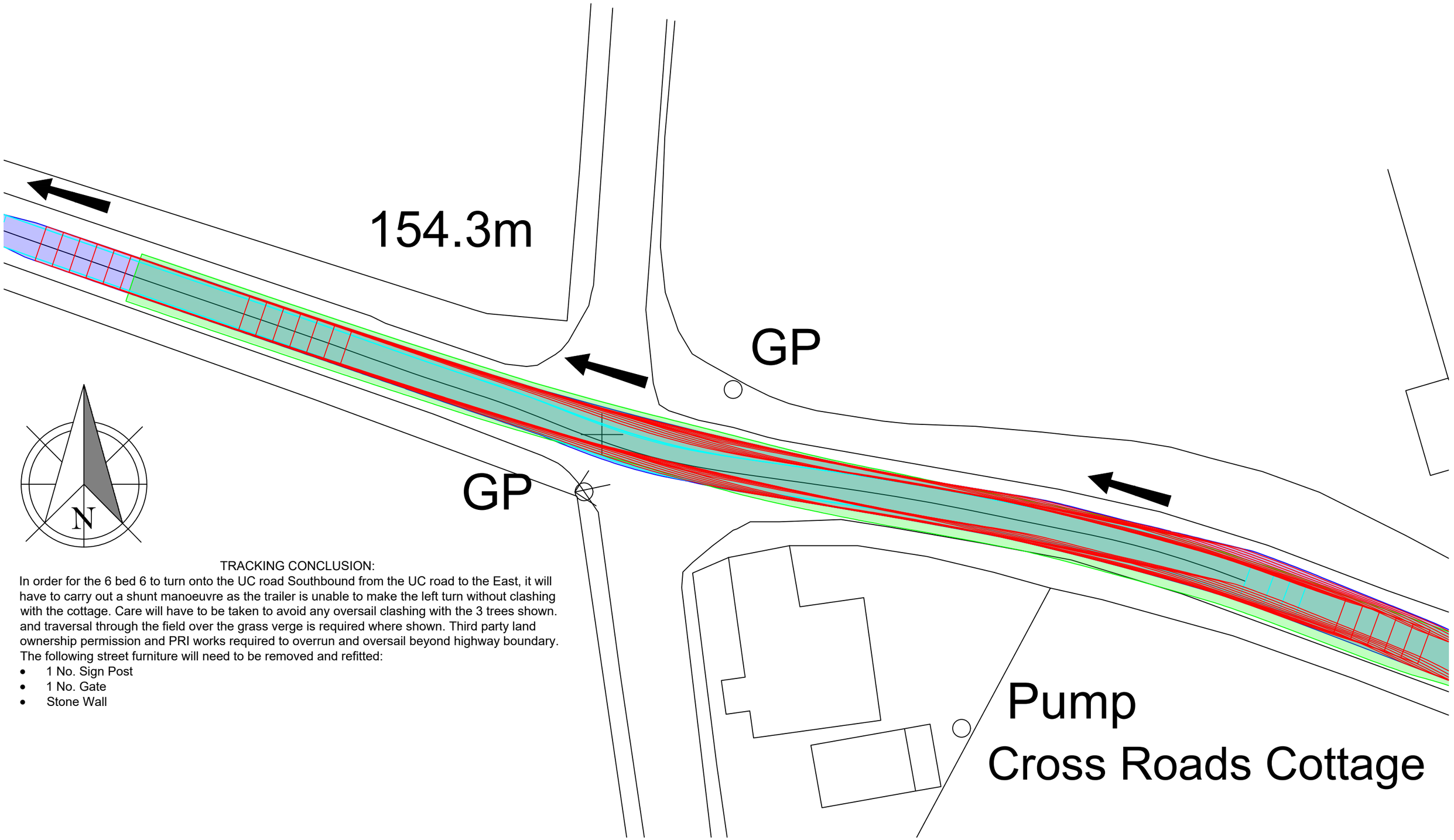

TRACKING CONCLUSION:

In order for the 6 bed 6 to turn onto the UC road Southbound from the UC road to the East, it will have to carry out a shunt manoeuvre as the trailer is unable to make the left turn without clashing with the cottage. Care will have to be taken to avoid any oversail clashing with the 3 trees shown. and traversal through the field over the grass verge is required where shown. Third party land ownership permission and PRI works required to overrun and oversail beyond highway boundary. The following street furniture will need to be removed and refitted:

- 1 No. Sign Post
- 1 No. Gate
- Stone Wall

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:

What Three Words: ///look.giant.star
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

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The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 SPA UC Road Westbound onto UC Road Southbound
Scale (A3)	1:300
Sheet No.	1
Total No.	2
Dwg. No	ALL-A242453-SPA-11

