

Lambs Hill Wind Farm

Initial Traffic Management Plan

19 October 2015

Client Name: Banks Renewables (Lambs Hill Wind Farm) Limited

Site Address: Inkerman House, St John's Road
Meadowfield, Durham, DH7 8XL

Author: Brian Farrell, Design Project Engineer

11292UKC-301815-001

Planning & Development | Ecology & Hydrology | Technical
Construction & Geotechnical | Asset Management | Due Diligence

natural power 

Document history

Author	Brian Farrell	21/08/2105
Checked	Euan Reilly	09/10/2015
Approved	David Wright	16/10/2015

Client Details

Contact	Mark Rowcroft
Client Name	Banks Renewables (Lambs Hill Wind Farm) Limited
Address	Inkerman House, St John's Road, Meadowfield, Durham, DH7 8XL

Issue	Date	Revision Details
A1	13/10/2015	First draft
B1	05/11/2015	Client review comments incorporated

NATURAL POWER CONSULTANTS LIMITED, THE NATURAL POWER CONSULTANTS LIMITED, NATURAL POWER SARL, NATURAL POWER CONSULTANTS (IRELAND) LIMITED, NATURAL POWER LLC, NATURAL POWER S.A, NATURAL POWER SERVICES LIMITED AND NATURAL POWER OPERATIONS LIMITED (collectively referred to as "NATURAL POWER") accept no responsibility or liability for any use which is made of this document other than by the Client for the purpose for which it was originally commissioned and prepared. The Client shall treat all information in the document as confidential. No representation is made regarding the completeness, methodology or current status of any material referred to in this document. All facts and figures are correct at time of print. All rights reserved. VENTOS® is a registered trademark of NATURAL POWER. Melogale™, WindCentre™, ControlCentre™, ForeSite™, vuWind™, WindManager™ and OceanPod™ are trademarks of NATURAL POWER.



Copyright © 2015 NATURAL POWER.

Local Office:

Ochil House, Springkerse Business Park,
Stirling, FK7 7XE
SCOTLAND, UK
Tel: +44 (0) 1786 542 300

Registered Office:

The Natural Power Consultants Limited
The Green House
Forrest Estate, Dalry,
Castle Douglas, Kirkcudbrightshire,
DG7 3XS

Reg No: SC177881
VAT No: GB 243 6926 48

Contents

1.	Introduction	1
2.	Context.....	2
	2.1. The Setting and the Project.....	2
	2.2. Policy and Legislation	2
	2.3. Planning Condition 13.....	3
3.	Administration of the TMP	5
4.	Construction Traffic	6
	4.1. AIL Vehicle and Convoy Details.....	6
	4.2. Estimation of Generated Traffic	6
	4.3. Proposed Traffic Routes	7
5.	Works Required to Routes	9
	5.1. Wider Trunk Road System	9
	5.2. Site Entrance Junctions	9
	5.3. Statutory Utility Services to be Protected or Diverted	10
6.	Traffic Management During Construction	12
	6.1. Nominated Contact	12
	6.2. Community Awareness	12
	6.3. Signage.....	12
	6.4. Traffic Route Restrictions.....	12
	6.5. Routes for Emergency Vehicles, Diverted Vehicles and Pedestrians	13
	6.6. Construction Vehicle Parking.....	13
	6.7. AIL Delivery Requirements	14
	6.8. Driving and Speed Restrictions.....	15
7.	Road and Structure Condition Surveys – Planning Condition 12 (DVI).....	16
	Appendix A.....	17
	Appendix B.....	18

1. Introduction

Natural Power has been appointed by Banks Renewables to discharge suspensive planning conditions so as to facilitate the pre-construction phase of the Project. It is intended that information provided in this TMP will address the relevant conditions assigned to the consented Project and also provide information sufficient to address the variations to the Project that are currently being determined.

The purpose of this document is to provide a Traffic Management Plan (TMP) to facilitate the safe access of general construction traffic and Abnormal Indivisible Load (AIL) deliveries to and from Lambs Hill Wind Farm ("the Project"). This document serves information sufficient to discharge Planning Conditions (PC) 13 of the Project.

Planning Condition 12 (PC12) relates to the provision of HGV and AIL delivery route information along with Detailed Visual Surveys (DVI) of the proposed routes. Although this report is not intended to address PC 12, Section 7 provides information in regard to this Planning Condition.

Consent for the Project was granted by Stockton-on-Tees Borough Council on 7th December 2011.

2. Context

2.1. The Setting and the Project

The Project is located on farm land immediately to the west of the village of Stillington, within the local government administrative area of Stockton-on-Tees Borough Council.

The consented Project comprises:

- 4 turbines up to 125 m (height to tip).
- A temporary laydown area and construction compound including hard standing.
- An anemometer mast.
- New and upgraded site tracks (approximately 4 km of access track).
- Off-site highway modifications in the form of road widening and temporary street furniture removal along the delivery route.
- Underground cabling.
- A control building/substation.
- Other associated infrastructure.

Two main access routes for construction vehicles are proposed, one from the north and one from the south as indicated on Drawing 11292_100_700 in Appendix A. The north site access route is from the A1 junction 60 via the A689, A177 and unclassified roads through Stillington village to the site entrances. The south site access route is from the A66 via the unclassified road through Redmarshall and Whitton, to Stillington village.

