

The background is a dark map with light-colored street lines. A large, semi-transparent blue circle is centered on the page. Inside this circle is a triangular path with a light blue outer border and a darker blue inner core. The path starts from the left edge of the circle, goes up and right, then down and right, and finally down and left to the bottom edge. The text is centered within this triangular path.

SSEN

Route Feasibility Report

**For the delivery of 261 te Transformer
from Grangemouth to Cambushinnie Substation**

A242494

1. Executive Summary

Allelys have been commissioned by SSEN to provide a feasibility survey for the transport of 2 in no. 261 te 400/132 kV Super Grid Transformers (SGT) from Grangemouth to Cambushinnie 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 configurations for delivery of the transformers are a 24-axle Girder Frame Trailer (GFT) or 16-axle flat top trailer subject to structural assessments, which are both classified as Special Order due to a gross weight of 441.0 te and 312.4 te respectively. As the transport is classified as Special Order, in accordance with the Water Preferred Policy, Forth Ports (Grangemouth) has been considered as Port Of Delivery (POD) as it is the closest marine facility to site capable of dealing with this size of cargo.

The route is not currently considered feasible in terms of structural capacity for the 24-axle GFT, as Transport Scotland, BEAR (South East Scotland), Amey (North East Scotland) and Perth & Kinross Council (PKC) (acting as the Local Highway Authorities (LHA)) have advised that structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, M9 6-7 25 Carron, M9 10-11 5 Forth, A9 80 Auchinlay Rail, A9 90 Allan Water, A822/01 Millstone Burn, A822/03 River Allan and B8033/03 Bridge of Keir have failed their basic in-house checks. Therefore, further structural assessments are required to confirm whether the structures are capable of accommodating the vehicle. Structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, A822/01 Millstone Burn and B8033/03 Bridge of Keir are thought to be suitable for overbridging, however, the remaining structures are unsuitable and therefore pose a high risk to delivery of the SGTs should the results of the assessments be negative.

Swept Path Assessment (SPA) of the A822/B8033 junction in Braco village has been carried out and has found that the junction is not negotiable for the 24-axle GFT due to the need for third-party land uptake and removal of mature trees/hedgerow when both turning left and performing a shunt manoeuvre continuing northbound on the A822 past the junction before turning the tractor units around and turning right onto the B8033 from the A822 southbound. SPA has also been carried out of the 24-axle GFT travelling southbound around an S-bend on the B8033 over structure no. B8033/03 Bridge of Keir and, again, the results show a need for the removal of mature trees in order to facilitate the vehicle. A third SPA has been carried out of the 24-axle GFT travelling southbound on the B8033 around a right-hand bend adjacent to the private property "Loaning View", which also shows a requirement for third-party land uptake and removal of mature trees/hedgerow. Therefore, it is deemed that the section of route through Braco village to the private access track is not negotiable for the 24-axle GFT.

To overcome the physical negotiability problems for the 24-axle GFT, it is proposed that the transformers are transhipped from this vehicle onto a 16-axle flat top trailer prior to arrival in Braco village. The northbound slip road at the A9/A822 junction in Greenloaning has been identified as a suitable transshipment location as there is sufficient working area within the slip road to undertake the trailer interchange operation. Temporary steel plating will be required on the offside verge of the slip road to accommodate a mobile crane required to undertake lifting operations. A full closure of the slip road would be required with a diversion for all other road users for the duration of the trailer interchange. PKC have been contacted for comment on the use of the slip road and have advised that the operation

would be subject to the relevant applications and would need to be carried out at night in order to reduce disruption to other road users although it is anticipated that the operation would take approximately two days so it would not be possible to satisfy this restriction. Temporary lighting and security measures would be required to cover the full working area for the duration of the operation.

The route from Grangemouth to the nominated trailer interchange location is considered negotiable for the 24-axle GFT with Police Escort, Temporary Traffic Regulation Orders (TTRO), street furniture removals and additional tractor unit(s) to cope with sections of steep gradient. TTROs can take 12-weeks plus to process and should be planned accordingly.

Once transhipped onto the 16-axle flat top trailer, the SGTs would be transported over the remainder of the route to site. SPA of the three junctions that were proven not to be negotiable for the 24-axle GFT has also been carried out considerate of the 16-axle flat top trailer.

The A822/B8033 junction in Braco is negotiable for the 16-axle flat top trailer with street furniture removals and temporary steel plating of sections of pavement and verge to facilitate vehicle overrun beyond the kerb.

The S-bend on the B8033 over the Bridge of Keir is also negotiable for the 16-axle flat top trailer, although minor carriageway widening works are required to both sides of the carriageway on exit from the bridge. Vegetation pruning is also required to both sides of the carriageway throughout the S-bend.

The RH bend on the B8033 at Loaning View is negotiable for the 16-axle flat top trailer with the removal of a mature tree to the inside of the turn. Overrun beyond the kerb is also required to both sides of the carriageway throughout the turn with minor carriageway widening works needed to facilitate.

The final RH turn from B8033 onto the private access road to site is not currently negotiable for the 16-axle flat top trailer due to the requirement for widening works to the inside of the turn including ground works to cut into and remove an earth bank.

Network Rail and PKC have been contacted regarding the structural capacity of structure no's A822/01 Millstone Burn, SCM4/B/21 A822 Main Road, A822/03 River Allan and B8033/03 Bridge Of Keir as to whether they are capable of accommodating the 16-axle flat top trailer. SCM4/B/21 A822 Main Road has been cleared by Network Rail, however, PKC have advised that all three of their structures need to be assessed before being deemed capable of accommodating the 16-axle flat top trailer. Structure no's A822/01 Millstone Burn and A822/03 River Allan are suitable for overbridging, should the results of further structural assessment be negative, however, structure no. B8033/03 Bridge of Keir is unsuitable and therefore poses a high risk to delivery of the SGTs.

A quotation to undertake the structural assessments for both the 24-axle girder frame trailer and 16-axle flat top trailer has been submitted and approved by SSEN and is ongoing separately.

Vegetation pruning to a height of 6 m would be required along the length of the route from the trailer interchange location to site in order to accommodate the 5.85 m running height of the 261 te SGT loaded onto 16-axle flat top trailer with the necessary permissions required.

The existing private site access track from the B8033 to Braco Substation is considered negotiable for the 24-axle GFT and the 16-axle flat top trailer with carriageway widening works required at one right-hand turn located at approximate coordinates 56.264694, -3.909056. Vegetation clearance and removal of a wooden fence is required to the inside of one left-hand turn located at approximate coordinates 56.265361, -3.906806. Additional tractor unit(s) would also be required in order to produce the

necessary tractive and braking effort needed to cope with sections of steep gradient on the track. Minor resurfacing works would also be required to make the track negotiable for the vehicle. There are also two cattle grids and two culverts on the existing track that would need to be overbridged or overplated in order for them to accommodate the vehicle.

The proposed site access track from adjacent to Braco Substation to the site at Cambushinnie Substation has been reviewed and the left-hand turn on approach to the site access gate is to be widened to both sides of the carriageway in order to make it negotiable for the 16-axle flat top trailer, whereas it is negotiable for the 24-axle GFT. The right-hand turn through the site access gate en route to the SGT plinths is also to be widened to the inside of the turn along with the site access gate opening in order to accommodate both vehicles. Alternatively, the offside gatepost and sections of fencing adjacent could be made to be de-mountable to provide access. The remainder of the route on site to the SGT plinths is negotiable for both vehicles.

It is proposed that the SGTs be delivered in-line with the plinth centrelines before being offloaded from the vehicle using hydraulic jacks and stools as it is not physically possible for either vehicle to drive directly onto the plinth, plus if the bund walls were already to be in place, then conflict would be expected with the vehicles. It is possible for the 16-axle flat top trailer to travel in-line with both plinth centrelines, however, the overall length of the 24-axle GFT is such that the forward tractor unit is to be removed before moving the SGT in-line otherwise conflict is expected between the vehicle and auxiliary site equipment located to the north. Once offloaded from the delivery vehicle, the SGTs would be rotated and skidded into final position on their respective plinth.

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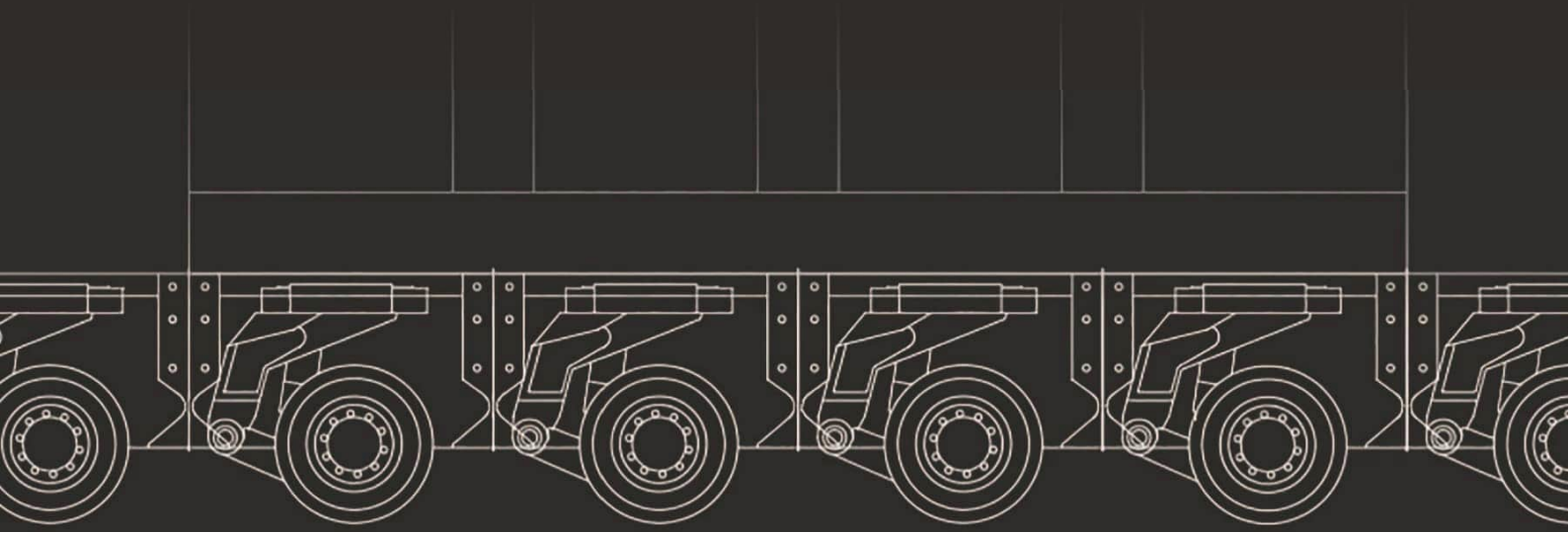
Crane Hire



Pallet Haulage

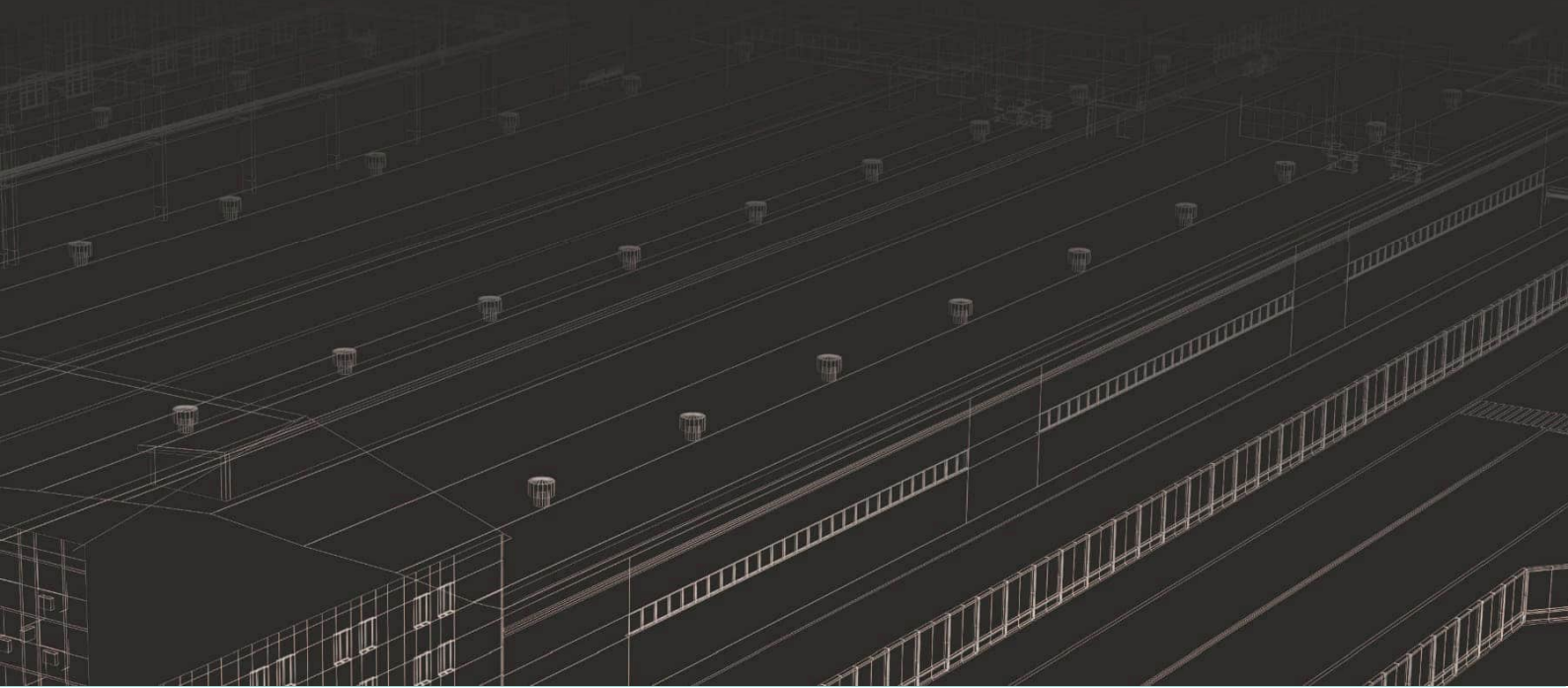


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2. Introduction

- 2.1. Allelys have been commissioned by SSEN to provide a feasibility survey for the transport of 2 in no. 261 te 400/132 kV Super Grid Transformers (SGT) from Grangemouth to Cambushinnie 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. Water Preferred Policy Requirements

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

3.4. Abbreviations

AIL	Abnormal Indivisible Load
C&U	Construction and Use
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
TTRO	Temporary Traffic Regulation Order

4. Cargo Summary

4.1. The below information has been supplied by SSEN.

Table 1 Cargo Dimensions

Description	Qty	Dimensions [mm]	Weight [kg]
Super Grid Transformer	2	L 13,375 x W 4,715 x H 4,727	261,000

5. Port of Delivery

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

6. Locations

6.1. Delivery Address

6.1.1. Cambushinnie Substation is located 30 miles north of Grangemouth.

6.1.2. 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:

Forth Ports (Grangemouth) (port of delivery)

Exit via **Forth Ports (Grangemouth) main access gate** on **Central Dock Rd** (in contraflow through gate)

LH turn from **Central Dock Rd** onto **N Shore Rd**

Straight on at **Timber Basin Roundabout** from **N Shore Rd** onto **A904**

RH turn at **Earl's Gate Roundabout** from **A904** onto **M9**

Straight on at **Keir Roundabout** from **M9** onto **A9**

LH turn from **A9** onto **A822 slip road** (trailer interchange location)

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

A9/A822 slip road (trailer interchange location)

LH turn from **trailer interchange location** onto **A822**

LH turn from **A822** onto **B8033**

RH turn from **B8033** onto **existing Braco Substation site access track**

LH turn continuing on **site access track**

RH turn continuing on **site access track**

LH turn continuing on **site access track**

RH turn continuing on **site access track**

RH turn continuing on **site access track**

LH turn continuing on **site access track**

Straight on at crossroads continuing on **site access track**

RH turn continuing on **site access track**

RH turn continuing on **site access track**

RH turn continuing on **site access track**

Straight on at crossroads continuing on **site access track**

LH turn continuing on **site access track**

RH turn from **existing site access track** onto **proposed Cambushinnie Substation site access track**

LH turn continuing on **proposed site access track**

Cambushinnie Substation (delivery point)



6.2.4. Police Scotland would be required to provide full escort and have advised that the move be carried out late evening or early hours in the morning in order to reduce disruption to other road users.

7.1. Delivery Vehicle

7.1.2. This transport arrangement has a gross weight 441.0 te, width 4.7 m, height 4.9 m and axle line load 18.4 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. ALL-A242494-TA-01 is included under Appendix A.



7.1.3. Following the trailer interchange, it is proposed that the 261 te SGT be transported on a 16-axle flat top trailer, as seen in Figure 3.

7.1.4. This transport arrangement has a gross weight 312.4 te, width 4.7 m, height 5.8 m and axle line load 19.5 te. Therefore, it is to be carried under Special Order legislation. Full technical drawing no. ALL-A242494-TA-02 is included under Appendix A.

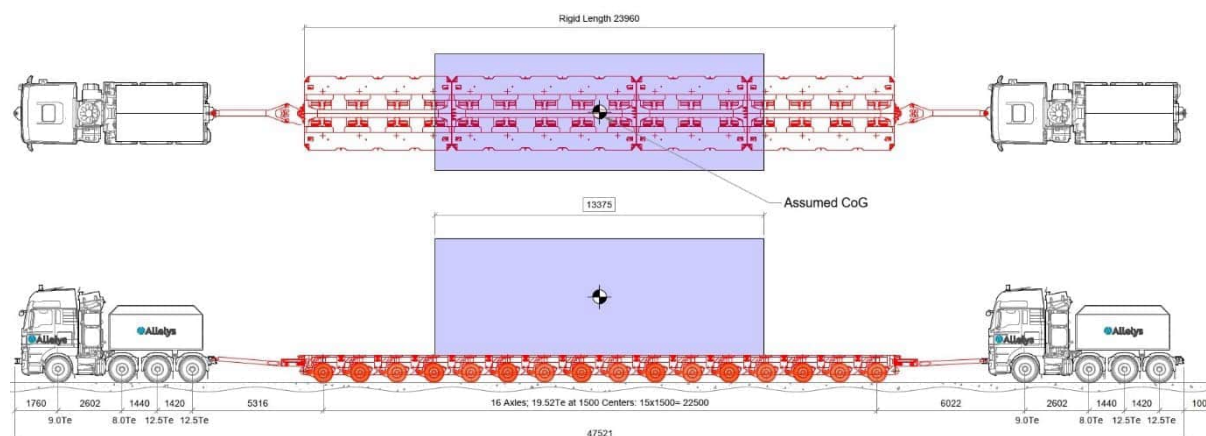


Figure 3 261 te SGT loaded onto 16-axle flat top trailer

8. Structures Details

8.1. The route is not currently considered feasible in terms of structural capacity for the 24-axle GFT, as Transport Scotland, BEAR (South East Scotland), Amey (North East Scotland) and Perth & Kinross Council (PKC) (acting as the Local Highway Authorities (LHA)) have advised that structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, M9 6-7 25 Carron, M9 10-11 5 Forth, A9 80 Auchinlay Rail, A9 90 Allan Water, A822/01 Millstone Burn, A822/03 River Allan and B8033/03 Bridge of Keir have failed their basic in-house checks.

8.2. Therefore, further structural assessments are required to confirm whether the structures are capable of accommodating the vehicle although if the SGT is to be transhipped from the 24-axle GFT onto a 16-axle flat top trailer, then structure no's A822/01 Millstone Burn, A822/03 River Allan and B8033/03 Bridge of Keir need not be assessed for the 24-axle GFT.

8.3. Structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, A822/01 Millstone Burn and B8033/03 Bridge of Keir are thought to be suitable for overbridging, however, the remaining structures are unsuitable and therefore pose a high risk to delivery of the SGTs should the results of the assessments be negative.