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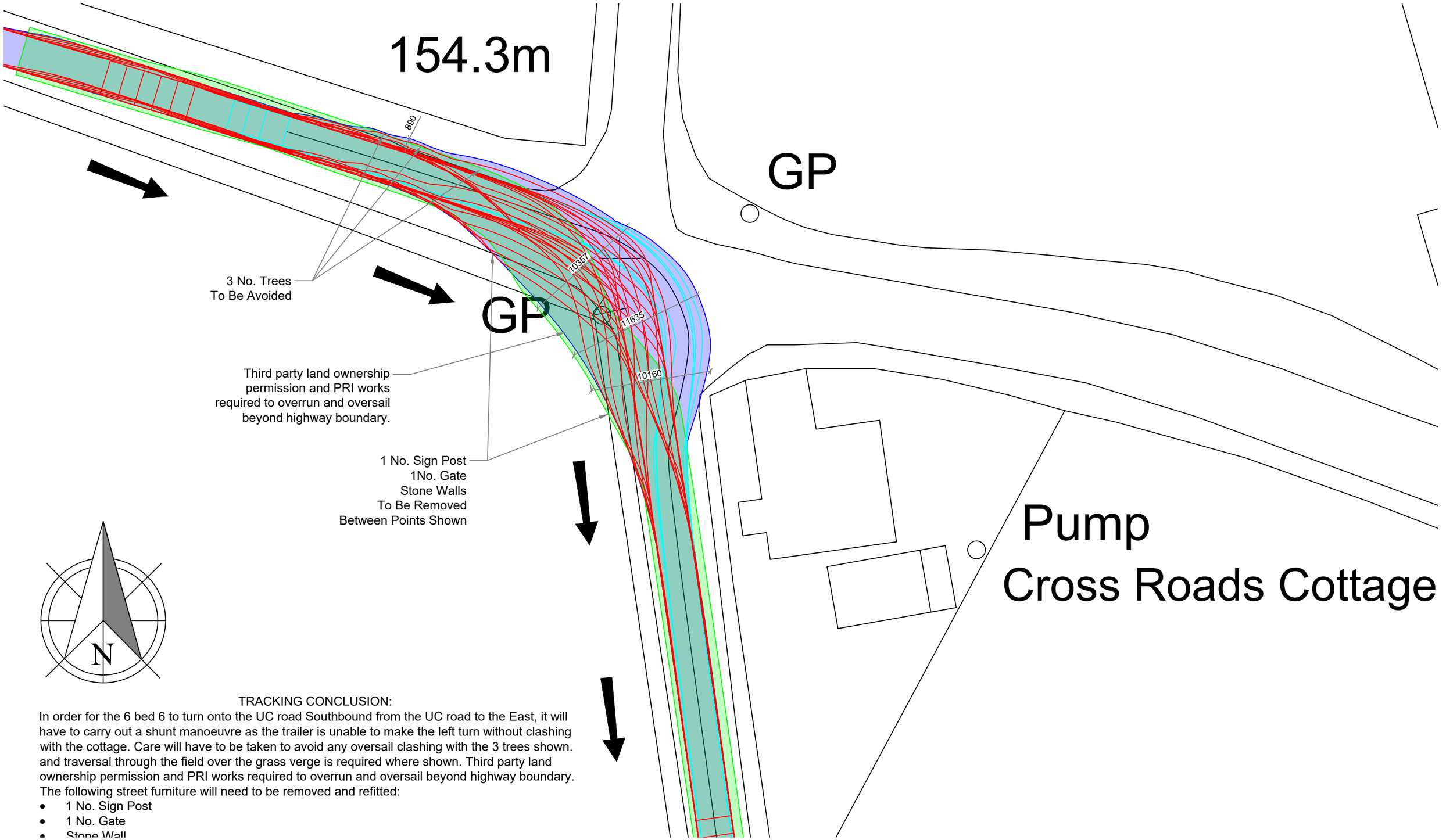

TRACKING CONCLUSION:

In order for the 6 bed 6 to turn onto the UC road Southbound from the UC road to the East, it will have to carry out a shunt manoeuvre as the trailer is unable to make the left turn without clashing with the cottage. Care will have to be taken to avoid any oversail clashing with the 3 trees shown. and traversal through the field over the grass verge is required where shown. Third party land ownership permission and PRI works required to overrun and oversail beyond highway boundary. The following street furniture will need to be removed and refitted:

- 1 No. Sign Post
- 1 No. Gate
- Stone Wall

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:

What Three Words: ///look.giant.star
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 SPA UC Road Westbound onto UC Road Southbound
Scale (A3)	1:300
Sheet No.	2
Total No.	2
Dwg. No	ALL-A242453-SPA-11

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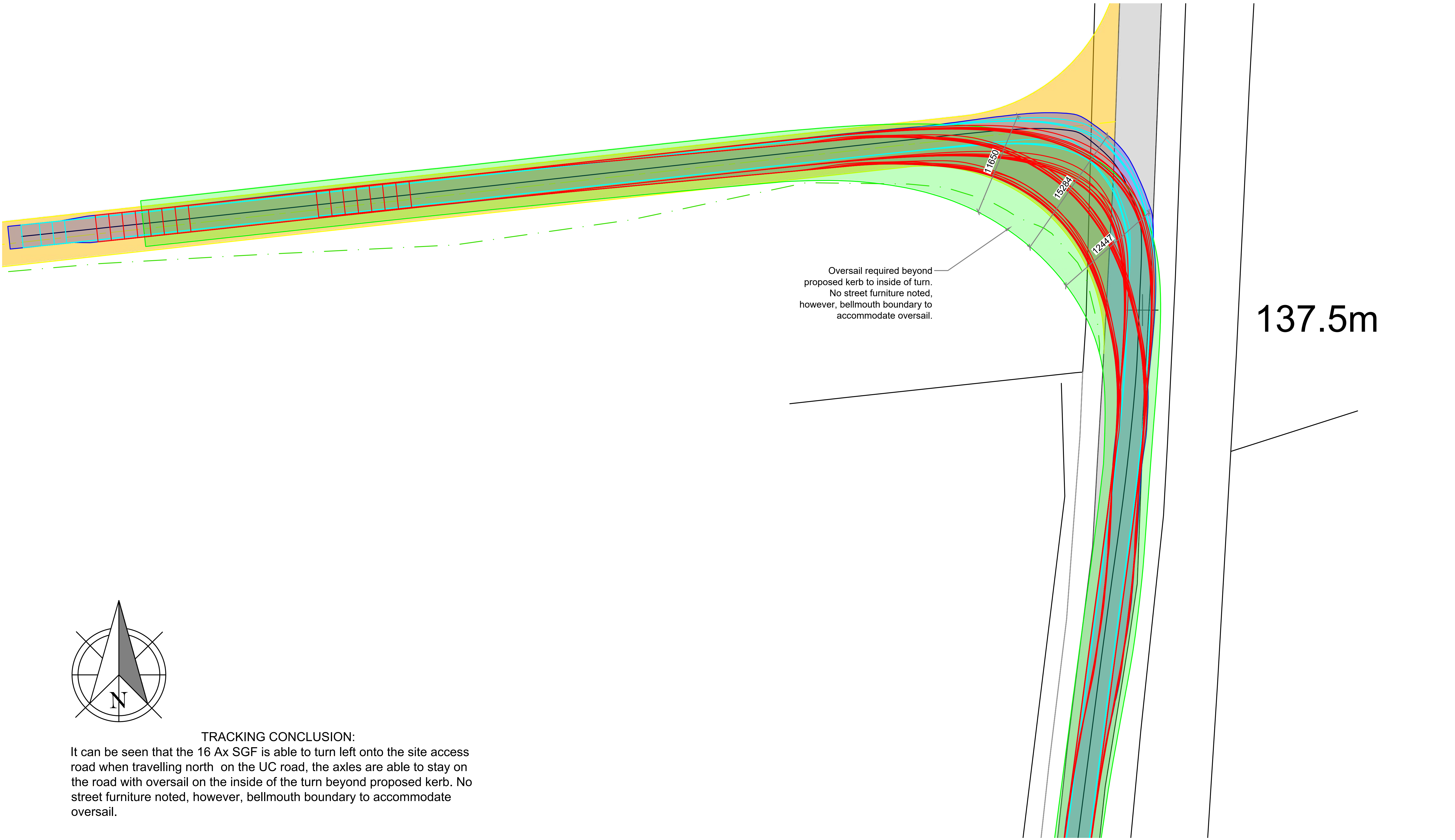