Abnormal Loads would be restricted to the northern access route only. HGV's would be restricted to either route. LGV's, such as cars and vans, would not have any restrictions to routes although they would be encouraged to use the two access routes.

As noted above, the Project consists of 4 wind turbines. The turbine selection is currently out for tender. This report assumes that the intended Turbine will be the Senvion MM100 with a rated capacity 2 MW each.

The Environmental Statement (ES) undertaken by Banks Developments, July 2010, estimates that the construction phase will be approximately 10 months in duration. The indicative programme is included in Appendix B. This programme will be revised and updated by the BoP Contractor as part of the construction phase planning.

According to the ES, construction working hours are proposed to be restricted to the following working hours, with no working on Sundays or Bank Holidays, these will be subject to the agreement of the Local Planning Authority (LPA):

- Monday to Friday: 7 am to 7 pm
- Saturday: 8 am to 1pm

2.2. Policy and Legislation

Traffic management is regulated by the following key pieces of legislation and associated Regulations:-

- The Town and Country Planning Act 1990 as amended which provides for deemed planning permission and associated planning conditions.
- Construction (Design & Management) Regulations 2015, which regulate the manner in which construction works take place, from a H&S perspective.
- The Road Traffic Act 1988.
- The Road Vehicles (Construction and Use) Regulations 1986, The Road Vehicles (Authorised Weight) Regulations 1998, The Road Vehicles (Authorisation of Special Types) General Order 2003

and Section 44 of the Road Traffic Act 1988, which together regulate the movement of AILs on the road network.

- DfT – Traffic Management Act 2004.
- Durham County Council – Local Transport Plan 3 – Transport Strategy.

2.3. Planning Condition 13

This TMP is prepared in response to and to fulfil the requirements of Planning Condition (PC) 13. The PC is shown as follows:

Prior to the commencement of the development hereby approved, a Construction Traffic Management Plan shall be submitted to and approved in writing by the Local planning Authority. The Construction Traffic Management Plan shall include but not be restricted to detailing the following:

- Site information
- Programming
- Traffic disruption, speed control, road works co-ordination
- Temporary widening, running surfaces, narrow lanes, visibility
- Internal access tracks
- All statutory utility services that may need protecting or diverting
- Temporary safety barriers and safety zones
- Routes for emergency vehicles, diverted vehicles, diverted pedestrians
- Abnormal Load Movements
- Vehicle recovery and incident management
- Temporary Traffic Regulation Order's, signing, lighting, vehicle waiting areas
- Detailed layout of the Traffic Management scheme
- Consultation
- Operational hours

Throughout the construction phase, the Construction Traffic Management Plan shall be implemented in accordance with the approved details, and any changes to the plan shall only be permitted by prior written consent from the Local Planning Authority.

Reason: In the interests of highway safety and free flow of traffic on the highway network in accordance with the requirements of Planning Policy Statement 22: Renewable Energy.

For clarity, the key requirements of PC 13 are listed below along with a cross-reference to the Section of this TMP that addresses that aspect.

Table 2.1: PC 13 Requirements

PC 13 Requirements	Relevant Section of TMP
Site information	Section 2.1
Indicative Construction Phase Programme	Section 2.1 and Appendix B
Traffic management measures	Section 4
Temporary widening, running surfaces, narrow lanes, visibility	Section 5
Internal Access Tracks	Section 2.1 and 5.2
All statutory utility services that may need protecting or diverting	Section 5.3

PC 13 Requirements	Relevant Section of TMP
Routes for emergency vehicles, diverted vehicles, diverted pedestrians	Section 6.5
Defined route for AIL	Section 4.3
Vehicle recovery and incident management	Section 6.7
Temporary Traffic Regulation Order's, signing, lighting, vehicle waiting areas	Section 5.2
Detailed layout of the Traffic Management scheme	Drawing 11292_100_700 in Appendix A
Off-site road work required	Section 5.1
Consultation	Sections 6.1 & 6.2
Operational Hours	Section 2.1
Road furniture and junction adjustment	Section 5.1
Signage – re AILs and site access point	Section 6.3
Access Strategy for general construction and AIL traffic	Section 4.3
On-site access	Section 5.2 and 6.6
Specific AIL configuration	Section 4.1

3. Administration of the TMP

This initial draft of the TMP is prepared by Natural Power on behalf of Banks Renewables, and is developed to a degree of detail to allow Planning Condition 13 to be discharged. However, it is a live document, and will require further development and updating by the BoP Contractor and Turbine Supplier prior to construction and also prior to turbine deliveries.

The following parties must be consulted in regard to further updates and amendments to the TMP:-

- Stockton-on-Tees Borough Council – Planning and Building Control,
- Durham County Council – Strategic Highways Services,
- DfT – Network Management Directorate,
- Local Parish Councils,
- Cleveland Police.

4. Construction Traffic

4.1. AIL Vehicle and Convoy Details

The final agreed turbine to be installed is currently being negotiated by a competitive tendering process. However, based on turbine suppliers specifications and similar, previous projects the turbines to be installed are likely to have the following key dimensions and weights:

- Hub height – 75 m (tower height 73 m).
- Blades – 50 m long, 8.5 tonnes.
- Tower – in three sections.
- Lower (widest) tower section – 17.85 m long, max 4.3 m dia., approx. 48 tonnes.
- Top (longest) tower section – 29.7 m long, max 2.955 m dia., approx. 39 tonnes.
- Nacelle – 10.40 m by 3.5 m by 4.0 m (L*W*H), 75 tonnes
- Hub/Rotor – 4 m dia by 4.2 m length in transit, 16.5 tonnes.