8.4. Network Rail and PKC have been contacted regarding the structural capacity of structure no's A822/01 Millstone Burn, SCM4/B/21 A822 Main Road, A822/03 River Allan and B8033/03 Bridge Of Keir as to whether they are capable of accommodating the 16-axle flat top trailer. SCM4/B/21 A822 Main Road has been cleared by Network Rail, however, PKC have advised that all three of their structures need to be assessed before being deemed capable of accommodating the 16-axle flat top trailer.

8.5. A quotation to undertake the structural assessments for both the 24-axle girder frame trailer and 16-axle flat top trailer has been submitted and approved by SSEN and is ongoing separately.

8.6. Full details of all structures on both routes are included in Tables 2 & 3 in Appendix C.

9. Trailer Interchange

- 9.1. Swept Path Assessment (SPA) of the A822/B8033 junction in Braco village has been carried out and has found that the junction is not negotiable for the 24-axle GFT due to the need for third-party land uptake and removal of mature trees/hedgerow when both turning left and performing a shunt manoeuvre continuing northbound on the A822 past the junction before turning the tractor units around and turning right onto the B8033 from the A822 southbound.
- 9.2. SPA has also been carried out of the 24-axle GFT travelling southbound around an S-bend on the B8033 over structure no. B8033/03 Bridge of Keir and, again, the results show a need for the removal of mature trees in order to facilitate the vehicle. A third SPA has been carried out of the 24-axle GFT travelling southbound on the B8033 around a right-hand bend adjacent to the private property "Loaning View", which also shows a requirement for third-party land uptake and removal of mature trees/hedgerow. Therefore, it is deemed that the section of route through Braco village to the private access track is not negotiable for the 24-axle GFT.
- 9.3. To overcome the physical negotiability problems for the 24-axle GFT, it is proposed that the transformers are transhipped from this vehicle onto a 16-axle flat top trailer prior to arrival in Braco village.
- 9.4. The northbound slip road at the A9/A822 junction in Greenloaning has been identified as a suitable transshipment location as there is sufficient working area within the slip road to undertake the trailer interchange operation.
- 9.5. A full closure of the slip road would be required with a diversion for all other road users for the duration of the trailer interchange. PKC have been contacted for comment on the use of the slip road and have advised that the operation would be subject to the relevant applications and would need to be carried out at night in order to reduce disruption to other road users although it is anticipated that the operation would take approximately two days so it would not be possible to satisfy this restriction.
- 9.6. Temporary steel plating will be required on the offside verge of the slip road to accommodate a mobile crane required to undertake lifting operations. Temporary lighting and security measures would also be required to cover the full working area for the duration of the operation.

10. Route Survey

10.1. Route Survey Reference Sheet Notes

10.1.1. Route feasibility recommendations have been identified in Section 10.3 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

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

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

10.2. Route Survey High Level Notes

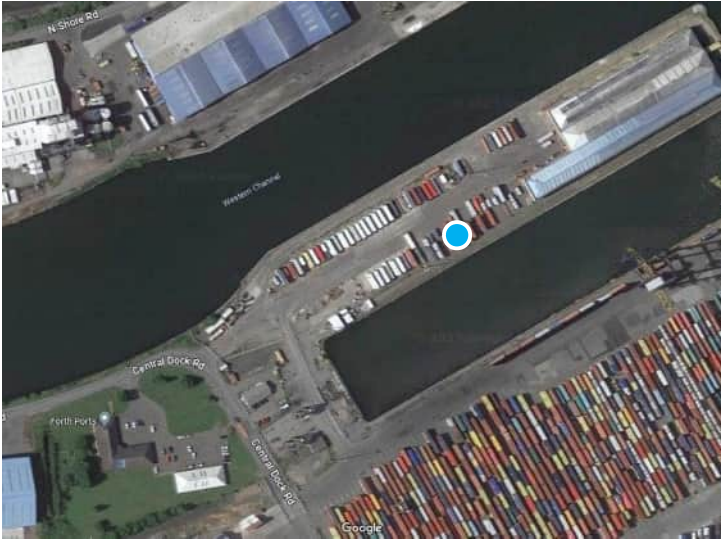
10.2.1. The route from Forth Ports (Grangemouth) to Earl's Gate Roundabout is single carriageway, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from the port and exited onto the M9 northbound.

10.2.2. Once the route departs the A9 dual carriageway onto the A822, the remainder of the route to site is single carriageway, therefore, roads to be closed under TTRO or Police to hold opposing traffic once the vehicle has joined from the A9 and exited onto the private substation access track.



10.2.3. Depending upon growth at the time of delivery, trimming of vegetation to a height of 6 m will be required on the A822 and B8033 to accommodate a vehicle height of 5.85 m.



10.3. Route Survey Reference Sheets



10.3.1. Route 1 Grangemouth to Cambushinnie Substation (24-axle GFT)



Ref. ALL-A242494-RS-01 <i>Forth Ports (Grangemouth) offload quay</i>	
	
Direction of Travel Location: Forth Ports (Grangemouth) quay	Coordinates: 56.024667, -3.701361
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Route survey carried out Confirmation of max. permitted GBP required from Forth Ports (Grangemouth), historical limit = 5 te/m ²	Assessment Work Grade: Complete Low

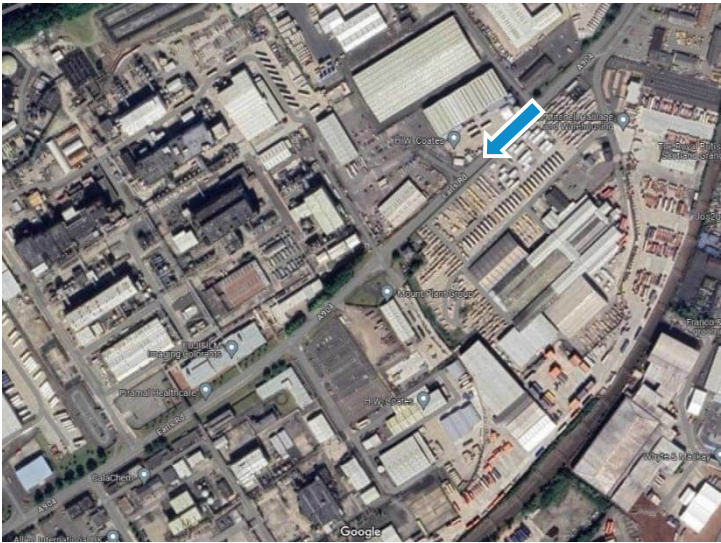

Ref. ALL-A242494-RS-02 <i>Forth Ports (Grangemouth) offload quay access gate</i>	
	
	
Note: - vehicle approaches camera	
Direction of Travel Location: Westbound on Forth Ports (Grangemouth) quay access road through access gate onto Central Dock Rd	Coordinates: 56.023944, -3.703861
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

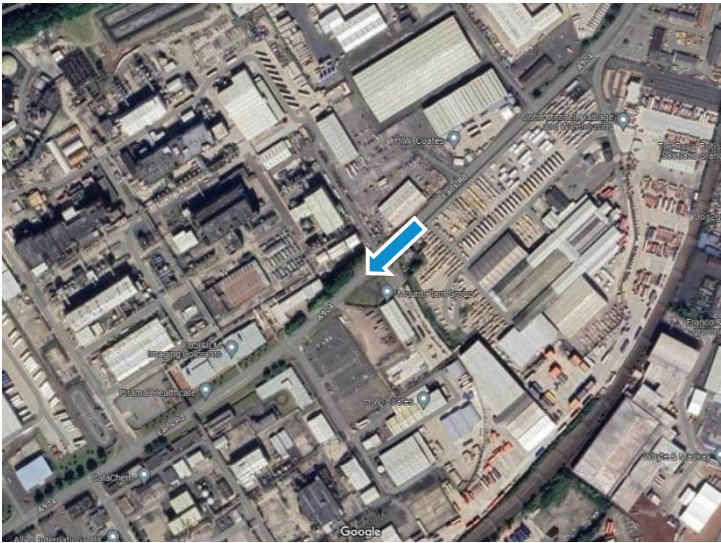

Ref. ALL-A242494-RS-03 <i>Forth Ports (Grangemouth) port security</i>	
	
	
Direction of Travel Location: Westbound on Central Dock Rd through Forth Ports (Grangemouth) port security	Coordinates: 56.021056, -3.724889
Enabling Works Required: Contraflow manoeuvre Removal of barrier support pole and cones	Enabling Work Grade: Medium Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

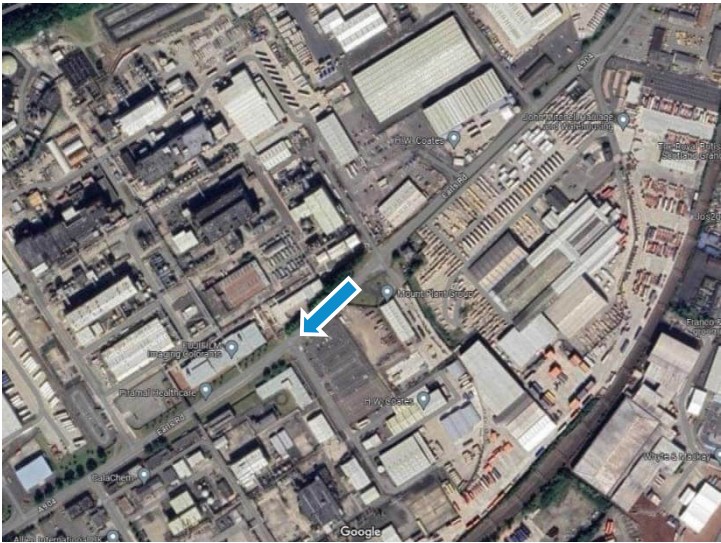

<div>Ref. ALL-A242494-RS-04</div> <div>N Shore Rd/A904 Timber Basin Roundabout</div>	
	
	
<div>Direction of Travel Location:</div> <div>Straight on at A904 Timber Roundabout from N Shore Rd onto A904</div>	<div>Coordinates:</div> <div>56.020333, -3.727778</div>
<div>Enabling Works Required:</div> <div>Removal of 2 no. illuminated road sign and 2 no. non-illuminated road sign</div>	<div>Enabling Work Grade:</div> <div>Medium</div>
<div>Assessment Works Required:</div> <div>Route survey carried out</div>	<div>Assessment Work Grade:</div> <div>Complete</div>

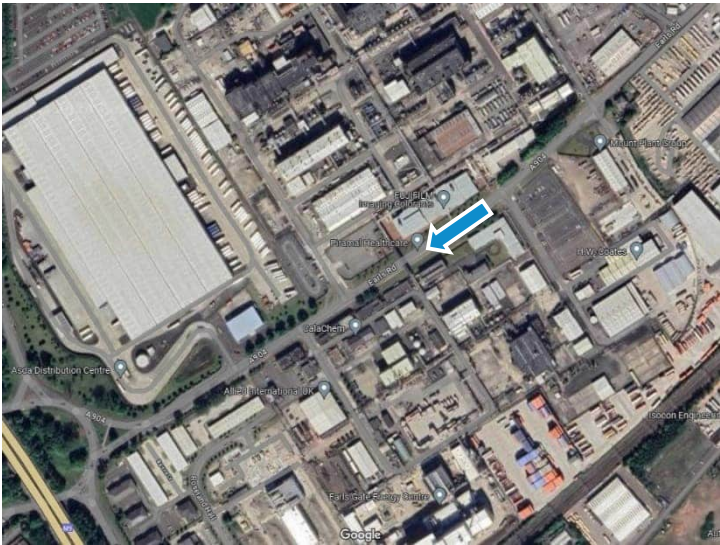
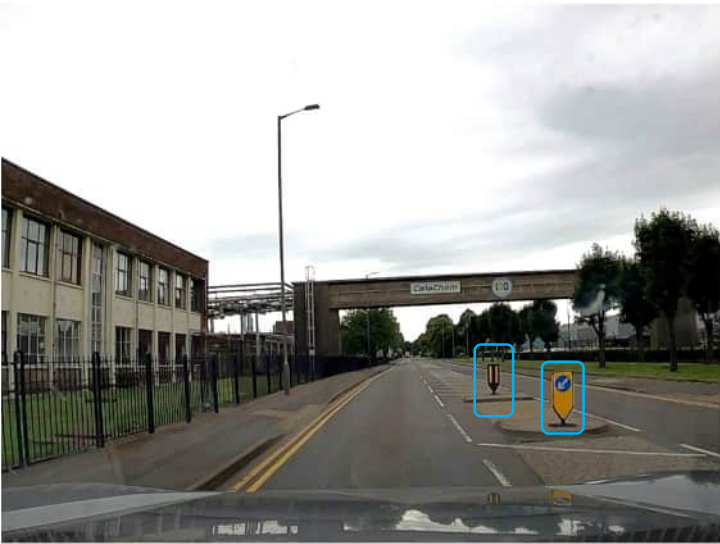
Ref. ALL-A242494-RS-04 cont'd <i>N Shore Rd/A904 Timber Basin Roundabout</i>	
	
	
Direction of Travel Location: Straight on at A904 Timber Roundabout from N Shore Rd onto A904	Coordinates: 56.020333, -3.727778
Enabling Works Required: Removal of 2 no. illuminated road sign and 2 no. non-illuminated road sign	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-04 cont'd <i>N Shore Rd/A904 Timber Basin Roundabout</i>	
	
	
Direction of Travel Location: Straight on at A904 Timber Roundabout from N Shore Rd onto A904	Coordinates: 56.020333, -3.727778
Enabling Works Required: Removal of 2 no. illuminated road sign and 2 no. non-illuminated road sign	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

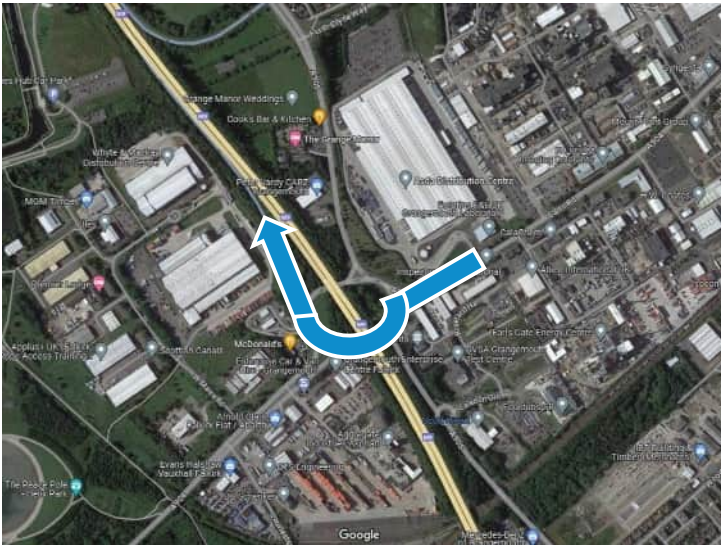

Ref. ALL-A242494-RS-07	
A904 central splitter island no. 1	
	
	
Direction of Travel Location: Southbound on A904	Coordinates: 56.017250, -3.731472
Enabling Works Required: Removal of 2 no. keep left bollard	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete


<div>Ref. ALL-A242494-RS-08</div> <div>A904 central splitter island no. 2</div>	
	
	
<div>Direction of Travel Location:</div> <div>Southbound on A904</div>	<div>Coordinates:</div> <div>56.016056, -3.733722</div>
<div>Enabling Works Required:</div> <div>Removal of 2 no. keep left bollard</div>	<div>Enabling Work Grade:</div> <div>Medium</div>
<div>Assessment Works Required:</div> <div>Route survey carried out</div>	<div>Assessment Work Grade:</div> <div>Complete</div>



Ref. ALL-A242494-RS-09 <i>A904 central splitter island no. 3</i>	
	
	
Direction of Travel Location: Southbound on A904	Coordinates: 56.015333, -3.735056
Enabling Works Required: Removal of 2 no. keep left bollard	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-10	
A904 central splitter island no. 4	
	
	
Direction of Travel Location: Southbound on A904	Coordinates: 56.014639, -3.736667
Enabling Works Required: Removal of 2 no. keep left bollard	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-11 <i>A904 central splitter island no. 5</i>	
	
	
Direction of Travel Location: Southbound on A904	Coordinates: 56.013889, -3.738750
Enabling Works Required: Removal of 2 no. keep left bollard	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-12	
A904 Earl's Gate Roundabout	
	
	
Direction of Travel Location: RH turn at A904 Earl's Gate Roundabout remaining from A904 onto M9	Coordinates: 56.012306, -3.744722
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-12 cont'd <i>A904 Earl's Gate Roundabout</i>	
	
	
Direction of Travel Location: RH turn at A904 Earl's Gate Roundabout remaining from A904 onto M9	Coordinates: 56.012306, -3.744722
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-13 <i>M9 6-7 24 Kelpies (Helix) Canal</i>	
	
	
Direction of Travel Location: Northbound on M9 over structure no. M9 6-7 24 Kelpies (Helix) Canal	Coordinates: 56.019306, -3.754333
Enabling Works Required: Subject to structural assessment	Enabling Work Grade: TBC
Assessment Works Required: Failed Transport Scotland/BEAR (SES) checks Further structural assessment required, suitable for overbridging, if required	Assessment Work Grade: Complete Medium



Ref. ALL-A242494-RS-14	
M9 6-7 25 Carron	
	
	
Direction of Travel Location: Northbound on M9 over structure no. M9 6-7 25 Carron	Coordinates: 56.020628, -3.7557451
Enabling Works Required: Subject to structural assessment	Enabling Work Grade: TBC
Assessment Works Required: Failed Transport Scotland/BEAR (SES) checks Further structural assessment required, unsuitable for overbridging, if required	Assessment Work Grade: Complete High



Ref. ALL-A242494-RS-15	
M9 gradient	
	
	
Direction of Travel Location: Northbound on M9	Coordinates: 56.115639, -3.967306
Enabling Works Required: Additional tractor unit(s) needed to produce necessary braking effort	Enabling Work Grade: Low
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-16 <i>M9 10-11 5 Forth</i>	
	
	
Direction of Travel Location: Northbound on M9 over structure no. M9 10-11 5 Forth	Coordinates: 56.135917, -3.971111
Enabling Works Required: Subject to structural assessment	Enabling Work Grade: TBC
Assessment Works Required: Failed Transport Scotland/BEAR (SES) checks Further structural assessment required, unsuitable for overbridging, if required	Assessment Work Grade: Complete High

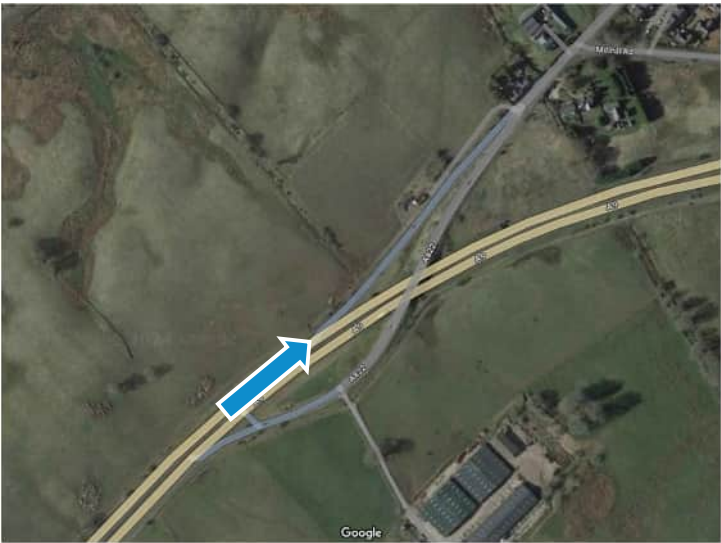

Ref. ALL-A242494-RS-17 <i>M9/A9 Keir Roundabout</i>	
	
	
Direction of Travel Location: Straight on from M9 onto A9 at Keir Roundabout	Coordinates: 56.170222, -3.970306
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