TRACKING CONCLUSION:

It can be seen that the 16 Ax SGF is able to turn left onto the site access road when travelling north on the UC road, the axles are able to stay on the road with oversail on the inside of the turn beyond proposed kerb. No street furniture noted, however, bellmouth boundary to accommodate oversail.

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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	170Te Tx on a 16Ax SGF UC Road Southbound Left Turn onto Site Access Rd
Scale (A3)	1:400
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-12

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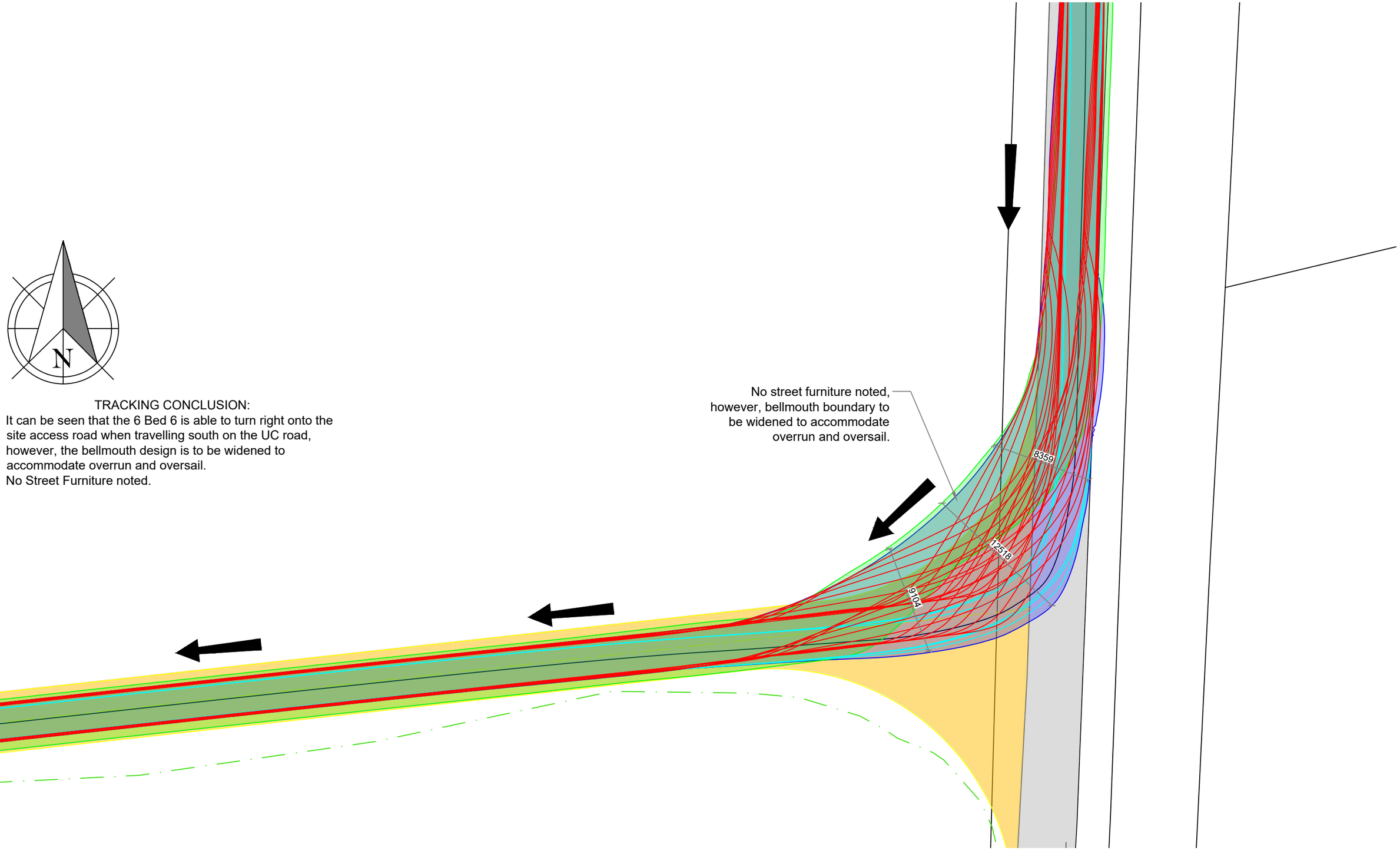

TRACKING CONCLUSION:
It can be seen that the 6 Bed 6 is able to turn right onto the site access road when travelling south on the UC road, however, the bellmouth design is to be widened to accommodate overrun and oversail.
No Street Furniture noted.