The turbine components will be transported to site using a number of different large vehicles specially designed to carry the wide, heavy or long loads. Following is an assessment of the number of such loads:

- Number of AIL vehicles required per turbine: 9 (3 blades, 3 tower sections, 1 nacelle, 1 rotor/hub and 1 anchor cage).
- Convoy size – between 2 to 3 vehicles per convoy is expected.
- Total number of AIL deliveries required: 36.
- Total number of convoys: 12 to 18.

4.2. Estimation of Generated Traffic

4.2.1. 2010 Environmental Statement

Chapter 2 of the Environmental Statement (ES) prepared by Banks Renewables in 2010 for the consented Project provided the following information:

'Access to the proposed development will be taken from two points, from the unnamed road located to the south of the application site running between Old Stillington and Stillington; and from the unnamed road between the A177 and Stillington, via a managed route through Stillington Forest Park. The accesses will be designed to allow the turbine delivery vehicles and other construction vehicles to leave the highway quickly and safely.

The construction of the wind farm will require a range of vehicles and construction equipment, the main elements of which will be:

- *Excavators;*
- *Bulldozers;*
- *Rigid body lorries;*
- *Articulated lorries;*
- *Low loaders;*
- *Blade trailers;*
- *Concrete trucks;*
- *Graders;*
- *Mobile canes; and*
- *4x4 for site personnel.*

The wind turbine components are very large and will be delivered to the site on articulated lorries with specially adapted trailers. Such large loads will be escorted on the public highway by the police and will be moved in accordance with their advice. It is estimated that the four turbines and cranes will require up to 71 long loads to be delivered to the site.'

The total number of vehicle journeys (i.e. two vehicle movements – arriving and departing) associated with construction of the wind farm is anticipated to be 7,200, comprising:

- 4,230 HGV/AIL journeys (with less than 5% comprising abnormal loads),
- 2,970 journeys of cars / LGVs, associated with construction personnel and miscellaneous deliveries to site

The ES does not differentiate between the HGV and AIL traffic numbers. For turbine transformers, components and crane deliveries 142 vehicle movements (AIL and HGV) are noted (i.e. some 71 in bound and 71 out-bound). The vehicles used to transport turbine components will constitute AIL vehicles only on the delivery phase of the journey, as the trailers will be retracted during the return leg. As noted in Section 4.1 AIL deliveries associated with turbines are expected to be 9 per turbine, resulting in 36 in-bound AIL deliveries for the site.

4.2.2. Summary of Key Traffic Information

Key traffic generation information was outlined in the 2010 ES and is estimated as follows:

- Overall Construction Period – 10 months.
- Average Construction Traffic – 36 vehicle movements (split LGV/HGV/AIL) per day (i.e. some 18 in-bound, 18 out-bound).
- Peak Construction month – month 4 – overlap of access tracks, turbine foundations and substation/control building.
- Peak Construction Traffic in that month – 69 vehicle movements [split LGV/HGV] per day (i.e. some 35 in-bound, 35 out-bound), including LGV and HGV.
- AIL Traffic duration – around 3 months (spread over months 6-9), 12 weeks.
- AIL Traffic – will depend on how turbines are delivered to port (i.e. single turbine at a time, all 4 turbines, etc). However, typically between 12 and 18 convoys in round terms – say 2 to 5 convoys per week, or between 1 and 2 per day during a turbine delivery. Each convoy may consist of between 2 and 3 AIL vehicles.
- During the operational phase of the proposed wind farm, only very low levels of traffic associated with operation and maintenance will be generated. These have been estimated as 70 vehicle movements per year, and such would have an insignificant effect on local traffic numbers.'

4.3. Proposed Traffic Routes

As noted in Section 2.1 and as indicated on Drawing 11292_100_700, the two main access routes for construction vehicles are:

- The north site access route from the A1 junction 60 via the A689, A177 and unclassified roads through Stillington village to the site entrances.
- The south site access route from the A66 via the unclassified road through Redmarshall and Whitton, to Stillington village.

4.3.1. Light Goods Vehicles

Stillington is accessed via several unclassified roads which predominantly come off the A689/A177 to the north and east and the A66 to the south. The A1 runs to the west of Stillington with junction 60 providing access to the A689 and junction 59 providing access to the A66. The average construction traffic flows needing to access the site are not high, and it is not anticipated that any controls will be placed on which roads LGVs may use to access the site. However, driver behaviour will be regulated, as described in Section 6.8.

4.3.2. Heavy Goods Vehicles

HGVs will be restricted to only use the north and south access routes and all other routes will be prohibited for HGVs. Desire lines for commercial traffic further afield from the site are naturally along A class roads, and HGVs will be encouraged to use these route, although there will be no specific regulation of that aspect. Driver behaviour will be regulated as described in Section 6.8.

4.3.3. Abnormal Indivisible Loads

AIL's will be restricted to the north site access route only.

Detailed assessments and swept path analysis has been undertaken on the proposed AIL route to identify any road modifications that may be required. The results of this are discussed further in Section 5. Additionally a dry run of the proposed AIL route will be undertaken following implementation of the required modifications and ahead of any turbine deliveries in accordance with Planning Condition 14.