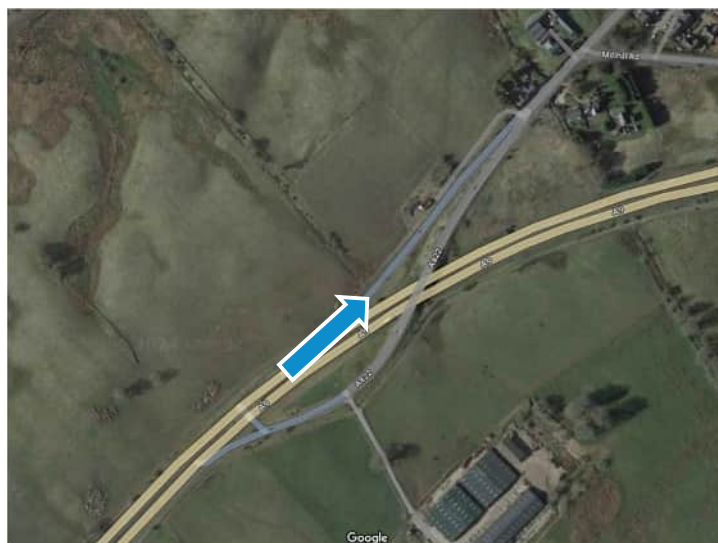
Ref. ALL-A242494-RS-17 cont'd	
M9/A9 Keir Roundabout	
	
	
Direction of Travel Location: Straight on from M9 onto A9 at Keir Roundabout	Coordinates: 56.170222, -3.970306
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-18	
A9 gradient	
	
	
Direction of Travel Location: Northbound on A9	Coordinates: 56.181611, -3.982194
Enabling Works Required: Additional tractor unit(s) needed to produce necessary braking effort	Enabling Work Grade: Low
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-19	
A9 80 Auchinlay Rail	
	
	
Direction of Travel Location: Northbound on A9 over structure no. A9 80 Auchinlay Rail	Coordinates: 56.200667, -3.962667
Enabling Works Required: Subject to structural assessment	Enabling Work Grade: TBC
Assessment Works Required: Failed Transport Scotland/Amey (NES) checks Further structural assessment required, unsuitable for overbridging, if required	Assessment Work Grade: Complete High

Ref. ALL-A242494-RS-20 <i>A9 90 Allan Water</i>	
	
	
Direction of Travel Location: Northbound on A9 over structure no. A9 90 Allan Water	Coordinates: 56.201417, -3.961278
Enabling Works Required: Subject to structural assessment	Enabling Work Grade: TBC
Assessment Works Required: Failed Transport Scotland/Amey (NES) checks Further structural assessment required, unsuitable for overbridging, if required	Assessment Work Grade: Complete High

Ref. ALL-A242494-RS-21	
A9/A822 LH turn	
	
	
Direction of Travel Location: LH turn from A9 onto A822	Coordinates: 56.240083, -3.890611
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-21*A9/A822 slip road trailer interchange location***Direction of Travel Location:**

Northbound on A9/A822 slip road

Coordinates:

56.240639, -3.889611

Enabling Works Required:

Closure of slip road with suitable diversion for other road users, permission required from Amey (NES) and Perth & Kinross Council

Trailer interchange operation

Temporary lighting and security measures

Temporary steel plating of offside verge required for mobile crane

Enabling Work Grade:**High****Medium****Medium****Low****Assessment Works Required:**

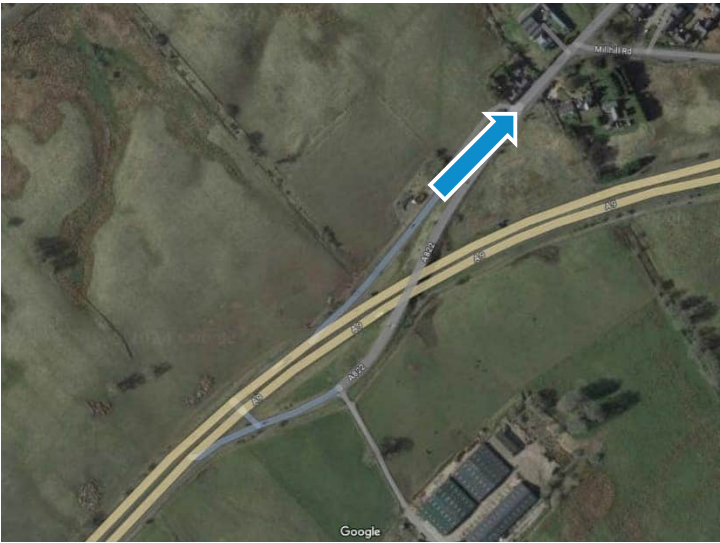

Route survey carried out



Trailer interchange engineering scheme drawing no. ALL-A242494-DR-01 included in Appendix E



Assessment Work Grade:



Complete

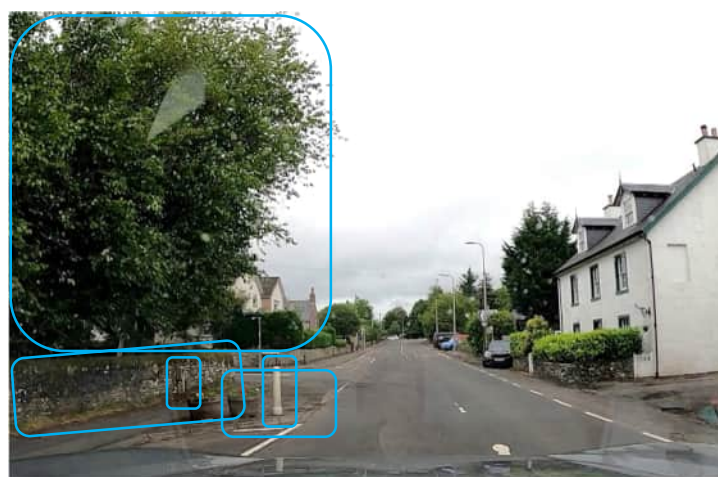
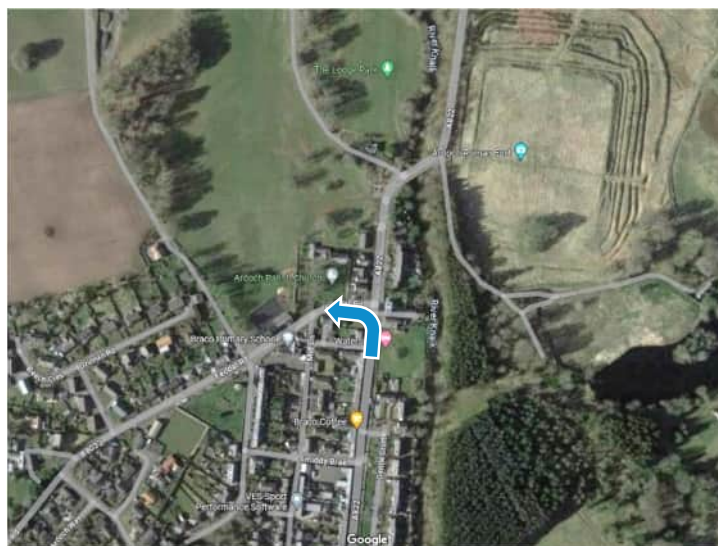
Complete

Ref. ALL-A242494-RS-23 <i>A9 slip road/A822 junction (24-axle GFT)</i>	
	
	
Direction of Travel Location: Straight on from A9 slip road onto A822 northbound	Coordinates: 56.242139, -3.887361
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-24 <i>A822/01 Millstone Burn (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on A822 over structure no. A822/01 Millstone Burn	Coordinates: 56.247000, -3.882250
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, suitable for overbridging, if required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-25 SCM4/B/21 A822 Main Road (24-axle GFT)	
	
	
Direction of Travel Location: Northbound on A822 over structure no. SCM4/B/21 A822 Main Road	Coordinates: 56.247472, -3.882083
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Passed Perth & Kinross Council checks	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-26 <i>A822/03 River Allan (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on A822 over structure no. A822/03 River Allan	Coordinates: 56.249167, -3.881583
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, suitable for overbridging, if required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-27*A822/B8033 junction (24-axle GFT)***Direction of Travel Location:**

LH turn from A822 onto B8033

Coordinates:

56.266083, -3.878611

Enabling Works Required:

Third-party land owner access permission for overrun and oversail beyond assumed highway limits

Removal of section of stone wall

Removal of mature trees

Removal of 1 no. marker post and 2 no. non-illuminated road sign

Temporary steel plating required to facilitate pavement overrun

Enabling Work Grade:**High****High****High****Medium****Low****Assessment Works Required:**

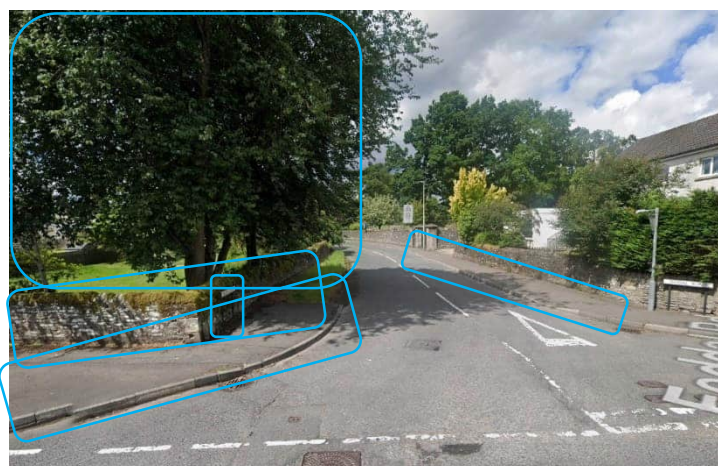
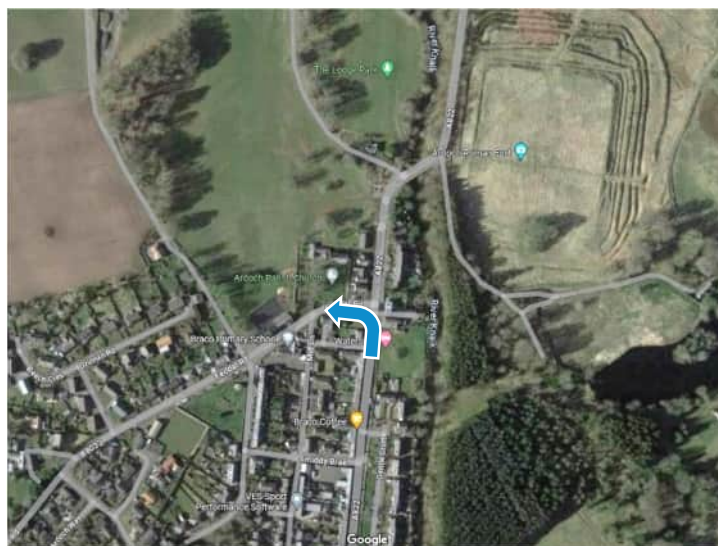
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-01 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-27 cont'd*A822/B8033 junction (24-axle GFT)***Direction of Travel Location:**

LH turn from A822 onto B8033

Coordinates:

56.266083, -3.878611

Enabling Works Required:

Third-party land owner access permission for overrun and oversail beyond assumed highway limits

Removal of section of stone wall

Removal of mature trees

Removal of 1 no. marker post and 2 no. non-illuminated road sign

Temporary steel plating required to facilitate pavement overrun

Enabling Work Grade:**High****High****High****Medium****Low****Assessment Works Required:**



Route survey carried out

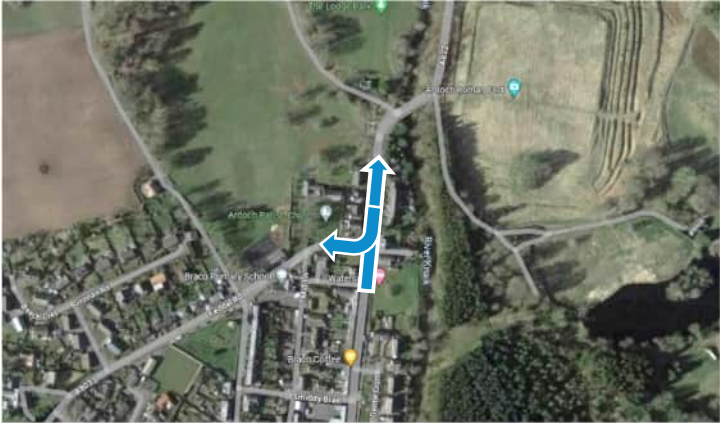
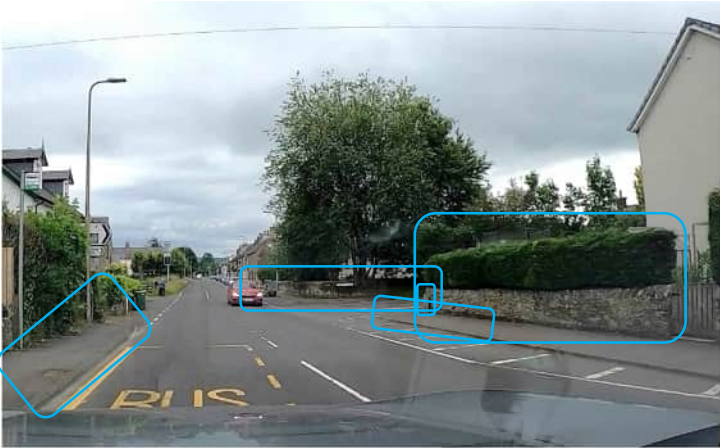
SPA carried out, drawing no. ALL-A242494-SPA-01 included in Appendix D

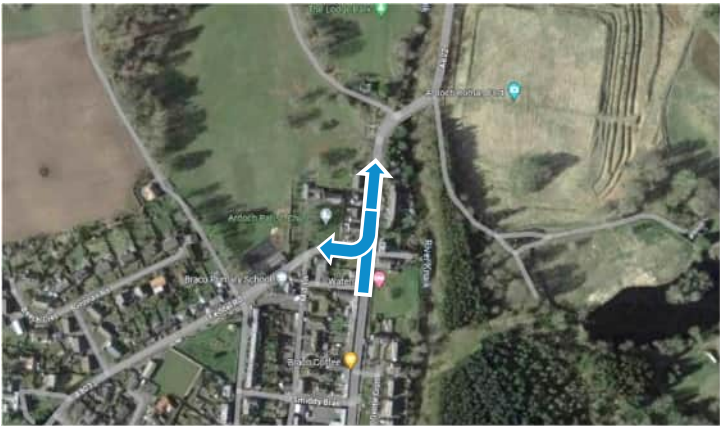
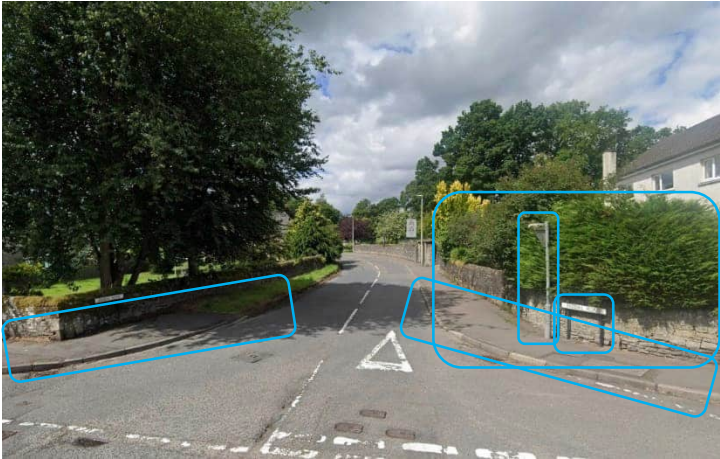
Assessment Work Grade:

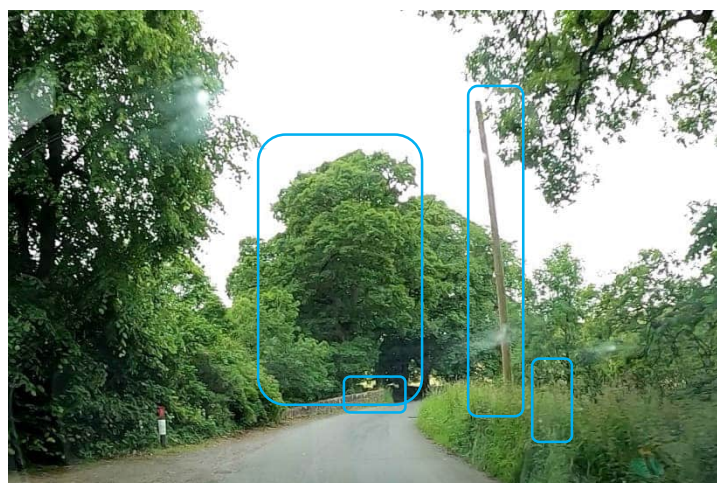
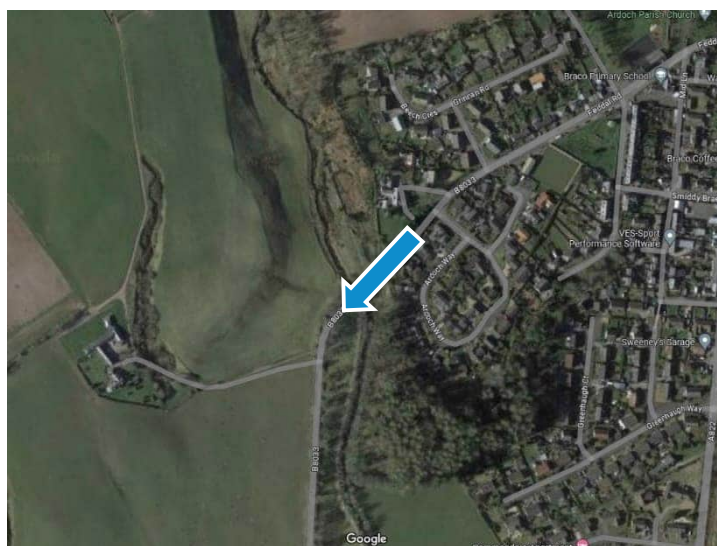
Complete

Complete

Ref. ALL-A242494-RS-27 cont'd A822/B8033 junction (24-axle GFT)	
	
	
Direction of Travel Location: Northbound on A822 past B8033 junction	Coordinates: 56.266083, -3.878611
Enabling Works Required: Shunt manoeuvre	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-01 included in Appendix D	Assessment Work Grade: Complete Complete

<div> <div>Ref. ALL-A242494-RS-27 cont'd</div> <div>A822/B8033 junction (24-axle GFT)</div> </div>	
<div>  </div>	
<div>  </div>	
<div> <div>Direction of Travel Location:</div> <div>RH turn from A822 onto B8033</div> </div>	<div> <div>Coordinates:</div> <div>56.266083, -3.878611</div> </div>
<div> <div>Enabling Works Required:</div> <div> Third-party land owner access permission for overrun and oversail beyond assumed highway limits Removal of section of stone wall Removal of mature hedgerow Removal of 1 no. junction box Removal of 1 no. illuminated road sign, 1 no. non-illuminated road sign and 1 no. marker post Temporary steel plating required to facilitate pavement overrun </div> </div>	<div> <div>Enabling Work Grade:</div> <div> <div>High</div> <div>High</div> <div>High</div> <div>Medium</div> <div>Medium</div> <div>Low</div> </div> </div>
<div> <div>Assessment Works Required:</div> <div> Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-01 included in Appendix D </div> </div>	<div> <div>Assessment Work Grade:</div> <div> Complete Complete </div> </div>

Ref. ALL-A242494-RS-27 cont'd	
A822/B8033 junction (24-axle GFT)	
	
	
Direction of Travel Location: RH turn from A822 onto B8033	Coordinates: 56.266083, -3.878611
Enabling Works Required: Third-party land owner access permission for overrun and oversail beyond assumed highway limits Removal of section of stone wall Removal of mature hedgerow Removal of 1 no. junction box Removal of 1 no. illuminated road sign, 1 no. non-illuminated road sign and 1 no. marker post Temporary steel plating required to facilitate pavement overrun	Enabling Work Grade: High High High Medium Medium Low
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-01 included in Appendix D	Assessment Work Grade: Complete Complete

Ref. ALL-A242494-RS-28*B8033 Bridge of Keir S-bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263917, -3.884861

Enabling Works Required:

Conflict between tractor unit and nearside bridge parapet
 Removal of 1 no. telegraph pole to be removed
 Removal of 1 no. mature tree
 Removal of 1 no. marker post
 Temporary steel plating to accommodate overrun beyond kerb