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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 UC Road Southbound Right Turn onto Site Access Rd
Scale (A3)	1:300
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-13

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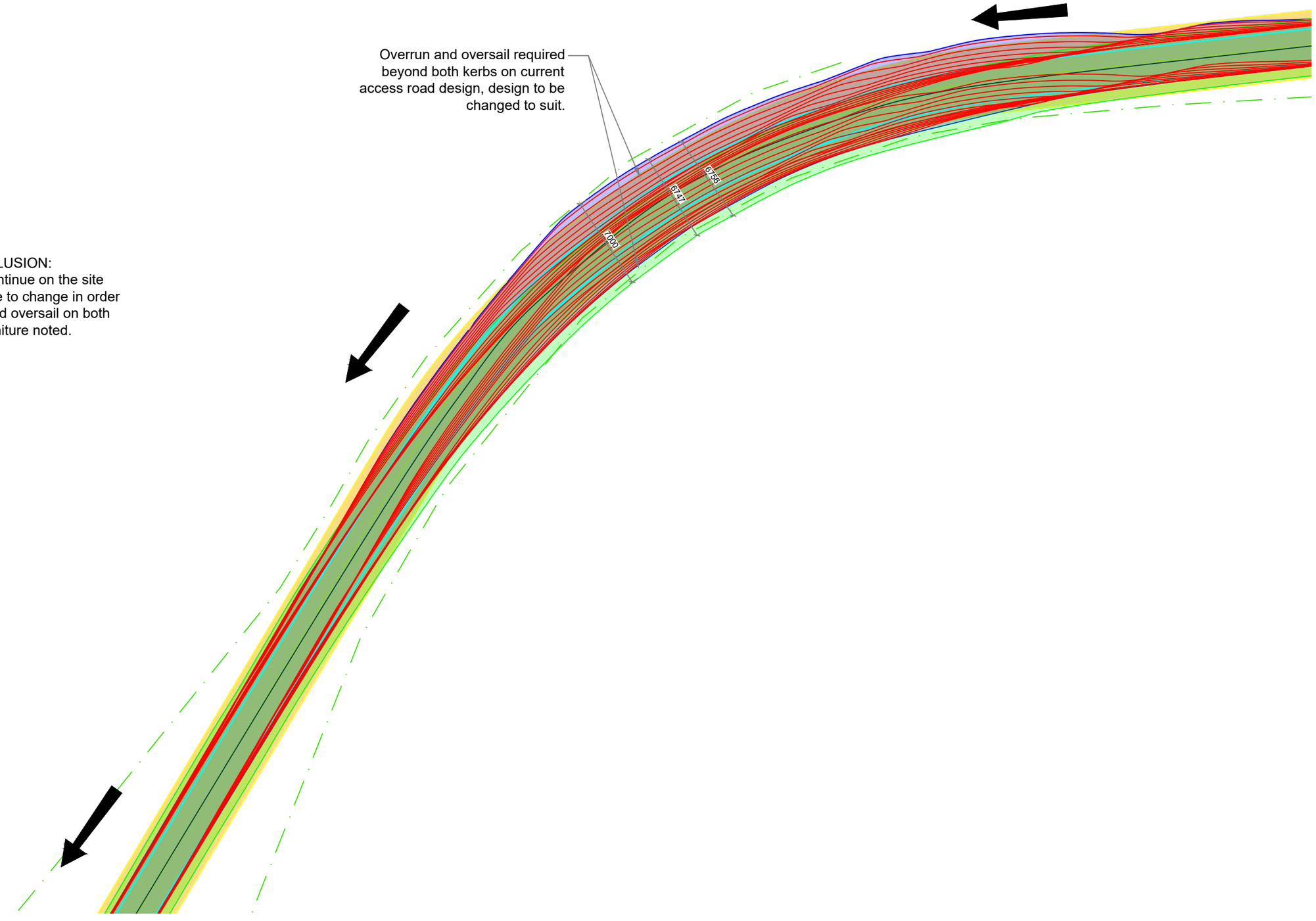
TRACKING CONCLUSION:
For the 6 Bed 6 to be able to continue on the site access road the design will have to change in order to accommodate the overrun and oversail on both kerbs at the bend. No street furniture noted.



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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

REV	DATE	DOCUMENT REFERENCE No.