5. Works Required to Routes

The following scope of works required to ensure adequate AIL access is based on work carried out for the applicant as follows:

- Natural Power, "Lambs Hill Wind Farm – Specific Route Access Assessment", August 2015.

It is noted that the final scoping and design of these should be based on dry runs using the length and width of components that will actually be delivered.

5.1. Wider Trunk Road System

The following works have been identified as required to allow transit from the A1 to the site entrances. The general locations of these points are shown on drawings 11292_200_001 – 005.

Table 5.1: Street Works to Wider Road System

Location Reference	Figure	Location	Works Required
01	3	Sands Hall Roundabout on A689	Roundabout island furniture relocation/temporary removal
02	3	Travelodge Hotel Sedgefield Roundabout (A689 to A177)	Roundabout island furniture relocation/temporary removal
03	4	Staggered Junction on A177 at Grindon accessing unclassified road to Stillington	Road widening required, Road furniture (signage) to be relocated/temporarily removed.
04	4	90° right hand bend on unclassified road to Stillington Village	Hedge trimming.
05	5	Entrance to Stillington Village onto Morrison Street.	Removal of trees, shrubs, signage, street furniture. Road widening, and hedge trimming.

Source: Natural Power, Lambs Hill Wind Farm - Specific Route Assessment, August 2015

These works require to be fully scoped, designed and constructed, prior to turbine deliveries.

5.2. Site Entrance Junctions

To provide access to the site two new formal access junctions would be created. The South Site Access would be the main site access and provide access to Turbines 1, 2 and 3 as well as the Control Building/Substation and Temporary Site Compound. The East Site Access would provide access to Turbine 4.

The proposed site access junctions are shown on drawings 11292_100_100 and 11292_100_101 in Appendix A.

A 5m bound surface would be formed over the initial junction before going to the unbound wind farm access track. A temporary oversail area would be formed to enable abnormal load deliveries. On completion of the wind farm construction, this would be removed, and the junction brought down to a standard junction size as indicated in the drawings.

The junctions would be fenced and gated both during and post construction.

Both access junctions would be new junctions off of currently un-accessed points in the road.

The South Site Access junction is located around 80m east of an existing field access, which is almost immediately on the exit/entry of a blind bend. Due to the poor visibility of this existing field access, the South Site Access was moved east of the existing access to a point that achieved the largest visibility splay for that section of road. A visibility splay of 100m was achieved which corresponds to a 65km/hr (40mph) speed limit.

Although the speed limit for the section of road is classified as 60mph, due to the geometry (i.e. existing a series of tight bends to the west and Stillington village to the east) it is unlikely that vehicles would be travelling safely at 60mph. However, it is proposed that a temporary speed restriction of 40mph is imposed throughout the construction stage of the wind farm.

The East Site Access junction would be able to achieve a 215m visibility splay required for a 100km/hr (60mph) road speed.

5.3. Statutory Utility Services to be Protected or Diverted

Utility services searches have been undertaken to identify services that may need to be protected or diverted as part of the works. Service information and plans by utility providers is only indicative and its accuracy should not be relied upon for detailed design and construction.

For each of the areas identified as requiring modifications works the following services were identified:

Location Reference	Location	Works Required and Utility Services
01	Sands Hall Roundabout on A689	Minor street works involving the temporary removal and subsequent reinstatement of a lighting column and bollards on completion of AIL delivery. No road widening or excavation works anticipated. Local Authority will undertake design and construction works.
02	Travelodge Hotel Sedgfield Roundabout (A689 to A177)	Minor street works involving the temporary removal and subsequent reinstatement of a lighting column and bollards on completion of AIL delivery. No road widening or excavation works anticipated. Local Authority will undertake design and construction works.
03	Staggered Junction on A177 at Grindon accessing unclassified road to Stillington	Road widening required along with minor road furniture to be temporarily removed/replaced. Northern Gas Networks below ground utilities are present close to the area but, based on the utility information, should not be affected by the works.
04	90° right hand bend on unclassified road to Stillington Village	Hedge trimming – should not impact on services.
05	Entrance to Stillington Village onto Morrison Street.	Road widening and the removal of trees, shrubs, signage, street furniture. Above and below ground telecommunication (BT Openreach) utilities. Northern Gas Networks below ground utilities.
East Site Access Junction	Site access off of unclassified road to Stillington Village	New access junction to be formed. Below ground telecommunication (BT Openreach) utilities. Northern Gas Networks below ground utilities are present but, based on the utility information, these would appear to be on the opposite side of the road from the new junction and therefore, should not be impacted.

Location Reference	Location	Works Required and Utility Services
South Site Access Junction	Site access off of unclassified road between Stillington and Old Stillington	New access junction to be formed. Below ground telecommunication (BT Openreach) utilities. Northumbrian Water below ground utilities are present but, based on the utility information, these would appear to be on the opposite side of the road from the new junction and therefore, should not be impacted.

6. Traffic Management During Construction

6.1. Nominated Contact

A named person or persons shall be designated by Banks Renewables to act as the key contact on traffic matters for the duration of the works. That person shall have daily contact with both the BoP and Turbine Supply contractors, as well as the key stakeholders (Stockton-on-Tees Council, Police, Community Council). They shall attend all Community Council liaison meetings regarding the wind farm, and ensure that this TMP is complied with throughout the construction period. It is suggested that the Principal Designer under the CDM Regulations may be most appropriate to carry out this function.