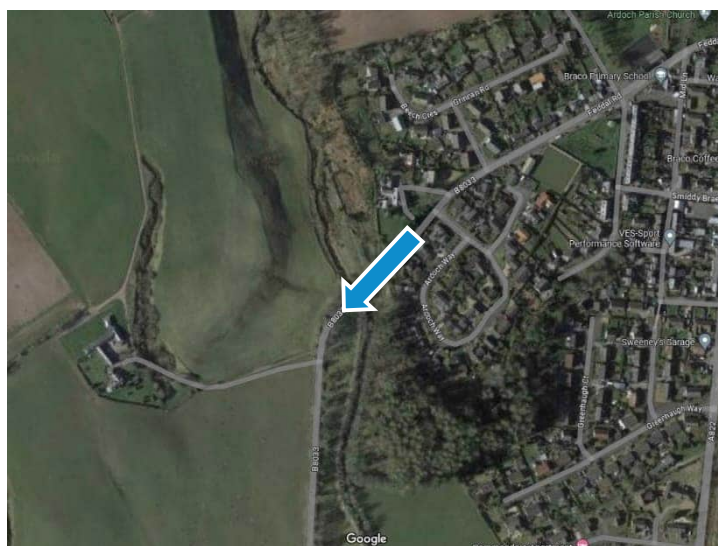
Enabling Work Grade:**High****High****High****Medium****Low****Assessment Works Required:**

Route survey carried out
 SPA carried out, drawing no. ALL-A242494-SPA-02 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-28 cont'd*B8033 Bridge of Keir S-bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263778, -3.885167

Enabling Works Required:

Conflict between tractor unit and nearside bridge parapet
 Oversail beyond offside bridge parapet
 Removal of 1 no. mature tree
 Temporary steel plating to accommodate overrun beyond kerb

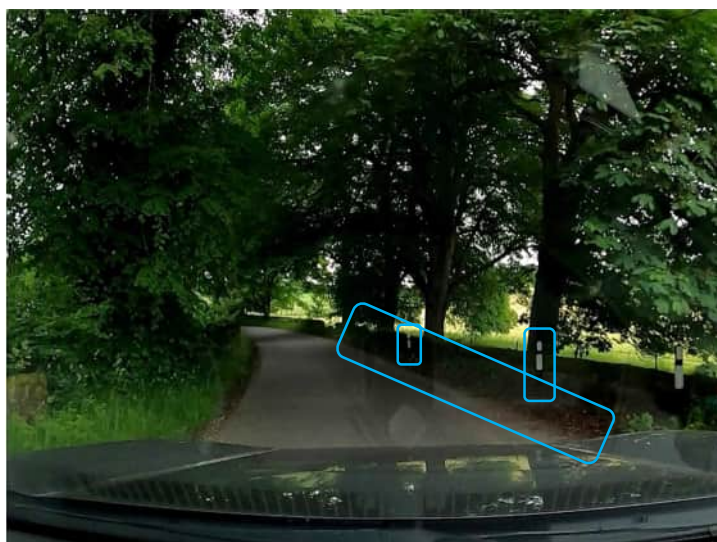
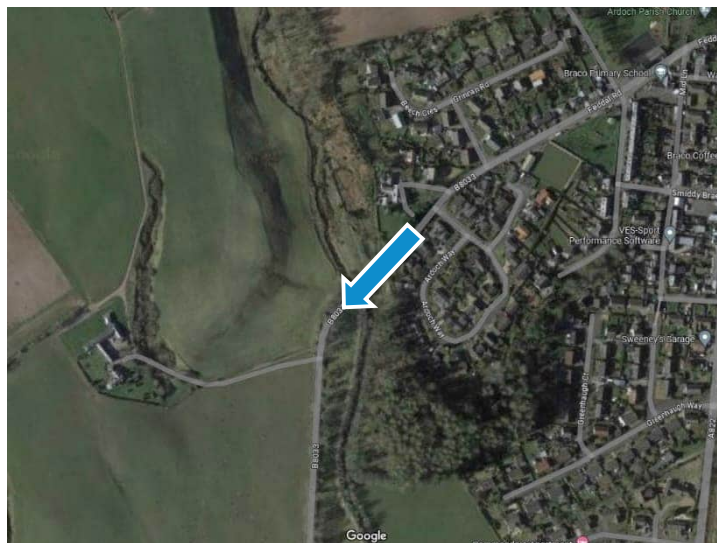
Enabling Work Grade:**High****High****High****Low****Assessment Works Required:**

Route survey carried out
 SPA carried out, drawing no. ALL-A242494-SPA-02 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-28 cont'd*B8033 Bridge of Keir S-bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263667, -3.885417

Enabling Works Required:

Removal of 2 no. plastic bollard

Temporary steel plating to accommodate overrun beyond kerb

Enabling Work Grade:**Medium****Low****Assessment Works Required:**

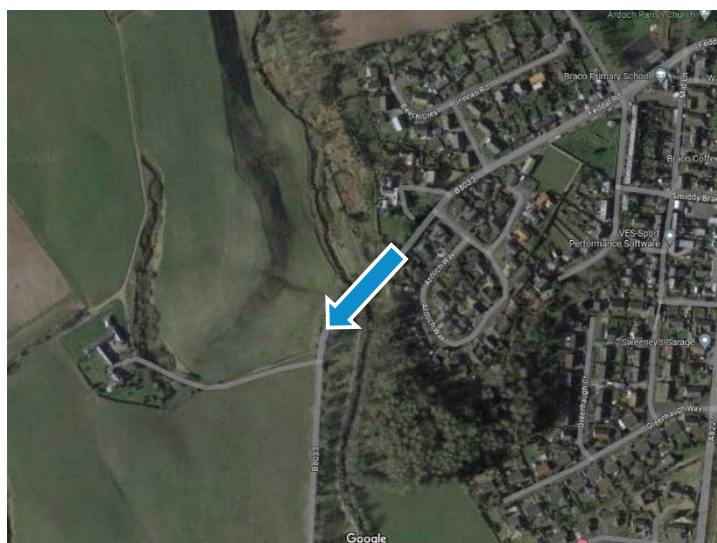
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-02 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-28 cont'd*B8033 Bridge of Keir S-bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263528, -3.885667

Enabling Works Required:

Removal of 1 no. mature tree and section of mature hedgerow
 Temporary steel plating to accommodate overrun beyond kerb

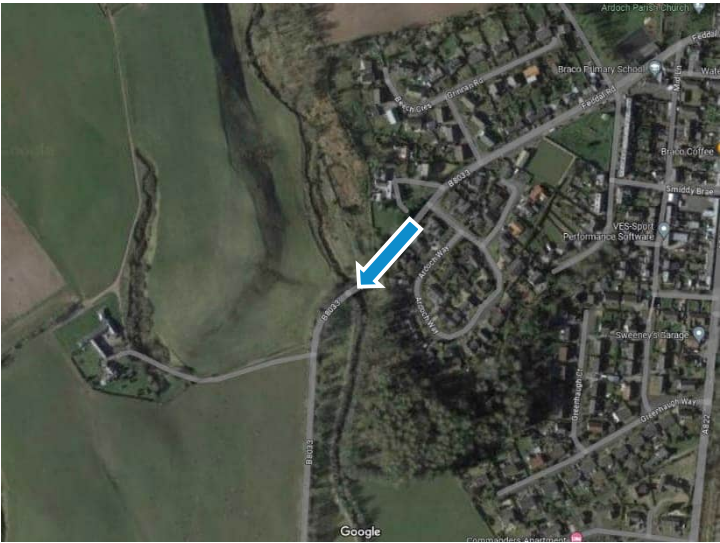

Enabling Work Grade:**High****Low****Assessment Works Required:**

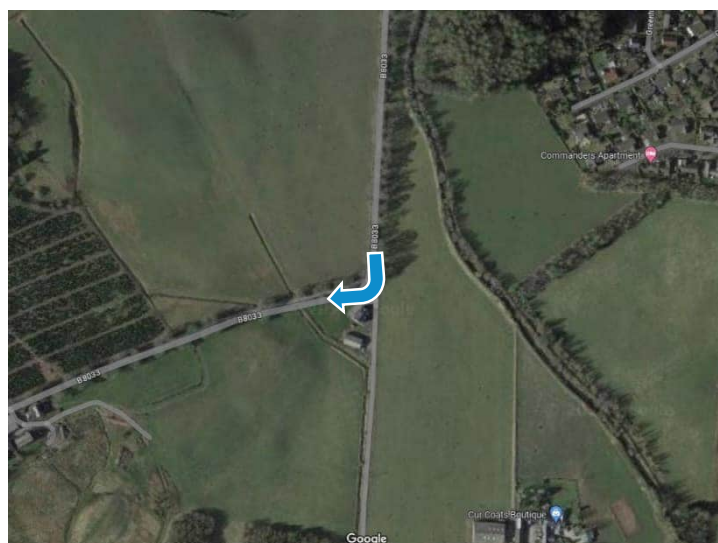
Route survey carried out
 SPA carried out, drawing no. ALL-A242494-SPA-02 included in
 Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-29	
B8033/03 Bridge of Keir (24-axle GFT)	
	
	
Direction of Travel Location: Westbound on B8033 over structure no. B8033/03 Bridge of Keir	Coordinates: 56.263750, -3.885250
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, unsuitable for overbridging	Assessment Work Grade: Complete High

Ref. ALL-A242494-RS-30*B8033 Loaning View RH bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 around RH bend at Loaning View

Coordinates:

56.260139, -3.886278

Enabling Works Required:

Third-party land owner permission for oversail beyond assumed highway limits to inside of bend

Removal of 2 no. mature trees and section of mature hedgerow

Removal of section of post and wire fence line

Temporary steel plating to accommodate overrun beyond kerb

Enabling Work Grade:**High****High****Medium****Low****Assessment Works Required:**

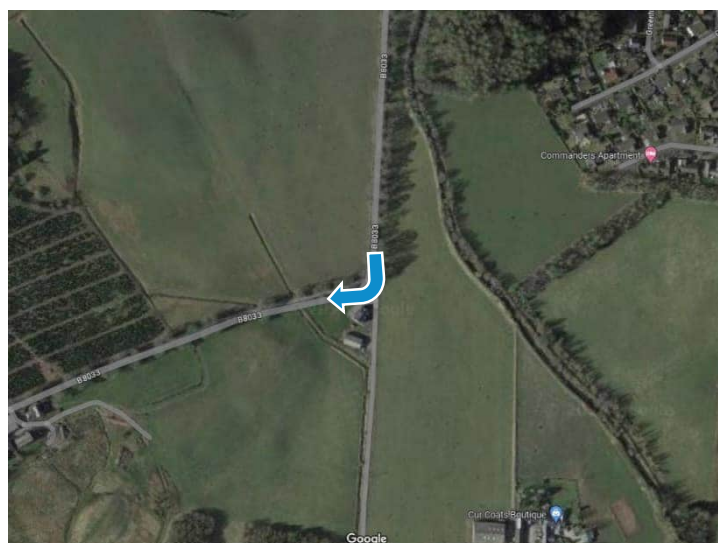
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-03 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-30 cont'd*B8033 Loaning View RH bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 around RH bend at Loaning View

Coordinates:

56.260139, -3.886278

Enabling Works Required:

Third-party land owner permission for oversail beyond assumed highway limits to inside of bend

Removal of 2 no. mature trees and section of mature hedgerow

Removal of section of post and wire fence line

Temporary steel plating to accommodate overrun beyond kerb

Enabling Work Grade:**High****High****Medium****Low****Assessment Works Required:**

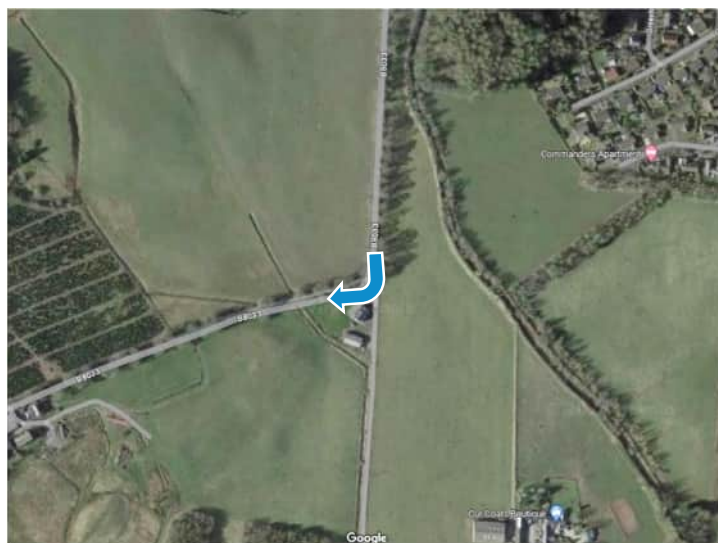
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-03 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-30 cont'd*B8033 Loaning View RH bend (24-axle GFT)***Direction of Travel Location:**

Westbound on B8033 around RH bend at Loaning View

Coordinates:

56.260139, -3.886278

Enabling Works Required:

Third-party land owner permission for oversail beyond assumed highway limits to inside of bend

Removal of 2 no. mature trees

Removal of section of post and wire fence line

Temporary steel plating to accommodate overrun beyond kerb

Enabling Work Grade:**High****High****Medium****Low****Assessment Works Required:**

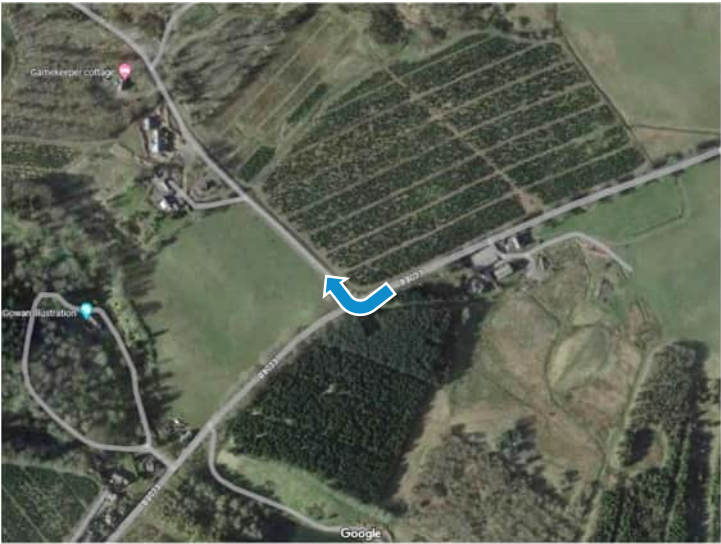

Route survey carried out

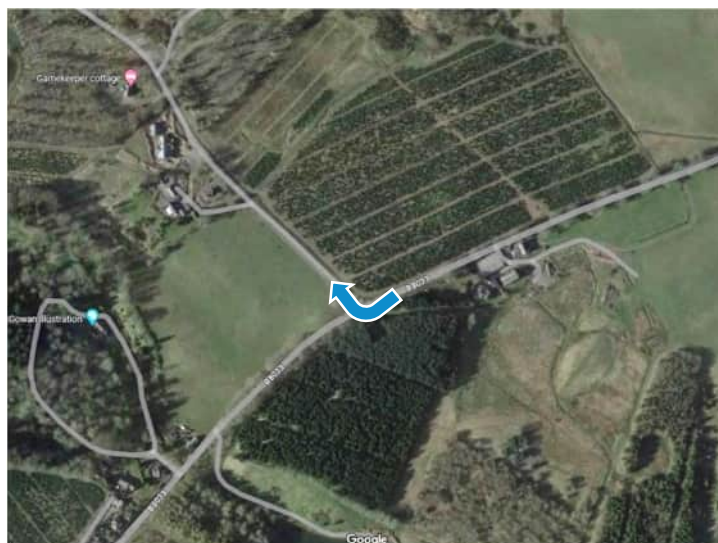
SPA carried out, drawing no. ALL-A242494-SPA-03 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-31 <i>B8033/UC road RH turn (24-axle GFT)</i>	
	
	
Direction of Travel Location: RH turn from B8033 onto UC road	Coordinates: 56.258333, -3.894611
Enabling Works Required: Cut in of bank to inside of turn to accommodate girder frame oversail Vegetation clearance to accommodate oversail Removal of 1 no. non-illuminated road sign	Enabling Work Grade: High High Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-31 cont'd*B8033/UC road RH turn (24-axle GFT)***Direction of Travel Location:**

RH turn from B8033 onto UC road

Coordinates:

56.258333, -3.894611

Enabling Works Required:

Cut in of bank to inside of turn to accommodate girder frame oversail

Vegetation clearance to accommodate oversail

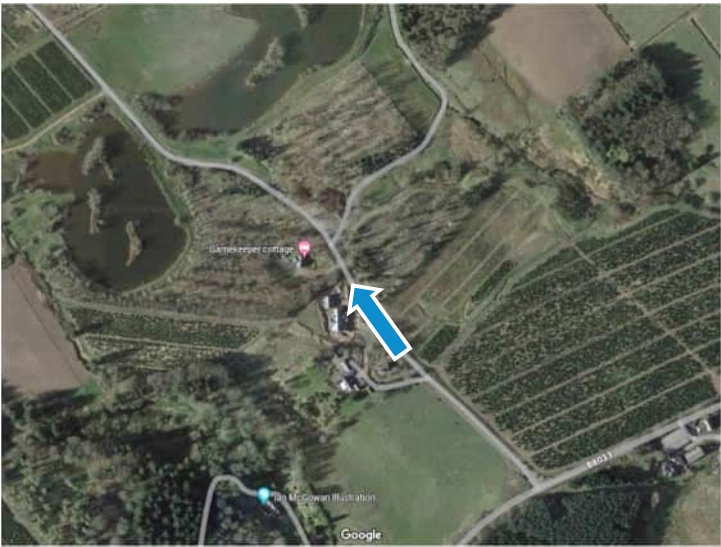

Removal of 1 no. non-illuminated road sign

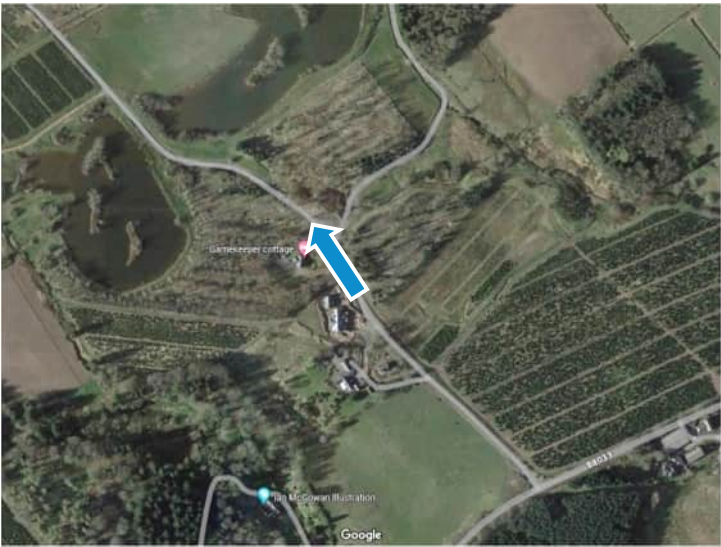

Enabling Work Grade:**High****High****Medium****Assessment Works Required:**



Route survey carried out

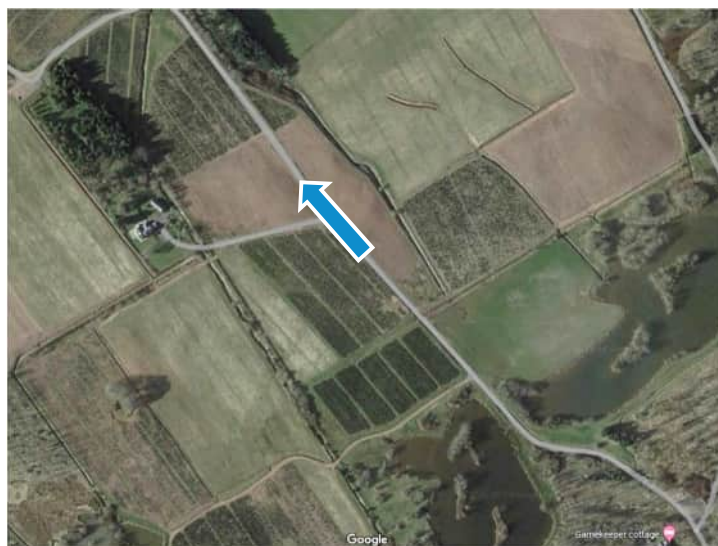
Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-32 <i>Site access track cattle grid no. 1 (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on site access track over cattle grid no. 1	Coordinates: 56.260250, -3.897778
Enabling Works Required: To be overbridged, span = 10.1 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-33 Site access track LH turn no. 1 (24-axle GFT)	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.260556, -3.898000
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-34 <i>Site access track culvert no. 1 (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on site access track over culvert no. 1	Coordinates: 56.262472, -3.902611
Enabling Works Required: To be overbridged, span = 1.0 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-35*Site access track RH turn no. 1 (24-axle GFT)***Direction of Travel Location:**