REVISION HISTORY

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 SPA Westbound Along Site Access Rd
Scale (A3)	1:300
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-14

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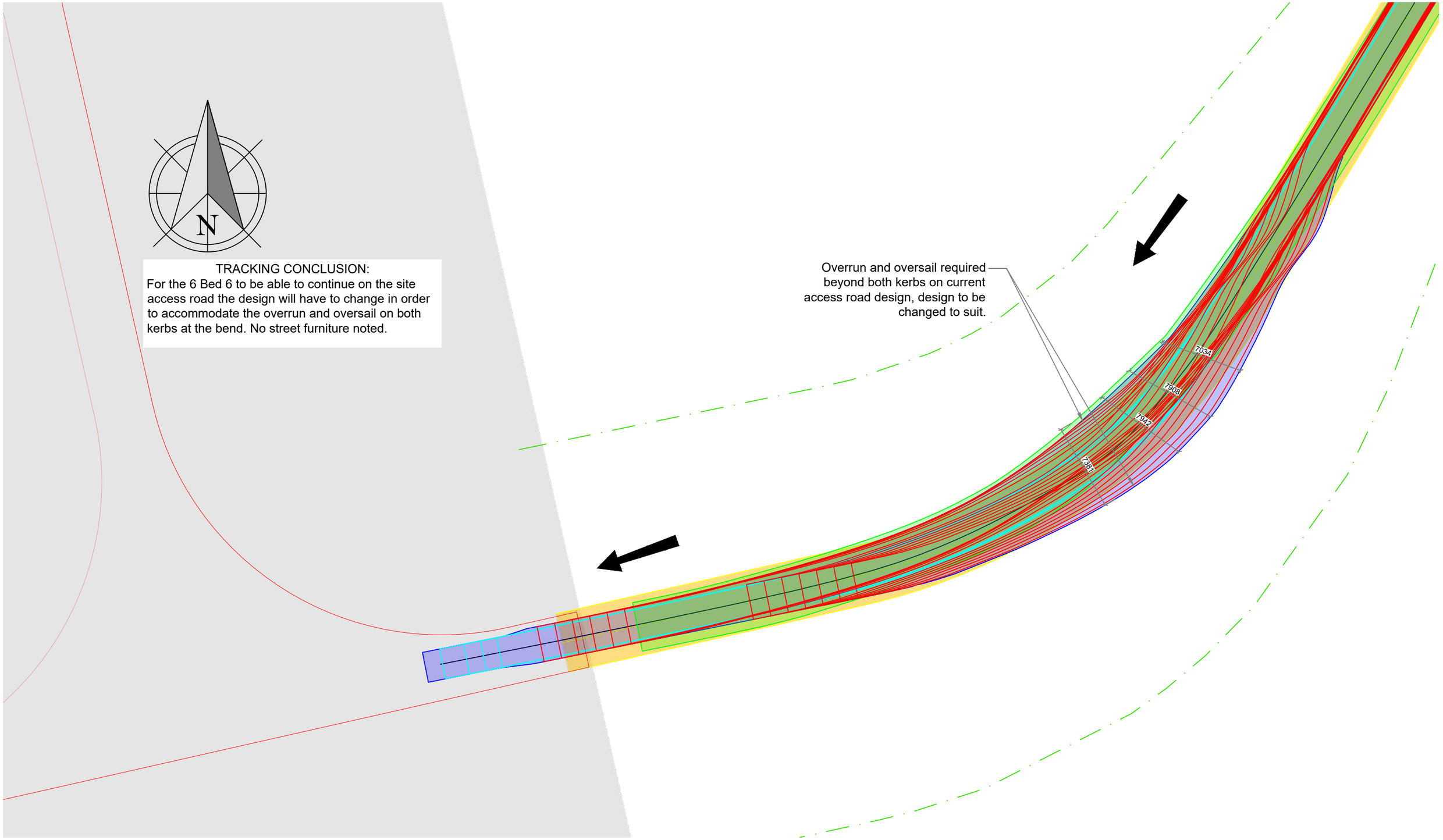

DRAWING NOTES:

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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:

What Three Words: ///state.league.regime
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 SPA Westbound Along Site Access Rd
Scale (A3)	1:300
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-15

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TRACKING CONCLUSION:

It can be seen that in order for the 6 Bed 6 to deliver SGT2 in-line with the plinth centreline, the proposed plinth access road to be lengthened to suit overall length of vehicle. Also, some oversail is required beyond the kerb to the inside of the RH turn from the main site access road, no items of site equipment are to be located within this area to avoid conflict with the vehicle.

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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 Right Turn onto SGT2 Plinth Road
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-16