6.2. Community Awareness

Prior to the commencement of construction, and also prior to the transportation of the abnormal loads to site, the local residents shall be notified of the deliveries by a suitable means of communication to ensure disruption is kept to a minimum. This shall be led through the Lambs Hill wind farm Liaison Committee and would typically comprise:

- Advertising in a local and a regional newspaper (e.g. Gazette Live and The Northern Echo) and on local radio for two weeks leading up to start of construction, from two weeks leading up to start of AIL movements, and for each week during AIL movements.
- Information to be provided to Department for Transport weekly for upload to the Traffic England web site.
- Information to be provided to BBC Radio Tees weekly for travel news.
- Up to date notices to be maintained in the Stillington Post Office, library and two local stores.
- Information to be provided to Stockton-on-Tees Council weekly for upload to their web site.
- Information to be provided at regular intervals (to be agreed) to the Parish Councils.

6.3. Signage

Any signage required on the public highway will be erected and positioned in accordance with the requirements of Chapter 8 of the Traffic Signs Manual, and Safety at Street Works and Road Works - A Code of Practice, and in consultation with the relevant Highway Authority.

Any permanent signs and street furniture which require to be relocated to allow AIL loads to pass shall be identified in consultation with the Highway Authority and from the dry run. Where possible and agreed with the Highway Authority, signs requiring such relocation shall be permanently shifted onto new permanent mountings.

Where signs are required to remain at their present location in normal use, they shall be provided for the duration of the works with temporary mountings designed to facilitate rapid removal. These signs shall be taken down immediately in advance of the passage of abnormal loads and re-erected immediately after the load has passed. This will be undertaken by operatives travelling in the load escort vehicles.

Temporary signing shall be provided in consultation with the Highway Authority to warn of the hazards associated with the construction works.

It is not anticipated that any temporary safety barriers will be required.

6.4. Traffic Route Restrictions

6.4.1. Construction Traffic Routing

The measures to regulate construction traffic routing are given above in Section 4.3. In summary these comprise:-

- **Light Goods Vehicles** – No restriction

- **Heavy Goods Vehicles** – Restricted to the designated north and south access route.
- **Abnormal Indivisible Loads** – Restricted to use only the designated north access route.

6.4.2. Parking Restrictions

Special arrangements will be required for AIL movement along the A177 and Unclassified roads which lead to the site entrances, where some 25 to 30 residential and commercial properties front the road. The majority of these properties have off-street parking, but some do not. The road over this length is some 7.5 m (approx.) wide and if cars are parked, the available width reduces to some 3.0 m to 3.5 m wide, and with no room for oversailing loads outside the wheel track.

Although there do not appear to be any parking restrictions through the main road of Stillington village (Morrison Street and South Street), parking on the main road generally does not appear to occur. At the west end of South Street there is a formal parking area on the north side of the road directly in front of the properties fronting South Street. Swept path analysis indicates that there would be no oversail onto this parking area and the resultant need for parking restrictions.

It is not anticipated any parking restrictions will be required for normal LGV and HGV movements.

Although it is considered unlikely that parking restrictions would be required for Morrison Street and South Street, it is proposed that, for AIL deliveries, temporary parking restrictions would be put in place over this length. This is to ensure infrequent or ad-hoc parking does not occur during an AIL delivery with associated impacts on other road users. Any parking restrictions would be removed immediately following passage of the AIL delivery. These arrangements will be agreed in conjunction with Stockton-on-Tees Council, the Police, and will require early advance notice and consultation with each resident along this road length. Measures shall be selected as follows:-

- Informal discussions and agreements with each householder, and from information gained, agree windows for deliveries that suit when vehicles can be parked elsewhere (e.g. during holiday periods).
- Agree with Stockton-on-Tees Council that specific houses (particularly those with dedicated Disabled parking spaces on the road) can park partially on the footway, and provide temporary ramping along the gutter to suit.
- If informal arrangements are not deemed sufficiently robust, agree temporary parking restrictions with Stockton-on-Tees Council along this reach.

6.5. Routes for Emergency Vehicles, Diverted Vehicles and Pedestrians

It is not anticipated that there will be any road closures required during the lifetime of this project. During the delivery of AIL's there may be instances where traffic will need to be managed as the AIL convoy traverses particular pinch points and the procedures for this are detailed in Section 6.7 below.

As such, emergency vehicles will be able to utilise the existing road infrastructure as is currently the case. Similarly, there should be no requirement for other road users to be diverted via other routes.

All vehicles movements will be restricted to the existing carriageway and should not infringe on pavements and pedestrian access. There is no existing formal pedestrian access to either site entrance and therefore, it is not anticipated there will be any measurable pedestrian traffic at these locations. However, appropriate construction site signage will be provided warning pedestrians and the general public to the presence of construction traffic.

6.6. Construction Vehicle Parking

The site compound, located close to the main site access entrance will provide a parking area for cars and LGVs. This shall be used by all construction worker vehicles as well as all visitors, unless vehicles are capable of 4 wheel drive. The provision of on-site parking in designated areas (e.g. turbine hardstands) will be the responsibility of the BoP Contractor to implement and manage to suit their construction methods.

Under no circumstances shall any vehicles associated with the construction of the wind farm (i.e. construction worker vehicles, deliveries, plant, etc) be allowed to park on the existing road infrastructure, verges and lay-by's,

Wheel cleaning facilities shall be established and maintained immediately before vehicles coming from site would reach the public road. All vehicles from site carrying mud on their tyres shall be required to use the wheel wash.