RH turn no site access track

Coordinates:

56.263361, -3.904111

Enabling Works Required:

N/A

Enabling Work Grade:



N/A



Assessment Works Required:

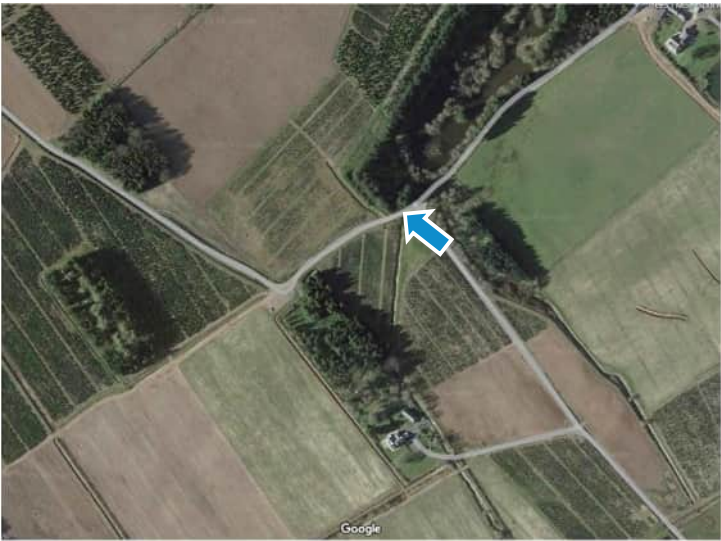

Route survey carried out - negotiable

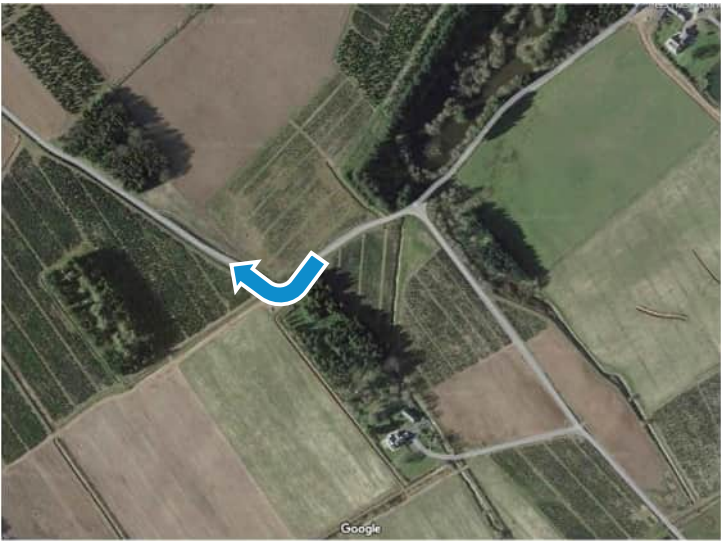

Assessment Work Grade:



Complete

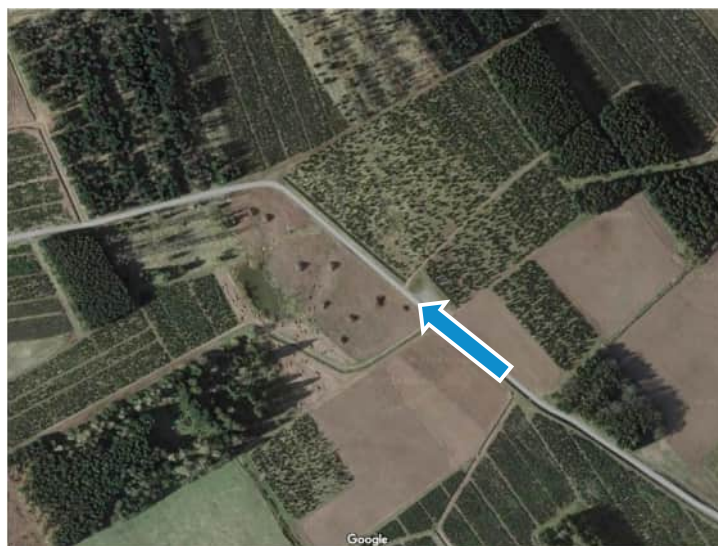
Ref. ALL-A242494-RS-36 <i>Site access track LH turn no. 2 (24-axle GFT)</i>	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.265361, -3.906806
Enabling Works Required: Removal of wooden fence line to inside of turn	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-36 cont'd	
Site access track LH turn no. 2 (24-axle GFT)	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.265361, -3.906806
Enabling Works Required: Removal of wooden fence line to inside of turn	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-37 <i>Site access track culvert no. 2 (24-axle GFT)</i>	
	
	
Direction of Travel Location: Westbound on site access track over culvert no. 2	Coordinates: 56.265361, -3.907000
Enabling Works Required: To be overbridged, span = 2.0 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-38 <i>Site access track RH turn no. 2 (24-axle GFT)</i>	
	
	
Direction of Travel Location: RH turn on site access track	Coordinates: 56.264694, -3.909056
Enabling Works Required: Carriageway widening to inside of turn to accommodate vehicle track	Enabling Work Grade: High
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-39 <i>Site access track gradient (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.265500, -3.911583
Enabling Works Required: Additional tractor unit(s) to provide necessary tractive effort	Enabling Work Grade: Low
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-40*Site access track RH turn no. 3 (24-axle GFT)***Direction of Travel Location:**

RH turn on site access track

Coordinates:

56.266722, -3.914639

Enabling Works Required:

N/A

Enabling Work Grade:

N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-41*Site access track LH turn no. 3 (24-axle GFT)***Direction of Travel Location:**

LH turn on site access track

Coordinates:

56.267028, -3.915222

Enabling Works Required:

N/A

Enabling Work Grade:

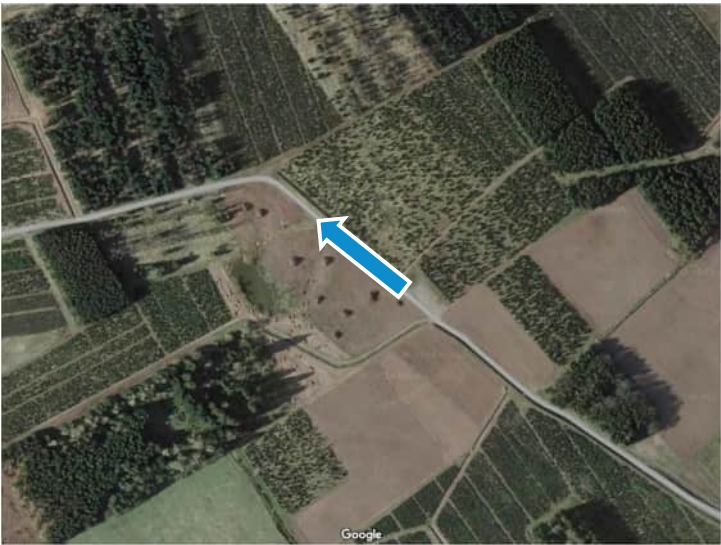

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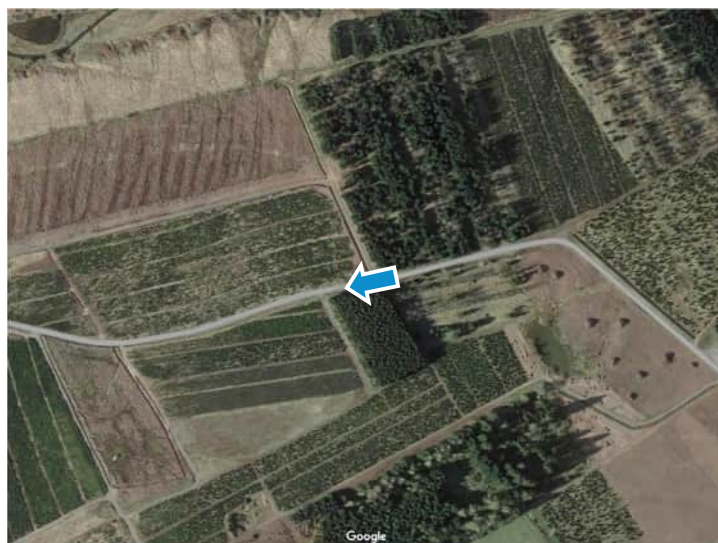
Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-42 <i>Site access track OHL line (24-axle GFT)</i>	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.267611, -3.916472
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Route survey carried out Confirmation of max. permitted vehicle height required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-43*Site access track crossroads no. 1 (24-axle GFT)***Direction of Travel Location:**

Straight on through crossroads on site access track

Coordinates:

56.267611, -3.920389

Enabling Works Required:

N/A

Enabling Work Grade:

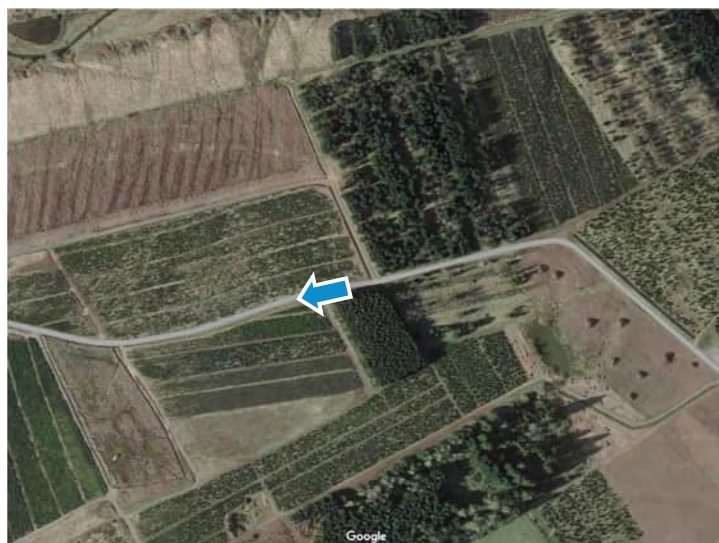
N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-44*Site access track RH turn no. 4 (24-axle GFT)***Direction of Travel Location:**

RH turn on site access track

Coordinates:

56.267528, -3.921361

Enabling Works Required:

N/A

Enabling Work Grade:



N/A



Assessment Works Required:



Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-45	
Site access track RH turn no. 5 (24-axle GFT)	
	
	
Direction of Travel Location: RH turn on Torgoyle OHL track	Coordinates: 56.267056, -3.924667
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-46	
Site access track RH turn no. 6 (24-axle GFT)	
	
	
Direction of Travel Location: RH turn on Torgoyle OHL track	Coordinates: 56.267167, -3.926083
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-47	
Site access track surface (24-axle GFT)	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.267333, -3.927250
Enabling Works Required: Carriageway re-surfacing works	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-48*Site access track crossroads no. 2 (24-axle GFT)***Direction of Travel Location:**

Straight on through crossroads on site access track

Coordinates:

56.267611, -3.928528

Enabling Works Required:

N/A

Enabling Work Grade:



N/A



Assessment Works Required:

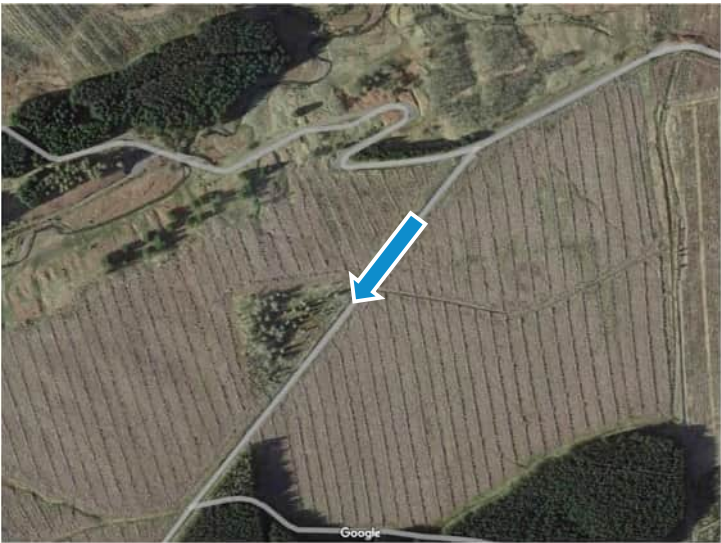

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-49 <i>Site access track cattle grid no. 2 (24-axle GFT)</i>	
	
	
Direction of Travel Location: Westbound on site access track	Coordinates: 56.267806, -3.930750
Enabling Works Required: To be overbridged, span = 9.5 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-50 Site access track LH turn no. 4 (24-axle GFT)	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.266944, -3.933639
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-51 <i>Site access track fence line pinch point (24-axle GFT)</i>	
	
	
Direction of Travel Location: Southbound on site access track	Coordinates: 56.265528, -3.935639
Enabling Works Required: Removal of 1 no. fence post and section of fence line	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-52

Existing Braco Substation access track/proposed Cambushinnie Substation access track RH turn (24-axle GFT)

**Direction of Travel Location:**

RH turn from existing site access track onto proposed Cambushinnie Substation access track

Coordinates:

56.262611, -3.942528

Enabling Works Required:

N/A

Enabling Work Grade:

N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-53*Proposed site access track LH turn no. 1 (24-axle GFT)***Direction of Travel Location:**

RH turn from existing site access track onto proposed Cambushinnie Substation access track

Coordinates:

56.256944, -3.958056

Enabling Works Required:

N/A

Enabling Work Grade:

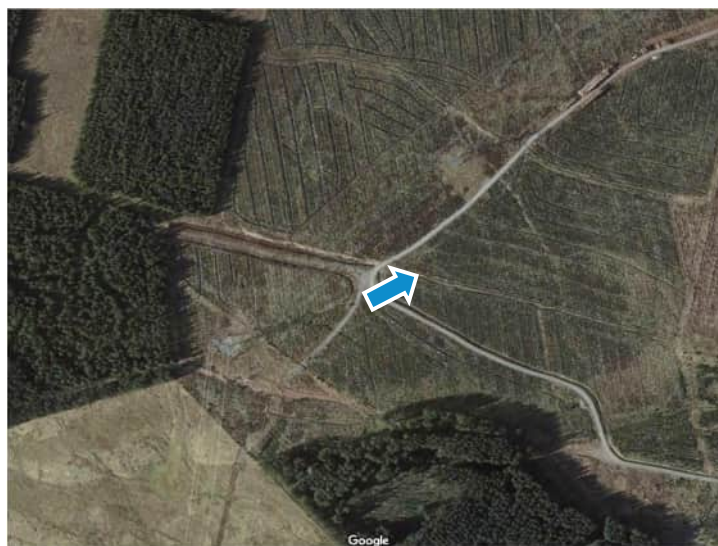
N/A

Assessment Works Required:

Desktop design check carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-54*Cambushinnie Substation access gate (24-axle GFT)***Direction of Travel Location:**

Northbound on proposed Cambushinnie Substation access track through access gate

Coordinates:

56.257222, -3.956667

Enabling Works Required:


Offside gatepost and adjacent fence line to be demountable

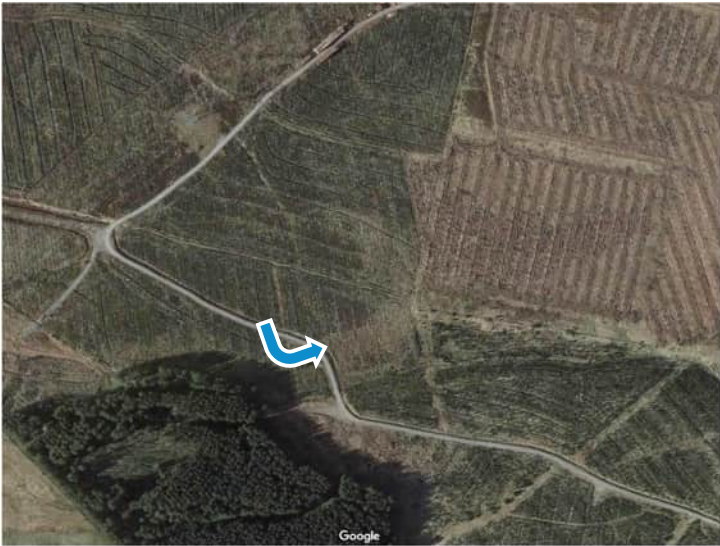
Enabling Work Grade:**Medium****Assessment Works Required:**

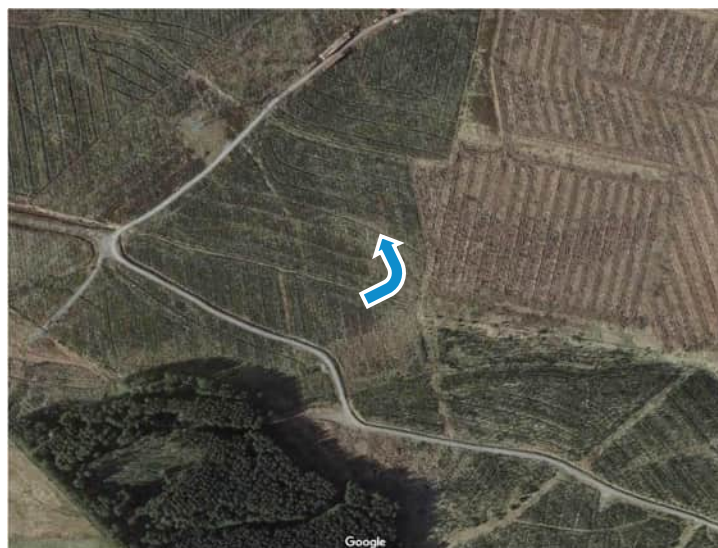
Desktop design check carried out

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-55 <i>Substation site access road RH turn (24-axle GFT)</i>	
	
Direction of Travel Location: RH turn on proposed Cambushinnie Substation site access road	Coordinates: 56.257500, -3.956389
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Desktop design check carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-56 <i>Substation site access road LH turn (24-axle GFT)</i>	
	
Direction of Travel Location: LH turn on proposed Cambushinnie Substation site access road	Coordinates: 56.256111, -3.954444
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Desktop design check carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-57*Substation site access road/western plinth access road LH turn (24-axle GFT)***Direction of Travel Location:**

LH turn from proposed Cambushinnie Substation site access road onto proposed western plinth access road

Coordinates:

56.256944, -3.953056

Enabling Works Required:

N/A

Enabling Work Grade:

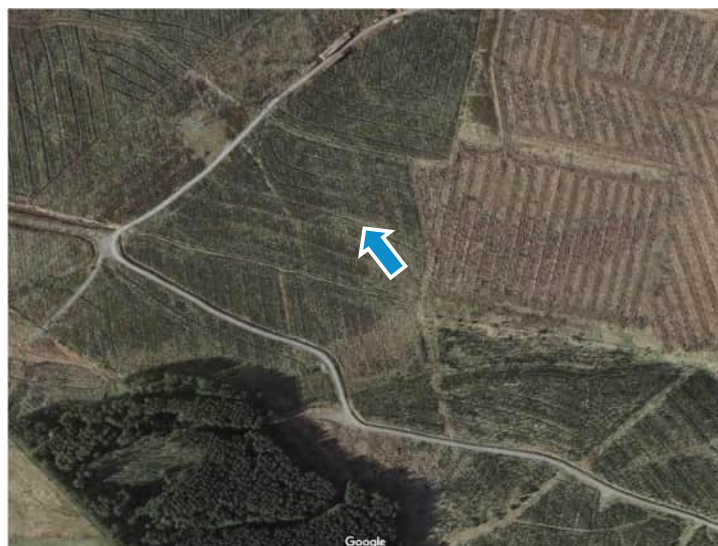
N/A

Assessment Works Required:

Desktop design check carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-58*Western plinth access road/plinth centreline (24-axle GFT)***Direction of Travel Location:**

Northbound on proposed western plinth access road in-line
with western plinth centreline

Coordinates:

56.257222, -3.953333

Enabling Works Required:

Transformer to be offloaded from delivery vehicle using
hydraulic jacks and stools

Transformer to be rotated and skidded into position on plinth
Removal of forward tractor unit to allow vehicle to travel in-line
with plinth centreline

Enabling Work Grade:

Medium

Medium

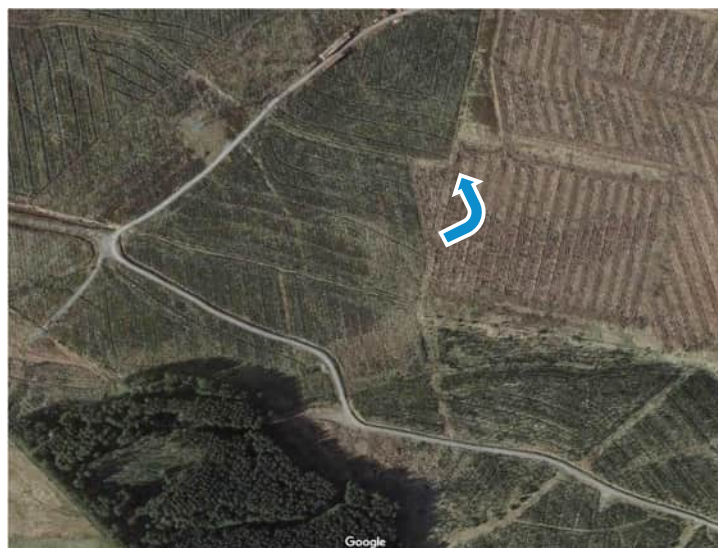
Low

Assessment Works Required:

Desktop design check carried out

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-59*Substation site access road/eastern plinth access road LH turn (24-axle GFT)***Direction of Travel Location:**

LH turn from proposed Cambushinnie Substation site access road onto proposed eastern plinth access road

Coordinates:

56.257500, -3.951389

Enabling Works Required:

N/A

Enabling Work Grade:

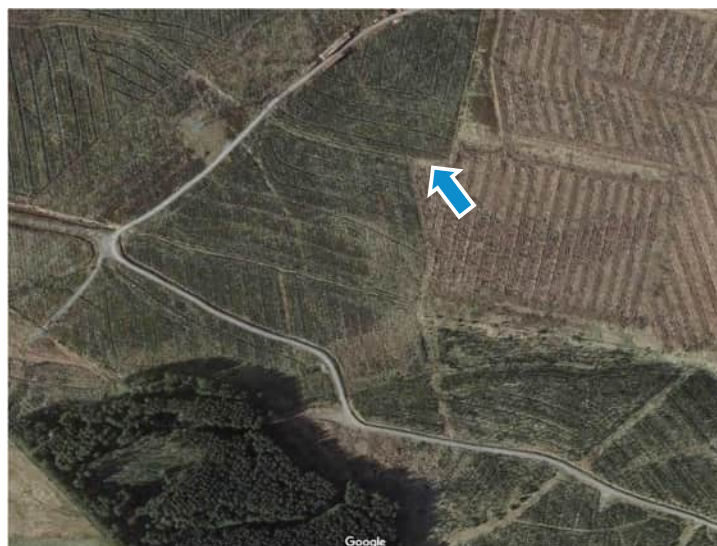
N/A

Assessment Works Required:

Desktop design check carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-60*Eastern plinth access road/plinth centreline (24-axle GFT)***Direction of Travel Location:**

Northbound on proposed eastern plinth access road in-line
with eastern plinth centreline

Coordinates:

56.257778, -3.951944

Enabling Works Required:

Transformer to be offloaded from delivery vehicle using
hydraulic jacks and stools

Transformer to be rotated and skidded into position on plinth

Removal of forward tractor unit to allow vehicle to travel in-line
with plinth centreline

Enabling Work Grade:

Medium

Medium

Low

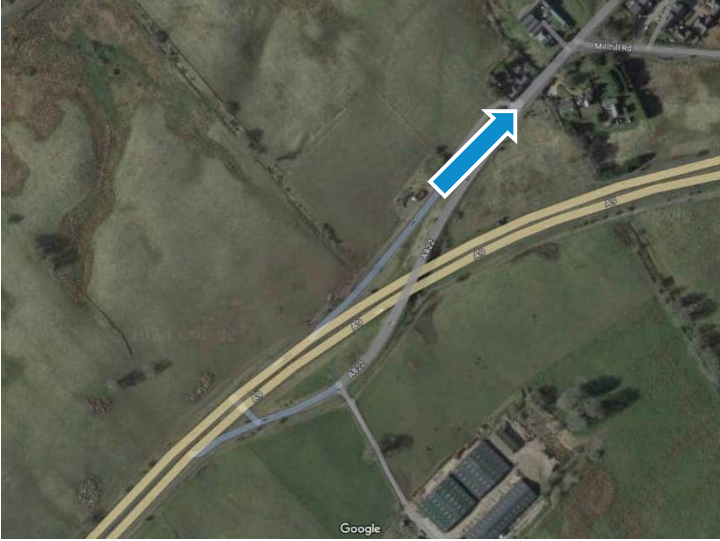

Assessment Works Required:



Desktop design check carried out



Assessment Work Grade:



Complete



10.3.2. Route 2 Trailer Interchange Location to Cambushinnie Substation (16-axle FT)

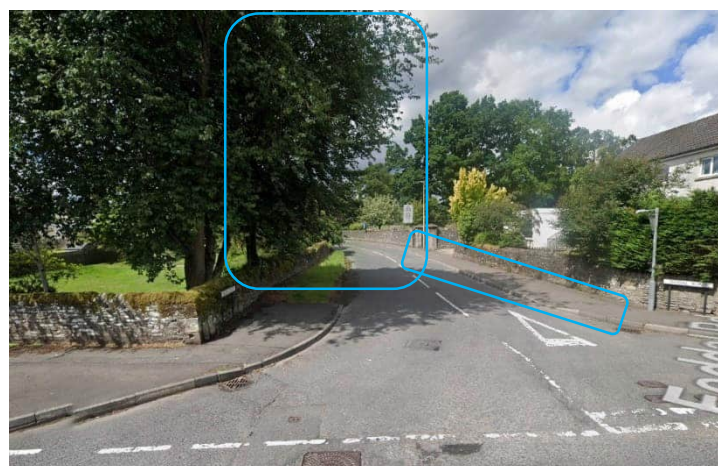
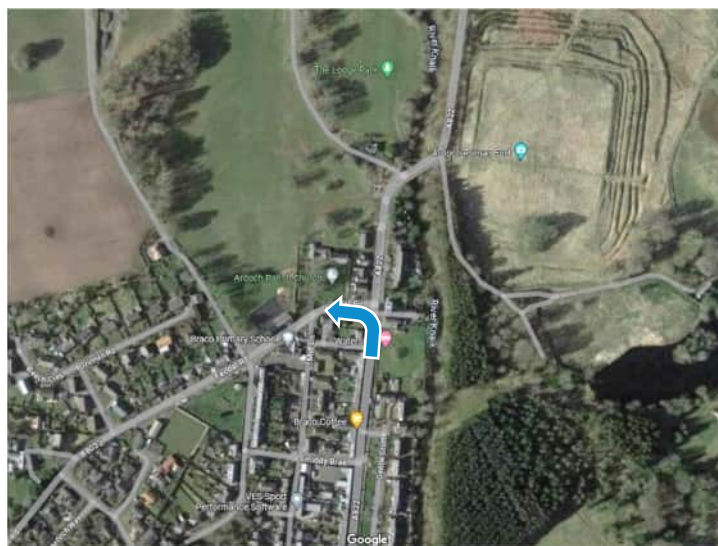
Ref. ALL-A242494-RS-61 <i>A9 slip road/A822 junction (16-axle FT)</i>	
	
	
Direction of Travel Location: Straight on from A9 slip road onto A822 northbound	Coordinates: 56.242139, -3.887361
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-62 <i>A822/01 Millstone Burn (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on A822 over structure no. A822/01 Millstone Burn	Coordinates: 56.247000, -3.882250
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, suitable for overbridging, if required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-63	
SCM4/B/21 A822 Main Road (16-axle FT)	
	
	
Direction of Travel Location: Northbound on A822 over structure no. SCM4/B/21 A822 Main Road	Coordinates: 56.247472, -3.882083
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Passed Perth & Kinross Council checks	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-64 <i>A822/03 River Allan (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on A822 over structure no. A822/03 River Allan	Coordinates: 56.249167, -3.881583
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, suitable for overbridging, if required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-65 <i>A822/B8033 junction (16-axle FT)</i>	
	
	
Direction of Travel Location: LH turn from A822 onto B8033	Coordinates: 56.266083, -3.878611
Enabling Works Required: Temporary steel plating required to facilitate verge overrun	Enabling Work Grade: Low
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-04 included in Appendix D	Assessment Work Grade: Complete Complete

Ref. ALL-A242494-RS-65 cont'd*A822/B8033 junction (16-axle FT)***Direction of Travel Location:**

LH turn from A822 onto B8033

Coordinates:

56.266083, -3.878611

Enabling Works Required:

Vegetation pruning

Temporary steel plating required to facilitate pavement overrun

Enabling Work Grade:**Medium****Low****Assessment Works Required:**

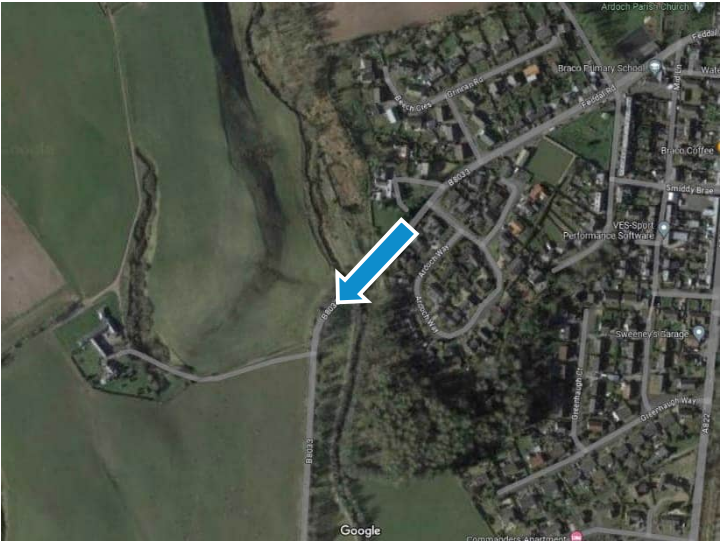

Route survey carried out

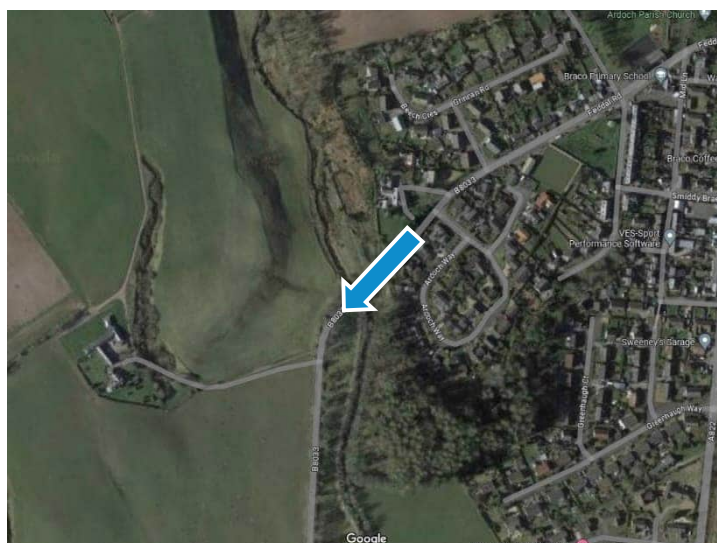
SPA carried out, drawing no. ALL-A242494-SPA-04 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-66 <i>B8033 Bridge of Keir S-bend (16-axle FT)</i>	
	
	
Direction of Travel Location: Westbound on B8033 over Bridge of Keir	Coordinates: 56.263917, -3.884861
Enabling Works Required: Carriageway widening to accommodate overrun beyond kerb to both sides of carriageway Removal of 1 no. plastic bollard Vegetation pruning	Enabling Work Grade: High Medium Medium
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-06 included in Appendix D	Assessment Work Grade: Complete Complete

Ref. ALL-A242494-RS-66 cont'd*B8033 Bridge of Keir S-bend (16-axle FT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263778, -3.885167

Enabling Works Required:

Carriageway widening to accommodate overrun beyond kerb to both sides of carriageway

Removal of 1 no. plastic bollard

Vegetation pruning

Enabling Work Grade:**High****Medium****Medium****Assessment Works Required:**

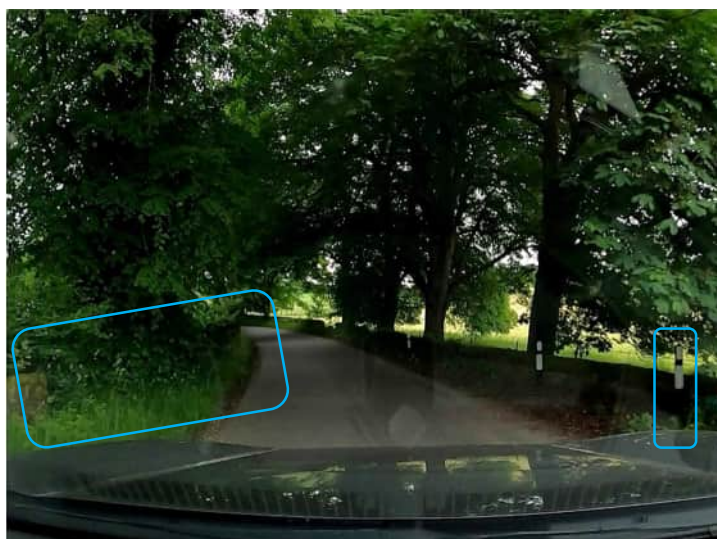
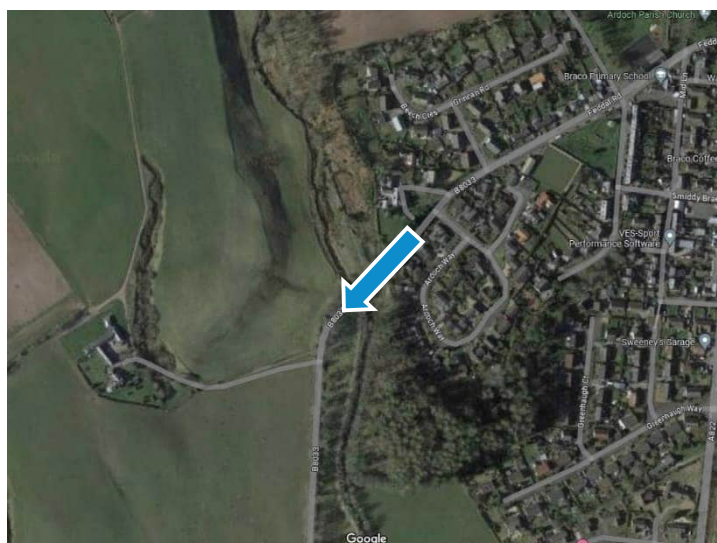
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-06 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-66 cont'd*B8033 Bridge of Keir S-bend (16-axle FT)***Direction of Travel Location:**

Westbound on B8033 over Bridge of Keir

Coordinates:

56.263667, -3.885417

Enabling Works Required:

Removal of 1 no. plastic bollard
Vegetation pruning

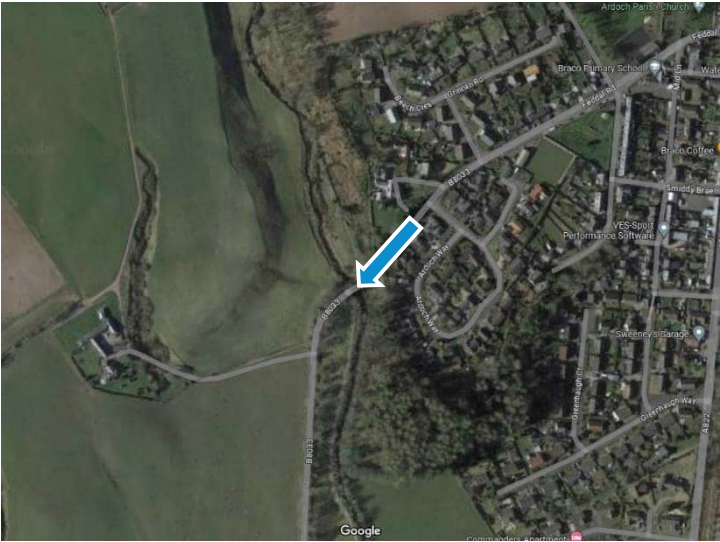

Enabling Work Grade:**Medium****Medium****Assessment Works Required:**

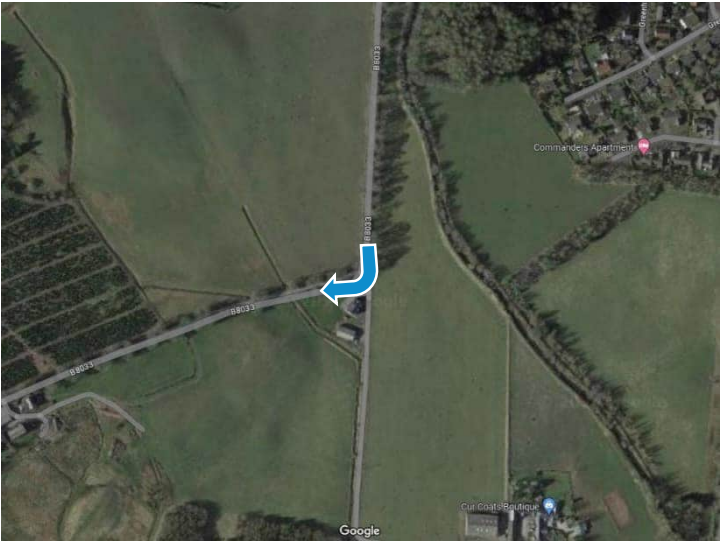
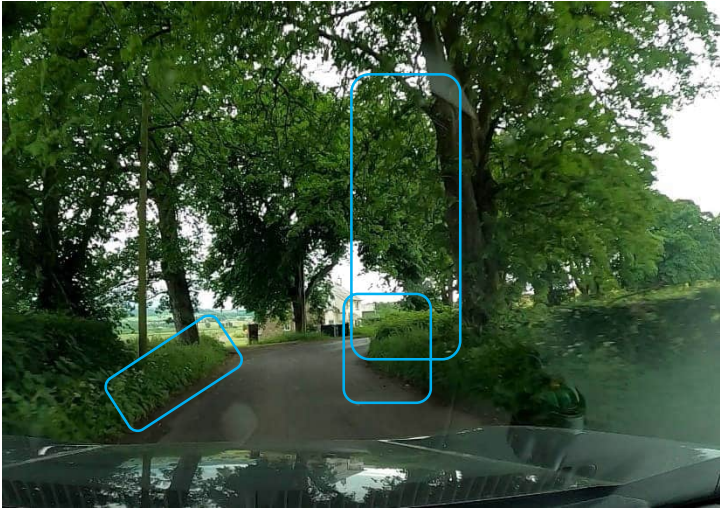
Route survey carried out
SPA carried out, drawing no. ALL-A242494-SPA-06
included in Appendix D