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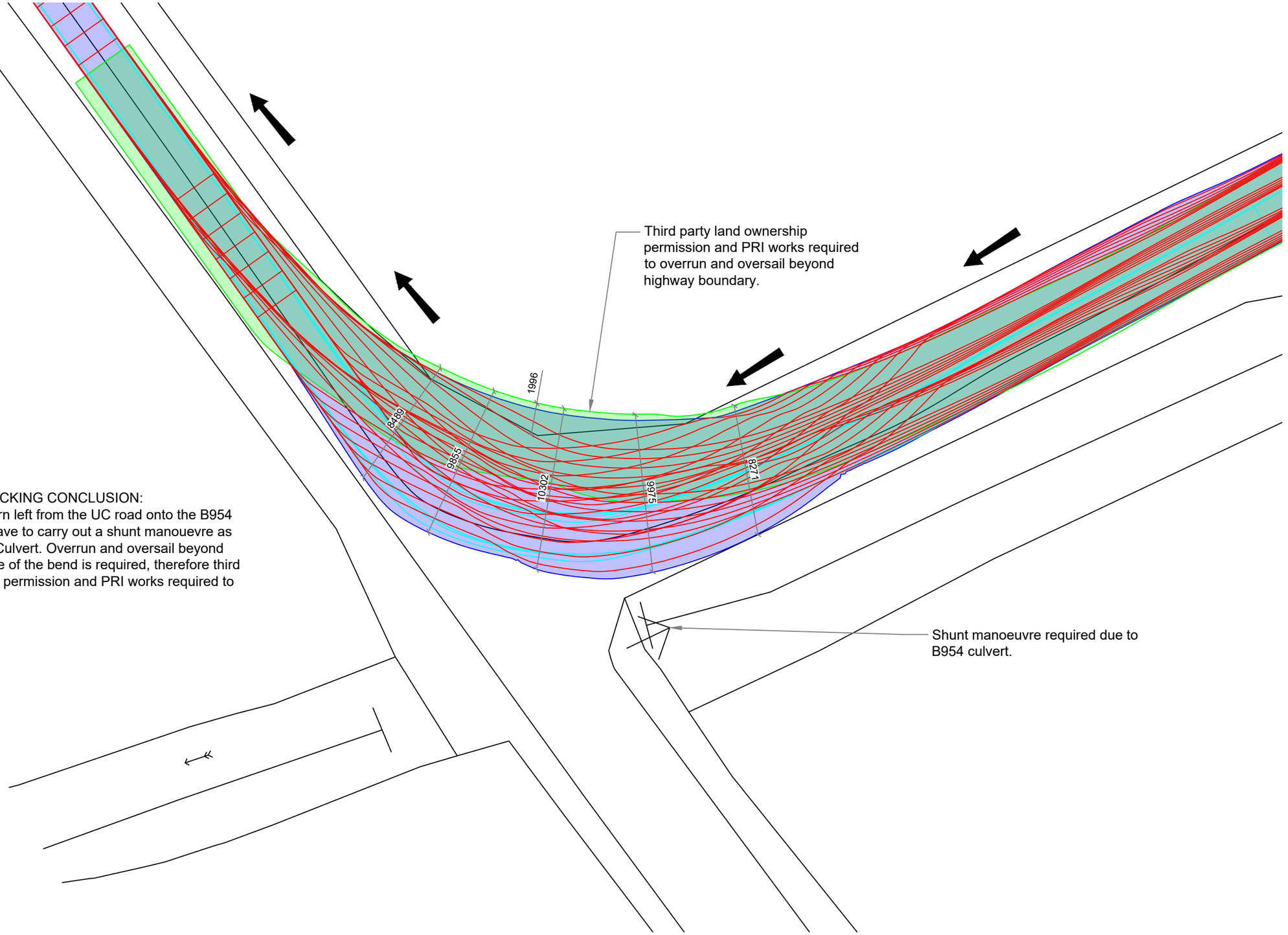

TRACKING CONCLUSION:

For the 6 Bed 6 to turn left from the UC road onto the B954 Southbound, it will have to carry out a shunt manouevre as shown due to B954 Culvert. Overrun and oversail beyond highway on the inside of the bend is required, therefore third party land ownership permission and PRI works required to accommodate this.

DRAWING NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
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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:

What Three Words: ///factory.roughest.wicket
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 UC Road Southbound Right Turn onto Site Access Rd
Scale (A3)	1:250
Sheet No.	2
Total No.	2
Dwg. No	ALL-A242453-SPA-17

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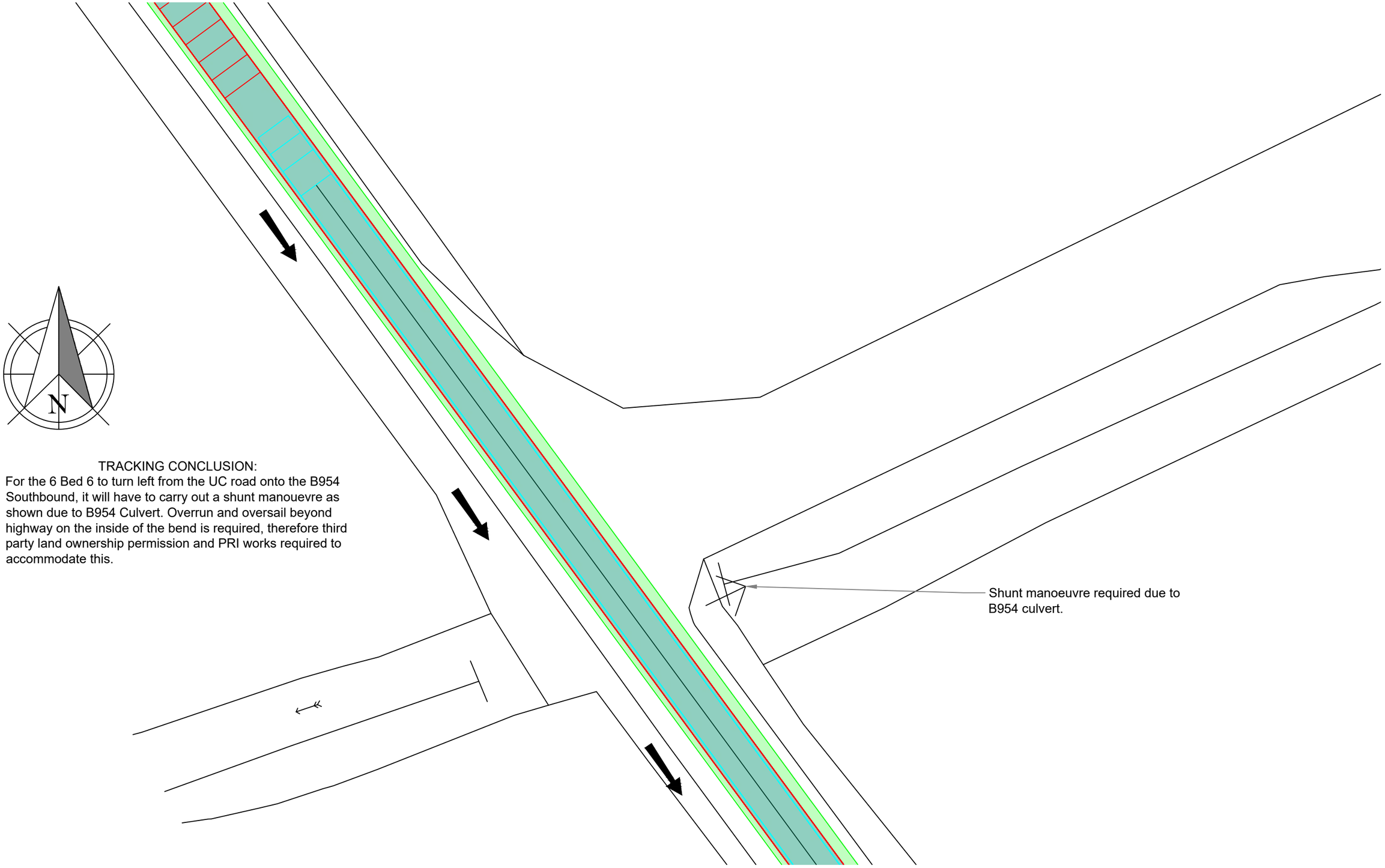