6.7. AIL Delivery Requirements

Permits

The hauliers will be contractually responsible for applying for the necessary abnormal load BE16 permits and ensuring that all such deliveries are undertaken in accordance with statutory requirements. These permits will apply to the entire abnormal load delivery route to the point of entry to the site. The hauliers will ensure that no abnormal loads are allowed to be transported unless the required permits are in place.

Escorts

Where necessary under statutory regulations, abnormal deliveries shall be escorted by service vehicles provided by the transport haulier. Utilising the services of an escort aids in advance warning to other road users of the approaching load and allows traffic to be temporarily held at passing places to allow the AIL convoy to pass. Where escorts are required, there are typically two service vehicles per convoy. If required by the local police the convoys will also have a police escort.

Advance Arrangements

Each transport haulier will be responsible for agreeing a final delivery schedule with the relevant authorities with regards to the number of deliveries per convoy and the number of those convoys travelling to site per day. It is envisaged that an optimum number of abnormal loads per convoy will be implemented such that it will reduce the overall number of convoys without significantly impacting on local traffic flows.

Once the trailer has delivered its load to site, its length can then be reduced to a standard HGV size. When compressed, these HGV vehicles shall be able to utilise the local trunk network.

Number of loads/fleets

It is anticipated that there may be between 12 and 18 AIL convoys to arrive at site over the three month turbine delivery period, depending on how many loads are travelling in each fleet (assuming here between two and three).

This translates to between 1 and 2 fleets per week. Some days this might mean two fleets per day (e.g. one in the morning, and one in the mid-afternoon). Other days there may be only one fleet on the day.

Maximum vehicle dimensions

The maximum vehicle dimensions will be confirmed by the nominated haulier prior to planning for the AIL deliveries. The present dimension assumptions are:

- Blade carrier – Vehicle length of 45. m, 3 axle prime mover, 4 rear axles, rear overhang 5 m, vehicle width 2.5 m, side overhang 0.9 m one side, height 4.6 m.
- Tower carrier, clamp trailer - Vehicle length of 36 m, 4 axle prime mover, 5 rear axles, rear overhang 0.0 m, side overhang 0.1 m each side, height 4.8 m.
- Nacelle carrier - Vehicle length of 32 m, 4 axle prime mover, 4 rear axles and 4 front axles, rear overhang 0.0 m, side overhang 0.5 m each side, height 4.5 m.

Maximum loading

The maximum vehicle and axle loadings will be confirmed by the nominated haulier prior to planning for the AIL deliveries. The present assumptions are:

- 13t maximum axle load.

Timing of Deliveries

AIL deliveries shall be arranged so as to have no more than one convoy passing along the nominated AIL route in the morning, and no more than one in the afternoon. It is good practice to avoid peak times, and therefore the convoy timing shall be such as to pass through Stillington only between the following times:

- 0930 to 1200.
- 1345 to 1545.

LGV and HGV traffic is not restricted as to times of day.

There are no particular seasonal constraints on construction traffic. The haulier and Police will review the safety of AIL convoys during expected extreme weather (snow, rainfall, flood conditions).

Contingency planning

The hauliers shall be responsible for preparing their own contingency plan for use in the event that unforeseen circumstances arise during the course of the abnormal load deliveries. Their contingency plans will further elaborate on issues such as road blockages and breakdowns.

The contingency plans will take account of the results from any necessary trial runs conducted.

Emergency Procedure

The hauliers shall be responsible for developing their own breakdown/emergency procedures that will be implemented ahead of their abnormal deliveries. It is anticipated that the procedure will follow a similar structure to that outlined below.

- The situation shall be assessed to ascertain the risks involved and to establish the necessary action required to resolve the situation.
- Where possible the vehicle shall be moved off the road, or cleared to the nearest suitable location to allow any emergency vehicles to pass.
- The vehicle's emergency flashing lights will be activated and a reflective emergency triangle placed behind the vehicle to warn other drivers of the potential hazards associated with the breakdown/emergency situation.
- The vehicle will remain immobile until the incident has cleared and the driver has been given the go ahead to continue from either the police or the haulier Site Manager.

Reporting of Incidents

The hauliers will typically have an incident reporting hierarchy in place which everyone involved in the transportation will be aware of. The reporting of incidents will be escalated externally to the relevant parties, such as the police, if deemed necessary by the hauliers.

The reporting arrangements will require to be linked in with the Turbine Supplier's own H&S arrangements.

6.8. Driving and Speed Restrictions

All vehicles (cars, LGVs, HGVS and AILs) shall be driven in a safe and defensive driving manner at all times, within speed limits. A zero tolerance policy shall be adopted by all contractors, such that any infringement results in that person not returning to site.

All cars and drivers of site operatives vehicles used for commuting to and from the site must be road-worthy and fully legally compliant.

All commercial vehicles and drivers must be road-worthy and fully legally compliant.

An advisory speed limit of 10 mph will be maintained that all site related drivers must comply with.