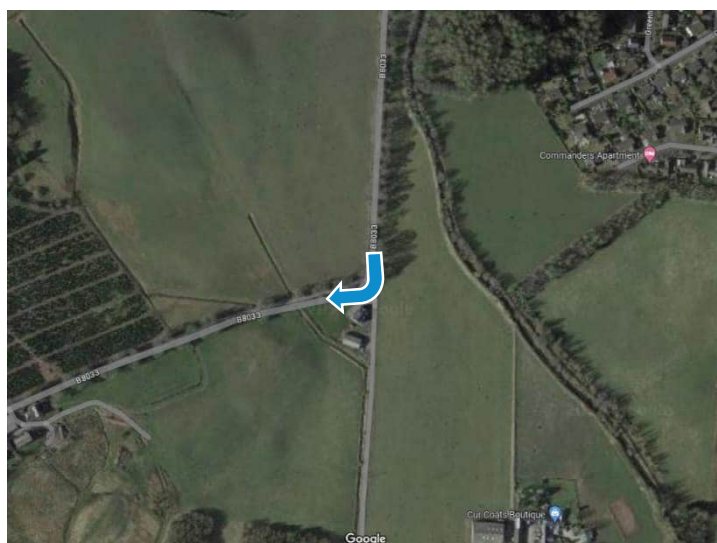
Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-67	
B8033/03 Bridge of Keir (16-axle FT)	
	
	
Direction of Travel Location: Westbound on B8033 over structure no. B8033/03 Bridge of Keir	Coordinates: 56.263750, -3.885250
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Failed Perth & Kinross Council checks Further structural assessment, unsuitable for overbridging, if required	Assessment Work Grade: Complete High

Ref. ALL-A242494-RS-68 <i>B8033 Loaning View RH bend (16-axle FT)</i>	
	
	
Direction of Travel Location: Westbound on B8033 around RH bend at Loaning View	Coordinates: 56.260139, -3.886278
Enabling Works Required: Removal of 1 no. mature tree Carriageway widening to accommodate overrun beyond kerb	Enabling Work Grade: High High
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-07 included in Appendix D	Assessment Work Grade: Complete Complete

Ref. ALL-A242494-RS-68 cont'd*B8033 Loaning View RH bend (16-axle FT)***Direction of Travel Location:**

Westbound on B8033 around RH bend at Loaning View

Coordinates:

56.260139, -3.886278

Enabling Works Required:

Removal of 1 no. mature tree

Carriageway widening to accommodate overrun beyond kerb

Enabling Work Grade:**High****High****Assessment Works Required:**

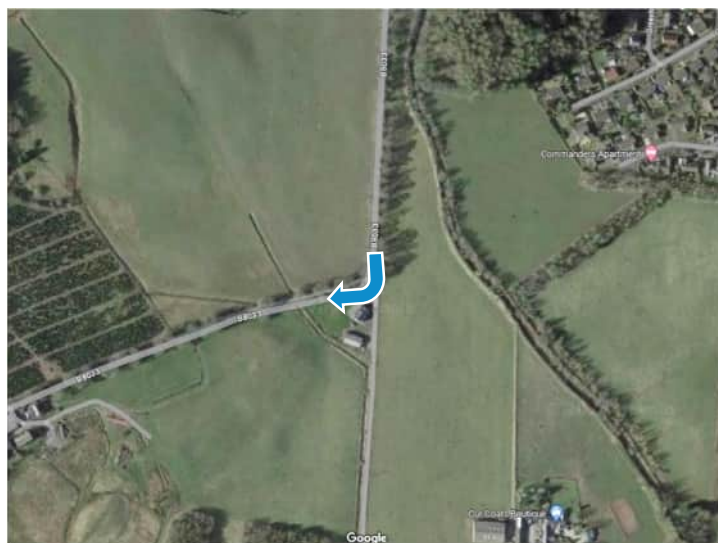
Route survey carried out

SPA carried out, drawing no. ALL-A242494-SPA-07 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-68 cont'd*B8033 Loaning View RH bend (16-axle FT)***Direction of Travel Location:**

Westbound on B8033 around RH bend at Loaning View

Coordinates:

56.260139, -3.886278

Enabling Works Required:

Removal of 1 no. mature tree

Carriageway widening to accommodate overrun beyond kerb

Enabling Work Grade:**High****High****Assessment Works Required:**

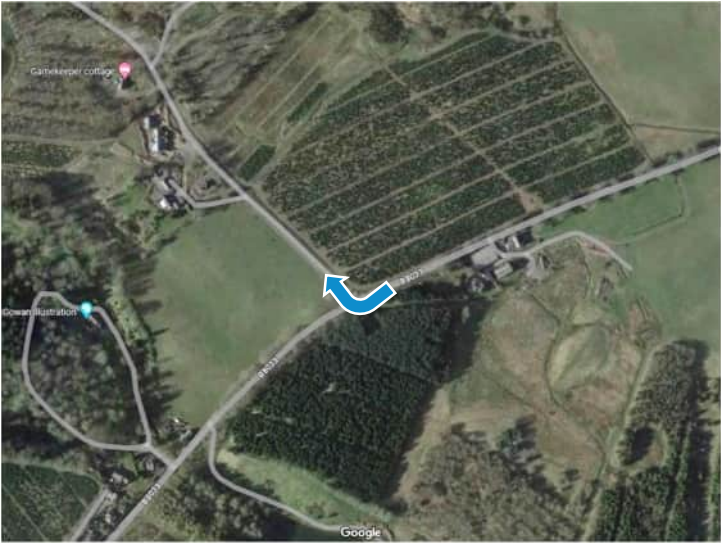

Route survey carried out

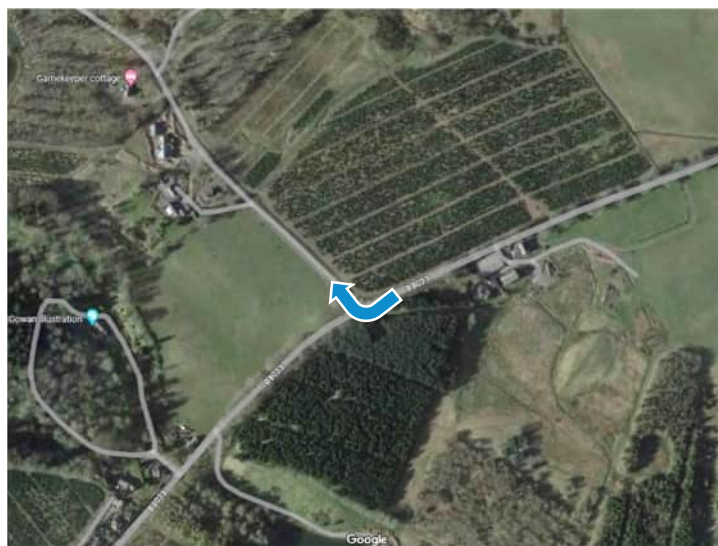
SPA carried out, drawing no. ALL-A242494-SPA-07 included in Appendix D

Assessment Work Grade:

Complete

Complete

Ref. ALL-A242494-RS-69 <i>B8033/UC road RH turn (16-axle FT)</i>	
	
	
Direction of Travel Location: RH turn from B8033 onto UC road	Coordinates: 56.258333, -3.894611
Enabling Works Required: Cut in of bank to inside of turn to accommodate girder frame oversail Vegetation clearance to accommodate oversail Removal of 1 no. non-illuminated road sign	Enabling Work Grade: High High Medium
Assessment Works Required: Route survey carried out SPA carried out, drawing no. ALL-A242494-SPA-05 included in Appendix D	Assessment Work Grade: Complete Complete

Ref. ALL-A242494-RS-69 cont'd*B8033/UC road RH turn (16-axle FT)***Direction of Travel Location:**

RH turn from B8033 onto UC road

Coordinates:

56.258333, -3.894611

Enabling Works Required:

Cut in of bank to inside of turn to accommodate girder frame oversail

Vegetation clearance to accommodate oversail

Removal of 1 no. non-illuminated road sign

Enabling Work Grade:**High****High****Medium****Assessment Works Required:**

Route survey carried out

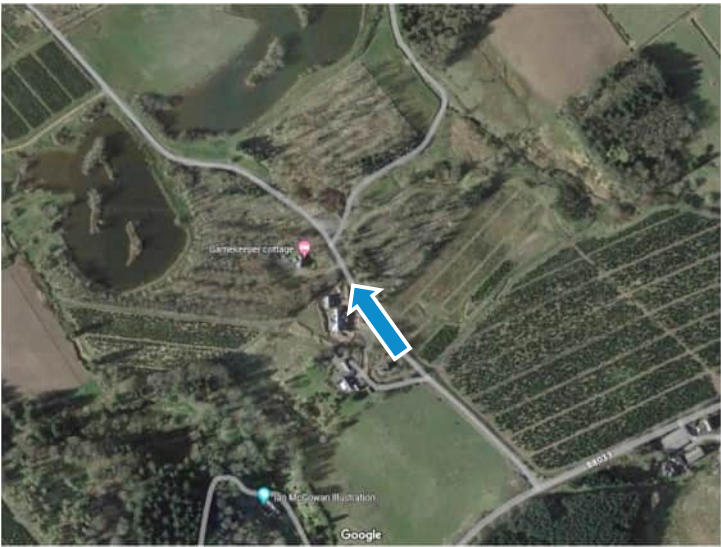

SPA carried out, drawing no. ALL-A242494-SPA-05

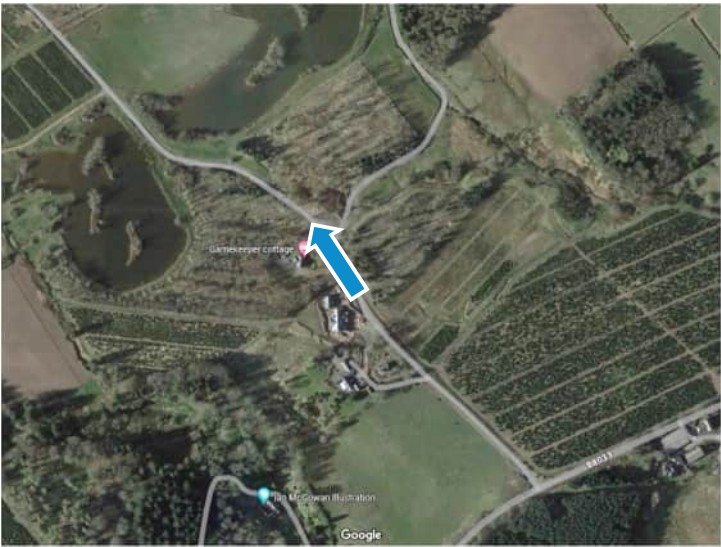

included in Appendix D


Assessment Work Grade:

Complete



Complete



Ref. ALL-A242494-RS-70 <i>Site access track cattle grid no. 1 (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on site access track over cattle grid no. 1	Coordinates: 56.260250, -3.897778
Enabling Works Required: To be overbridged, span = 10.1 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

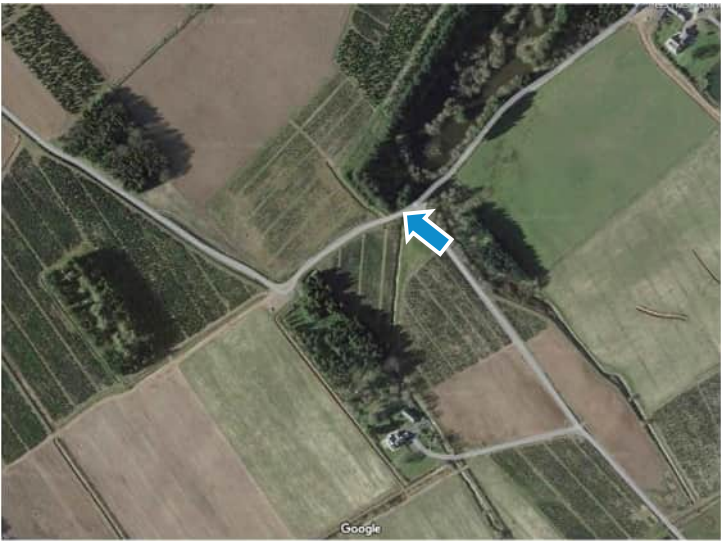

Ref. ALL-A242494-RS-71 Site access track LH turn no. 1 (16-axle FT)	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.260556, -3.898000
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

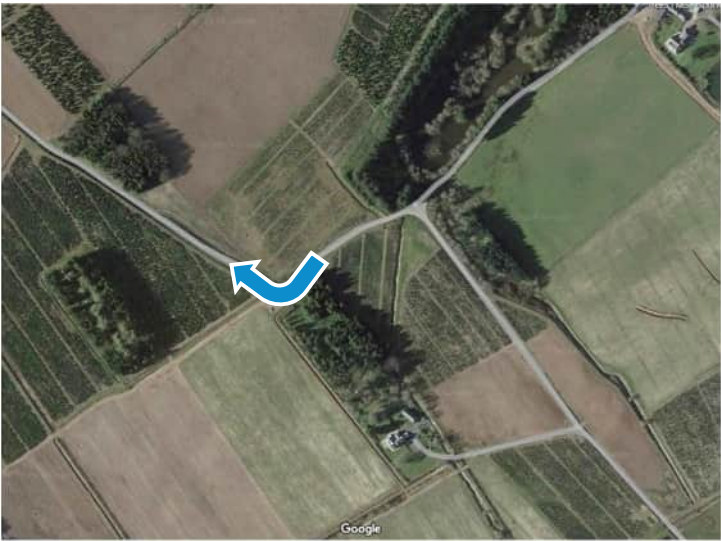

Ref. ALL-A242494-RS-72 <i>Site access track culvert no. 1 (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on site access track over culvert no. 1	Coordinates: 56.262472, -3.902611
Enabling Works Required: To be overbridged, span = 1.0 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-73 <i>Site access track RH turn no. 1 (16-axle FT)</i>	
	
	
Direction of Travel Location: RH turn no site access track	Coordinates: 56.263361, -3.904111
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete



Ref. ALL-A242494-RS-74 <i>Site access track LH turn no. 2 (16-axle FT)</i>	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.265361, -3.906806
Enabling Works Required: Removal of wooden fence line to inside of turn	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-74 cont'd	
Site access track LH turn no. 2 (16-axle FT)	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.265361, -3.906806
Enabling Works Required: Removal of wooden fence line to inside of turn	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-75 <i>Site access track culvert no. 2 (16-axle FT)</i>	
	
	
Direction of Travel Location: Westbound on site access track over culvert no. 2	Coordinates: 56.265361, -3.907000
Enabling Works Required: To be overbridged, span = 2.0 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-76 <i>Site access track RH turn no. 2 (16-axle FT)</i>	
	
	
Direction of Travel Location: RH turn on site access track	Coordinates: 56.264694, -3.909056
Enabling Works Required: Carriageway widening to inside of turn to accommodate vehicle track	Enabling Work Grade: High
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-77 <i>Site access track gradient (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.265500, -3.911583
Enabling Works Required: Additional tractor unit(s) to provide necessary tractive effort	Enabling Work Grade: Low
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-78 <i>Site access track RH turn no. 3 (16-axle FT)</i>	
	
	
Direction of Travel Location: RH turn on site access track	Coordinates: 56.266722, -3.914639
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-79*Site access track LH turn no. 3 (16-axle FT)***Direction of Travel Location:**

LH turn on site access track

Coordinates:

56.267028, -3.915222

Enabling Works Required:

N/A

Enabling Work Grade:

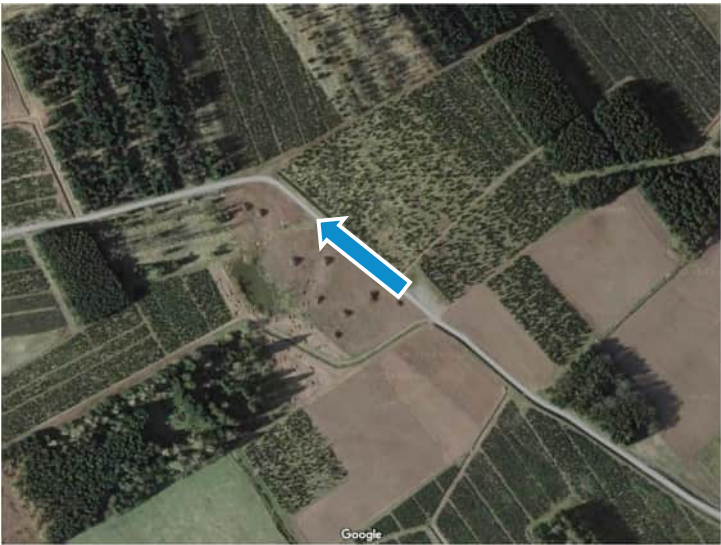

N/A

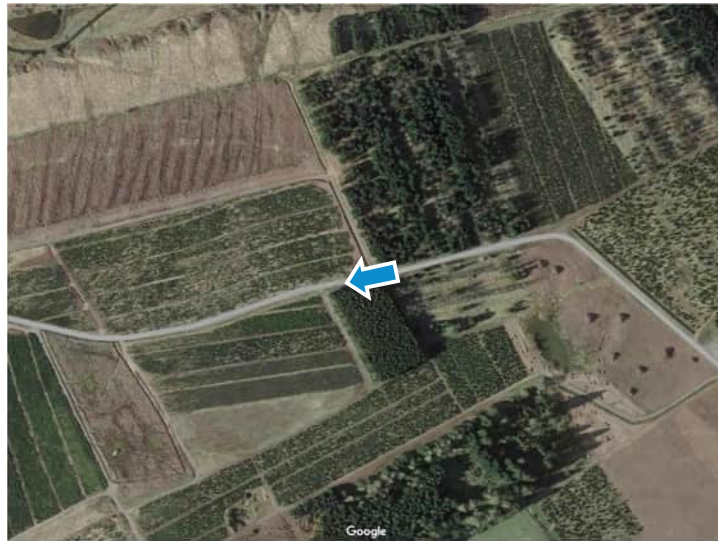
Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-80 <i>Site access track OHL line (16-axle FT)</i>	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.267611, -3.916472
Enabling Works Required: TBC	Enabling Work Grade: TBC
Assessment Works Required: Route survey carried out Confirmation of max. permitted vehicle height required	Assessment Work Grade: Complete Medium

Ref. ALL-A242494-RS-81*Site access track crossroads no. 1 (16-axle FT)***Direction of Travel Location:**

Straight on through crossroads on site access track

Coordinates:

56.267611, -3.920389

Enabling Works Required:

N/A

Enabling Work Grade:

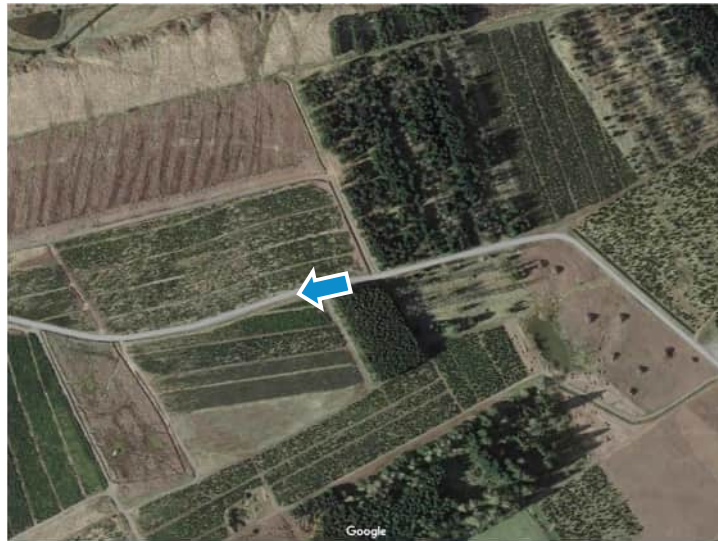
N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-82*Site access track RH turn no. 4 (16-axle FT)***Direction of Travel Location:**

RH turn on site access track

Coordinates:

56.267528, -3.921361

Enabling Works Required:

N/A

Enabling Work Grade:



N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-83 <i>Site access track RH turn no. 5 (16-axle FT)</i>	
	
	
Direction of Travel Location: RH turn on Torgoyle OHL track	Coordinates: 56.267056, -3.924667
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-84*Site access track RH turn no. 6 (16-axle FT)***Direction of Travel Location:**

RH turn on Torgoyle OHL track

Coordinates:

56.267167, -3.926083

Enabling Works Required:

N/A

Enabling Work Grade:



N/A



Assessment Works Required:



Route survey carried out - negotiable



Assessment Work Grade:

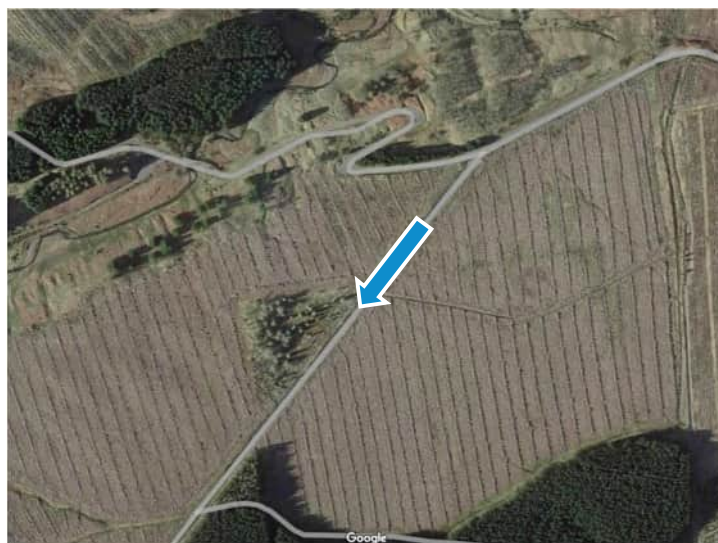
Complete

Ref. ALL-A242494-RS-85	
Site access track surface (16-axle FT)	
	
	
Direction of Travel Location: Northbound on site access track	Coordinates: 56.267333, -3.927250
Enabling Works Required: Carriageway re-surfacing works	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-86	
Site access track crossroads no. 2 (16-axle FT)	
	
	
Direction of Travel Location: Straight on through crossroads on site access track	Coordinates: 56.267611, -3.928528
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-87 <i>Site access track cattle grid no. 2 (16-axle FT)</i>	
	
	
Direction of Travel Location: Westbound on site access track	Coordinates: 56.267806, -3.930750
Enabling Works Required: To be overbridged, span = 9.5 m	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-88 <i>Site access track LH turn no. 4 (16-axle FT)</i>	
	
	
Direction of Travel Location: LH turn on site access track	Coordinates: 56.266944, -3.933639
Enabling Works Required: N/A	Enabling Work Grade: N/A
Assessment Works Required: Route survey carried out - negotiable	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-89*Site access track fence line pinch point (16-axle FT)***Direction of Travel Location:**

Southbound on site access track

Coordinates:

56.265528, -3.935639

Enabling Works Required:

Removal of 1 no. fence post and section of fence line

Enabling Work Grade:**Medium****Assessment Works Required:**

Route survey carried out

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-90

Existing Braco Substation access track/proposed Cambushinnie Substation access track RH turn (16-axle FT)

**Direction of Travel Location:**

RH turn from existing site access track onto proposed Cambushinnie Substation access track

Coordinates:

56.262611, -3.942528

Enabling Works Required:

N/A

Enabling Work Grade:

N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-91*Proposed site access track LH turn no. 1 (16-axle FT)***Direction of Travel Location:**

RH turn from existing site access track onto proposed Cambushinnie Substation access track

Coordinates:

56.256944, -3.958056

Enabling Works Required:


Carriageway widening required to inside and outside of turn


Enabling Work Grade:**High****Assessment Works Required:**

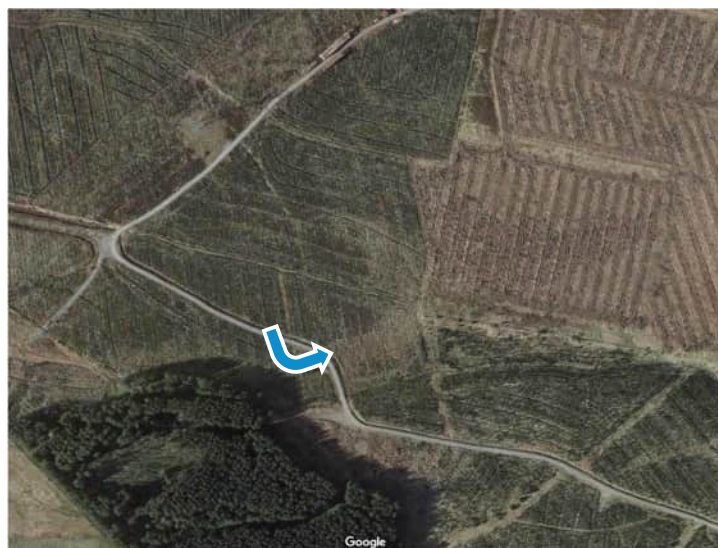
Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-92 <i>Cambushinnie Substation access gate</i>	
	
Direction of Travel Location: Northbound on proposed Cambushinnie Substation access track through access gate	Coordinates: 56.257222, -3.956667
Enabling Works Required: Offside gatepost and adjacent fence line to be demountable	Enabling Work Grade: Medium
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-93 <i>Substation site access road RH turn</i>	
	
Direction of Travel Location: RH turn on proposed Cambushinnie Substation site access road	Coordinates: 56.257500, -3.956389
Enabling Works Required: Carriageway widening works to inside of turn	Enabling Work Grade: High
Assessment Works Required: Route survey carried out	Assessment Work Grade: Complete

Ref. ALL-A242494-RS-94*Substation site access road LH turn***Direction of Travel Location:**

LH turn on proposed Cambushinnie Substation site access road

Coordinates:

56.256111, -3.954444

Enabling Works Required:

N/A

Enabling Work Grade:

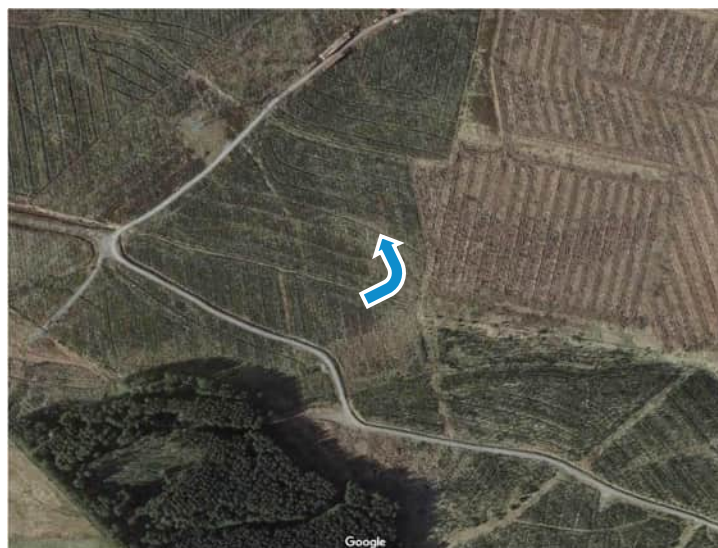
N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-95*Substation site access road/western plinth access road LH turn***Direction of Travel Location:**

LH turn from proposed Cambushinnie Substation site access road onto proposed western plinth access road

Coordinates:

56.256944, -3.953056

Enabling Works Required:

N/A

Enabling Work Grade:

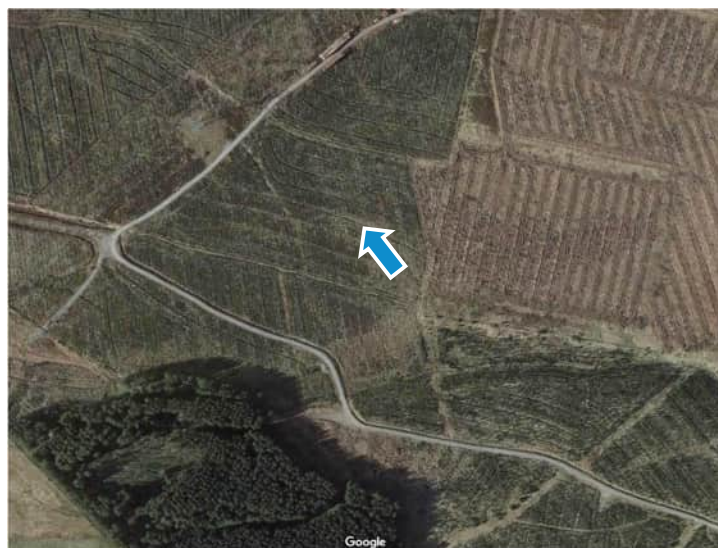
N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-96*Western plinth access road/plinth centreline***Direction of Travel Location:**

Northbound on proposed western plinth access road in-line
with western plinth centreline

Coordinates:

56.257222, -3.953333

Enabling Works Required:

Transformer to be offloaded from delivery vehicle using
hydraulic jacks and stools
Transformer to be rotated and skidded into position on plinth

Enabling Work Grade:

Medium

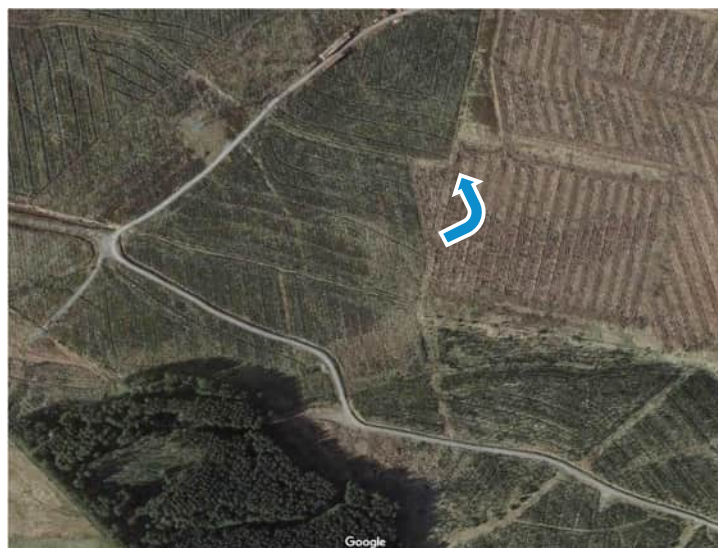
Medium

Assessment Works Required:

Route survey carried out

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-97*Substation site access road/eastern plinth access road LH turn***Direction of Travel Location:**

LH turn from proposed Cambushinnie Substation site access road onto proposed eastern plinth access road

Coordinates:

56.257500, -3.951389

Enabling Works Required:

N/A

Enabling Work Grade:

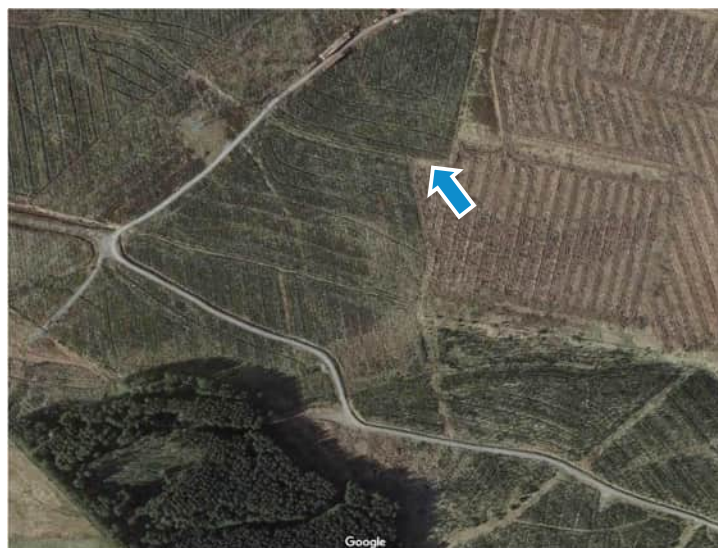
N/A

Assessment Works Required:

Route survey carried out - negotiable

Assessment Work Grade:

Complete

Ref. ALL-A242494-RS-98*Eastern plinth access road/plinth centreline***Direction of Travel Location:**

Northbound on proposed eastern plinth access road in-line
with eastern plinth centreline

Coordinates:

56.257778, -3.951944

Enabling Works Required:

Transformer to be offloaded from delivery vehicle using
hydraulic jacks and stools
Transformer to be rotated and skidded into position on plinth

Enabling Work Grade:

Medium

Medium

Assessment Works Required:

Route survey carried out

Assessment Work Grade:

Complete

HSEQ

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

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

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

Our safety performance is critical to the success of our business and our projects and therefore it's essential that we continuously identify, assess and act upon any areas that can be improved. Any areas

that are identified are reported, recorded, investigated, analysed and then lessons learnt published within safety bulletins and toolbox talks.

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



11. Conclusion

- 11.1. Allelys have been commissioned by SSEN to provide a feasibility survey for the transport of 2 in no. 261 te 400/132 kV Super Grid Transformers (SGT) from Grangemouth to Cambushinnie 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.
- 11.2. The nominated transport configurations for delivery of the transformers are a 24-axle Girder Frame Trailer (GFT) or 16-axle flat top trailer subject to structural assessments, which are both classified as Special Order due to a gross weight of 441.0 te and 312.4 te respectively. As the transport is classified as Special Order, in accordance with the Water Preferred Policy, Forth Ports (Grangemouth) has been considered as Port Of Delivery (POD) as it is the closest marine facility to site capable of dealing with this size of cargo.
- 11.3. The route is not currently considered feasible in terms of structural capacity for the 24-axle GFT, as Transport Scotland, BEAR (South East Scotland), Amey (North East Scotland) and Perth & Kinross Council (PKC) (acting as the Local Highway Authorities (LHA)) have advised that structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, M9 6-7 25 Carron, M9 10-11 5 Forth, A9 80 Auchinlay Rail, A9 90 Allan Water, A822/01 Millstone Burn, A822/03 River Allan and B8033/03 Bridge of Keir have failed their basic in-house checks. Therefore, further structural assessments are required to confirm whether the structures are capable of accommodating the vehicle. Structure no's M9 6-7 24 M9 Kelpies (Helix) Canal, A822/01 Millstone Burn and B8033/03 Bridge of Keir are thought to be suitable for overbridging, however, the remaining structures are unsuitable and therefore pose a high risk to delivery of the SGTs should the results of the assessments be negative.
- 11.4. Swept Path Assessment (SPA) of the A822/B8033 junction in Braco village has been carried out and has found that the junction is not negotiable for the 24-axle GFT due to the need for third-party land uptake and removal of mature trees/hedgerow when both turning left and performing a shunt manoeuvre continuing northbound on the A822 past the junction before turning the tractor units around and turning right onto the B8033 from the A822 southbound. SPA has also been carried out of the 24-axle GFT travelling southbound around an S-bend on the B8033 over structure no. B8033/03 Bridge of Keir and, again, the results show a need for the removal of mature trees in order to facilitate the vehicle. A third SPA has been carried out of the 24-axle GFT travelling southbound on the B8033 around a right-hand bend adjacent to the private property "Loaning View", which also shows a requirement for third-party land uptake and removal of mature trees/hedgerow. Therefore, it is deemed that the section of route through Braco village to the private access track is not negotiable for the 24-axle GFT.
- 11.5. To overcome the physical negotiability problems for the 24-axle GFT, it is proposed that the transformers are transhipped from this vehicle onto a 16-axle flat top trailer prior to arrival in Braco village. The northbound slip road at the A9/A822 junction in Greenloaning has been identified as a suitable transhipment location as there is sufficient working area within the slip road to undertake the trailer interchange operation. Temporary steel plating will be required on the offside verge of the slip road to accommodate a mobile crane required to undertake lifting operations. A full closure

of the slip road would be required with a diversion for all other road users for the duration of the trailer interchange. PKC have been contacted for comment on the use of the slip road and have advised that the operation would be subject to the relevant applications and would need to be carried out at night in order to reduce disruption to other road users although it is anticipated that the operation would take approximately two days so it would not be possible to satisfy this restriction. Temporary lighting and security measures would be required to cover the full working area for the duration of the operation.

- 11.6. The route from Grangemouth to the nominated trailer interchange location is considered negotiable for the 24-axle GFT with Police Escort, Temporary Traffic Regulation Orders (TTRO), street furniture removals and additional tractor unit(s) to cope with sections of steep gradient. TTROs can take 12-weeks plus to process and should be planned accordingly.
- 11.7. Once transhipped onto the 16-axle flat top trailer, the SGTs would be transported over the remainder of the route to site. SPA of the three junctions that were proven not to be negotiable for the 24-axle GFT has also been carried out considerate of the 16-axle flat top trailer.
- 11.8. The A822/B8033 junction in Braco is negotiable for the 16-axle flat top trailer with street furniture removals and temporary steel plating of sections of pavement and verge to facilitate vehicle overrun beyond the kerb.
- 11.9. The S-bend on the B8033 over the Bridge of Keir is also negotiable for the 16-axle flat top trailer, although minor carriageway widening works are required to both sides of the carriageway on exit from the bridge. Vegetation pruning is also required to both sides of the carriageway throughout the S-bend.
- 11.10. The RH bend on the B8033 at Loaning View is negotiable for the 16-axle flat top trailer with the removal of a mature tree to the inside of the turn. Overrun beyond the kerb is also required to both sides of the carriageway throughout the turn with minor carriageway widening works needed to facilitate.
- 11.11. The final RH turn from B8033 onto the private access road to site is not currently negotiable for the 16-axle flat top trailer due to the requirement for widening works to the inside of the turn including ground works to cut into and remove an earth bank.
- 11.12. Network Rail and PKC have been contacted regarding the structural capacity of structure no's A822/01 Millstone Burn, SCM4/B/21 A822 Main Road, A822/03 River Allan and B8033/03 Bridge Of Keir as to whether they are capable of accommodating the 16-axle flat top trailer. SCM4/B/21 A822 Main Road has been cleared by Network Rail, however, PKC have advised that all three of their structures need to be assessed before being deemed capable of accommodating the 16-axle flat top trailer. Structure no's A822/01 Millstone Burn and A822/03 River Allan are suitable for overbridging, should the results of further structural assessment be negative, however, structure no. B8033/03 Bridge of Keir is unsuitable and therefore poses a high risk to delivery of the SGTs.
- 11.13. A quotation to undertake the structural assessments for both the 24-axle girder frame trailer and 16-axle flat top trailer has been submitted and approved by SSEN and is ongoing separately.
- 11.14. Vegetation pruning to a height of 6 m would be required along the length of the route from the trailer interchange location to site in order to accommodate the 5.85 m running height of the 261 te SGT loaded onto 16-axle flat top trailer with the necessary permissions required.

- 11.15. The existing private site access track from the B8033 to Braco Substation is considered negotiable for the 24-axle GFT and the 16-axle flat top trailer with carriageway widening works required at one right-hand turn located at approximate coordinates 56.264694, -3.909056. Vegetation clearance and removal of a wooden fence is required to the inside of one left-hand turn located at approximate coordinates 56.265361, -3.906806. Additional tractor unit(s) would also be required in order to produce the necessary tractive and braking effort needed to cope with sections of steep gradient on the track. Minor resurfacing works would also be required to make the track negotiable for the vehicle. There are also two cattle grids and two culverts on the existing track that would need to be overbridged or overplated in order for them to accommodate the vehicle.
- 11.16. The proposed site access track from adjacent to Braco Substation to the site at Cambushinnie Substation has been reviewed and the left-hand turn on approach to the site access gate is to be widened to both sides of the carriageway in order to make it negotiable for the 16-axle flat top trailer, whereas it is negotiable for the 24-axle GFT. The right-hand turn through the site access gate en route to the SGT plinths is also to be widened to the inside of the turn along with the site access gate opening in order to accommodate both vehicles. Alternatively, the offside gatepost and sections of fencing adjacent could be made to be de-mountable to provide access. The remainder of the route on site to the SGT plinths is negotiable for both vehicles.
- 11.17. It is proposed that the SGTs be delivered in-line with the plinth centrelines before being offloaded from the vehicle using hydraulic jacks and stools as it is not physically possible for either vehicle to drive directly onto the plinth, plus if the bund walls were already to be in place, then conflict would be expected with the vehicles. It is possible for the 16-axle flat top trailer to travel in-line with both plinth centrelines, however, the overall length of the 24-axle GFT is such that the forward tractor unit is to be removed before moving the SGT in-line otherwise conflict is expected between the vehicle and auxiliary site equipment located to the north. Once offloaded from the delivery vehicle, the SGTs would be rotated and skidded into final position on their respective plinth.