TRACKING CONCLUSION:
For the 6 Bed 6 to turn left from the UC road onto the B954 Southbound, it will have to carry out a shunt manouevre as shown due to B954 Culvert. Overrun and oversail beyond highway on the inside of the bend is required, therefore third party land ownership permission and PRI works required to accommodate this.

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:

What Three Words: ///factory.roughest.wicket
Based on transport arrangement ALL-TA-A242453-01

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client: Cnoclee Ltd
Project: Emmock Transport Assessment
Title: 114Te Split Phase Unit on a 6 Bed 6
UC Road Southbound Right Turn onto Site Access Rd
Scale (A3): 1:250 | Sheet No.: 2 | Total No.: 2
Dwg. No: ALL-A242453-SPA-17

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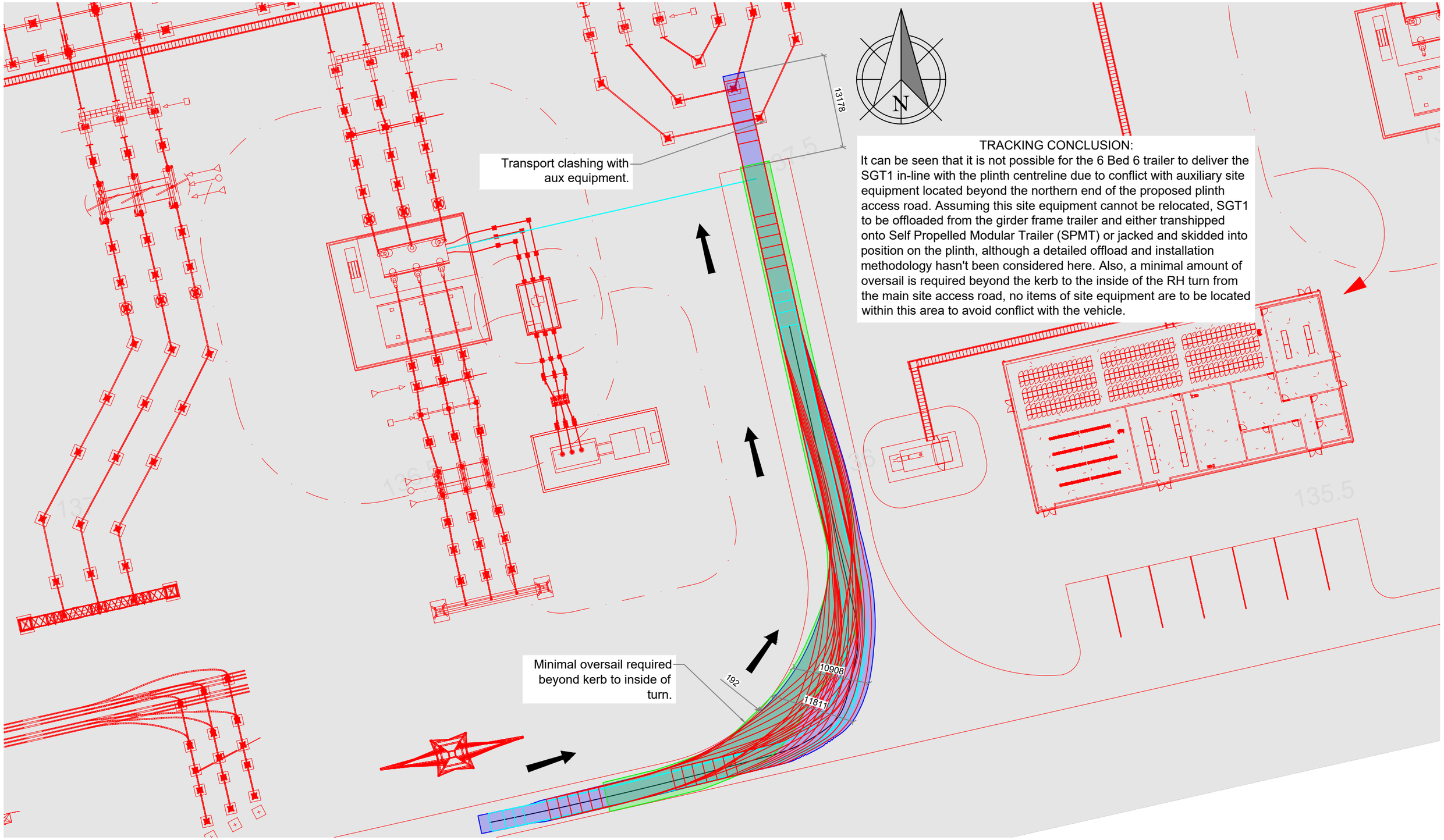

TRACKING CONCLUSION:

It can be seen that it is not possible for the 6 Bed 6 trailer to deliver the SGT1 in-line with the plinth centreline due to conflict with auxiliary site equipment located beyond the northern end of the proposed plinth access road. Assuming this site equipment cannot be relocated, SGT1 to be offloaded from the girder frame trailer and either transhipped onto Self Propelled Modular Trailer (SPMT) or jacked and skidded into position on the plinth, although a detailed offload and installation methodology hasn't been considered here. Also, a minimal amount of oversail is required beyond the kerb to the inside of the RH turn from the main site access road, no items of site equipment are to be located within this area to avoid conflict with the vehicle.