7. Road and Structure Condition Surveys – Planning Condition 12 (DVI)

In addition to Planning Condition 13, Planning Condition 12 relates to construction stage traffic. The requirements of Planning Condition 12 are as follows:

Unless otherwise agreed in writing by the Local Planning Authority, no development hereby approved shall commence unless the developer has undertaken the following steps and not less than one month has expired from their completion:

- Submission to the Local Planning Authority of a plan of the routes within the administrative boundary of Stockton on Tees to be used by both Heavy Goods Vehicles and Abnormal Load Vehicles associated with the transportation of goods to site required as part of this development;
- Submission to the Local Planning Authority in writing or other agreed form of the results of carriageway and footways inspections using Detailed Visual Survey (DVI) survey techniques which will enable the processing of the data through the Local Highway Authorities accredited UKPMS system. All work to be undertaken by accredited inspectors in agreement with the Local Planning Authority; and
- A joint visual inspection with the Local Authority to monitor and assess the condition of the highways and associated structures on the selected route of construction traffic.

Once agreed, all Heavy Goods Vehicles and Abnormal Load Vehicles shall use only the agreed routes, unless otherwise agreed in writing by the Council.

Development hereby approved shall not commence until the developer has agreed a scheme in writing with the Local Planning Authority which details how any damage to the highway or associated structures caused by the traffic associated with the development shall be repaired, made good or mitigated at the applicant's expense. The approved details shall specify the time period within repair works shall be undertaken.

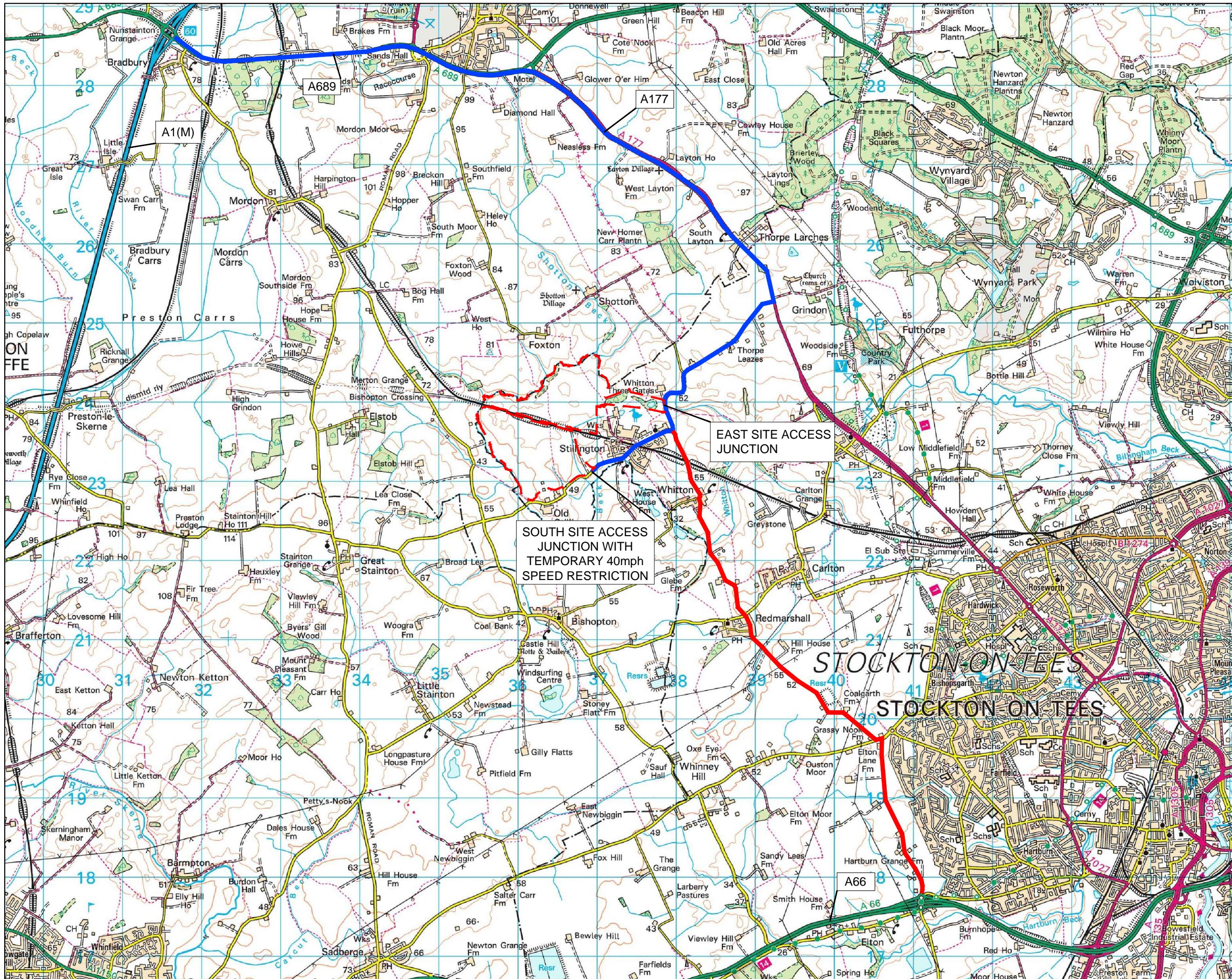
The development hereby approved shall not be brought into operation until such time as the developer has submitted to the Local Planning Authority in writing, or other agreed form, from prior approval, the results of carriageway and footways inspections undertaken following completion of the construction of the development. These inspections shall be undertaken using Detailed Visual Survey (DVI) survey techniques which will enable the processing of the data through the Local Highway Authorities accredited UKPMS system. All inspection work shall be undertaken by accredited inspectors in agreement with the Local planning Authority. Any works to the carriage way or footpaths identified by the submitted details as being required shall be undertaken in accordance with the approved scheme at the applicant's expense.