DRAWING NOTES:

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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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 Left Turn onto SGT1 Plinth Road Post Shunt
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-18

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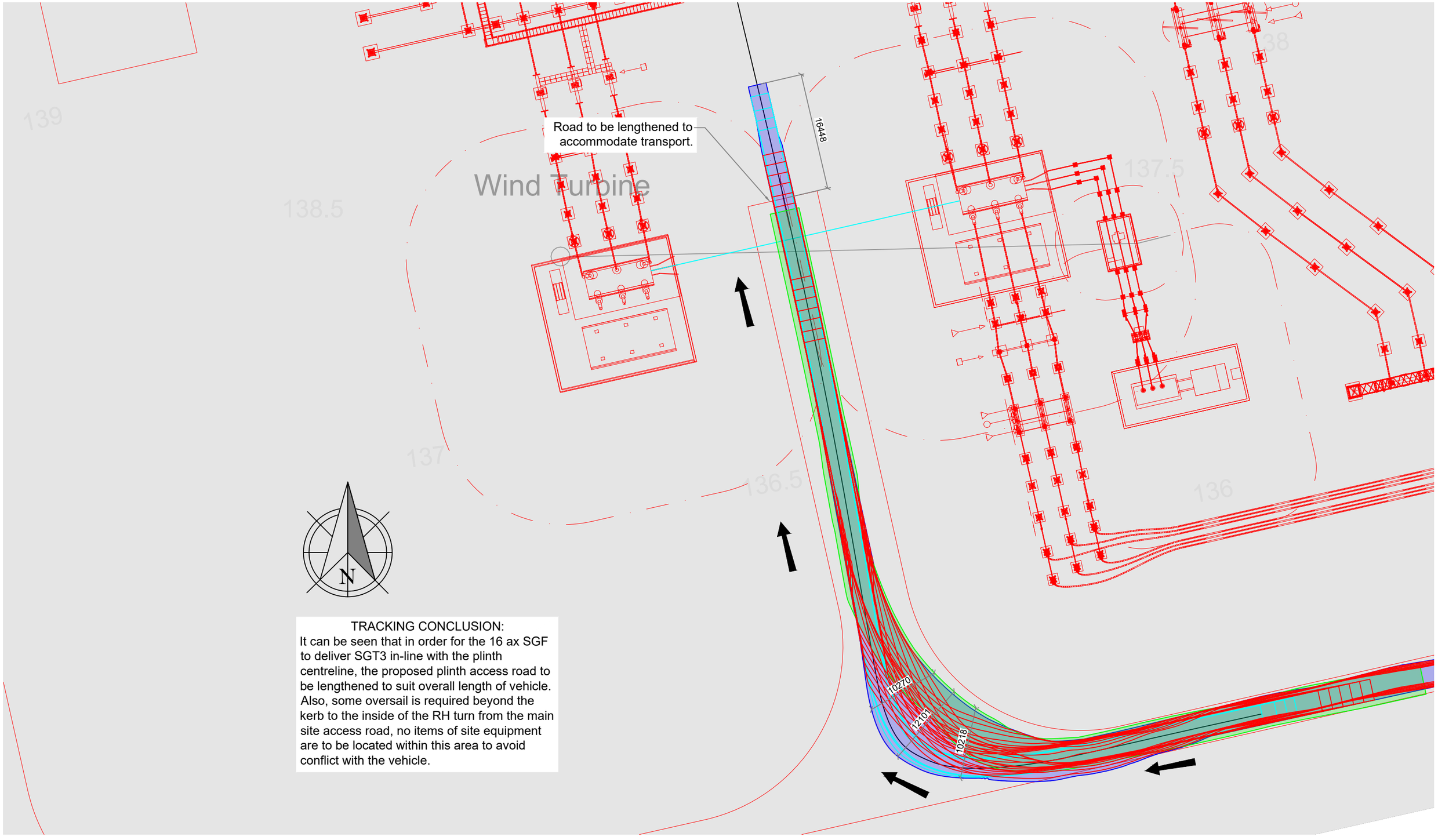

TRACKING CONCLUSION:

It can be seen that in order for the 16 ax SGF to deliver SGT3 in-line with the plinth centreline, the proposed plinth access road to be lengthened to suit overall length of vehicle. Also, some oversail is required beyond the kerb to the inside of the RH turn from the main site access road, no items of site equipment are to be located within this area to avoid conflict with the vehicle.

DRAWING NOTES:

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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:

Based on transport arrangement ALL-TA-A242453-02

- Trailer Wheel Trace
- Tractor Wheel Trace
- Tractor/Trailer Swept Area
- Load Swept Area
- Direction of Travel

CLIENT REFERENCE DOCUMENTS

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Allelys
The Slough,
Studley,
Warwickshire,
B80 7EN
Tel: +44 (0) 1527 852 408
e-mail: enquiries@allelys.co.uk

Client	Cnoclee Ltd
Project	Emmock Transport Assessment
Title	114Te Split Phase Unit on a 6 Bed 6 Right Turn onto SGT3 Plinth Road
Scale (A3)	1:500
Sheet No.	1
Total No.	1
Dwg. No	ALL-A242453-SPA-19