Reason: In order to ensure the impacts of transport movements associated with the construction phase of the development are adequately mitigated where necessary in accordance with the requirements of Planning Policy Statement 22: Renewable Energy.

Although not specifically addressed in this report, the requirements of Planning Condition 12 shall be adhered to and the requested information and written approvals shall be provided to the Council.

Appendix A

1. Traffic Management Dwg No: 11292_100_700.
2. Abnormal Load Pinch Points – Dwg No's: 11292_200_001 to 005.
3. Site Access Junctions – Dwg No's 11292_100_100 to 101.



Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673.

- Key:**
- Site Boundary
 - Vehicle Delivery Route (Northern) HGV and All
 - Vehicle Delivery Route (Southern) HGV

EAST SITE ACCESS JUNCTION

SOUTH SITE ACCESS JUNCTION WITH TEMPORARY 40mph SPEED RESTRICTION

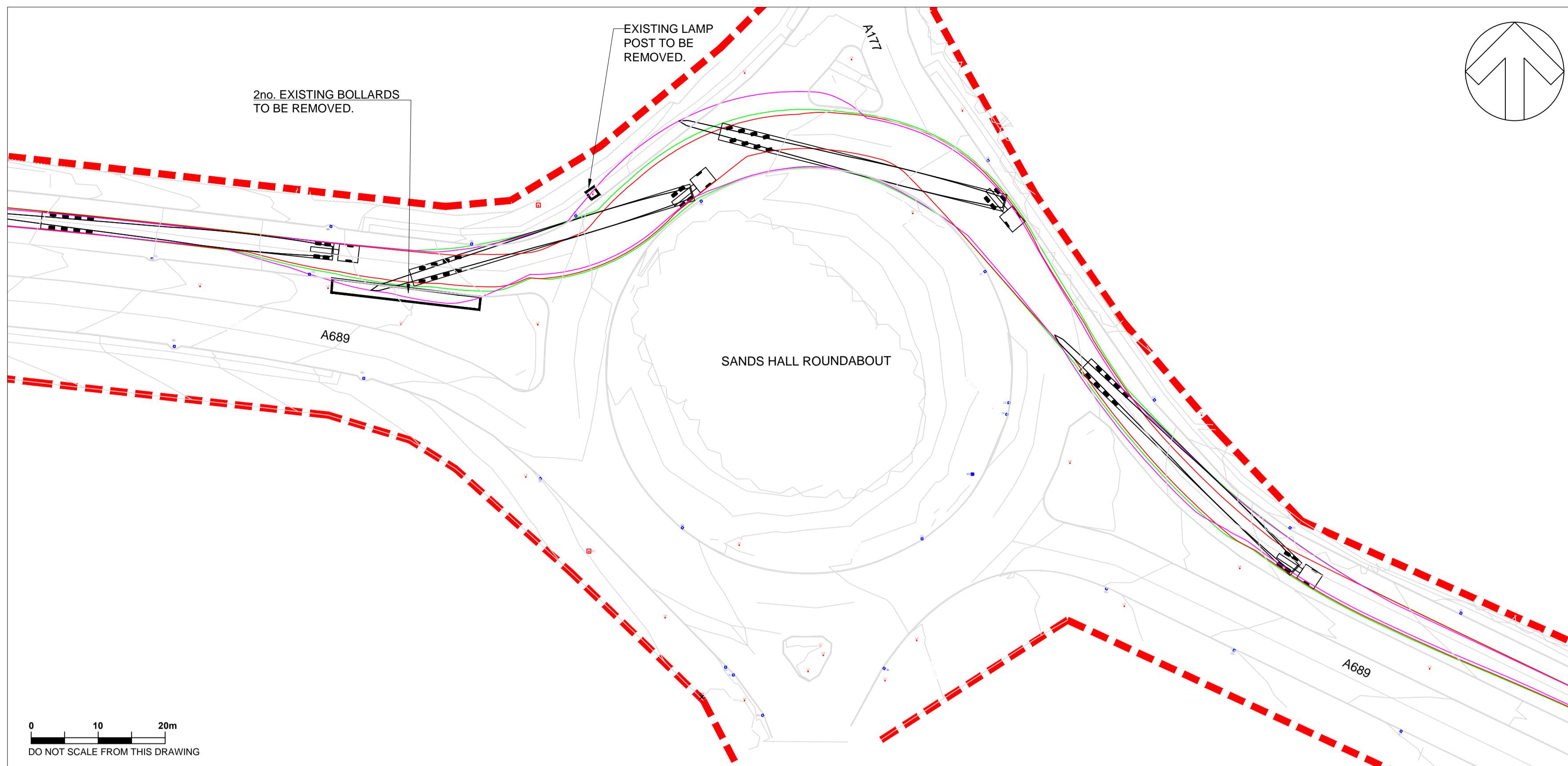
STOCKTON-ON-TEES
STOCKTON-ON-TEES

Rev	Description	By/Ch	Date
A	Initial drawing issue	YH/ER	30-09-15

Natural Power Consultants Ltd.
The Green House, Forrest Estate, Dalry,
Castle Douglas, DG7 3XS, UK
Tel: +44(0)1644 430 008
Fax: +44(0)1845 299 1236
E-mail: sayhello@naturalpower.com
www.naturalpower.com

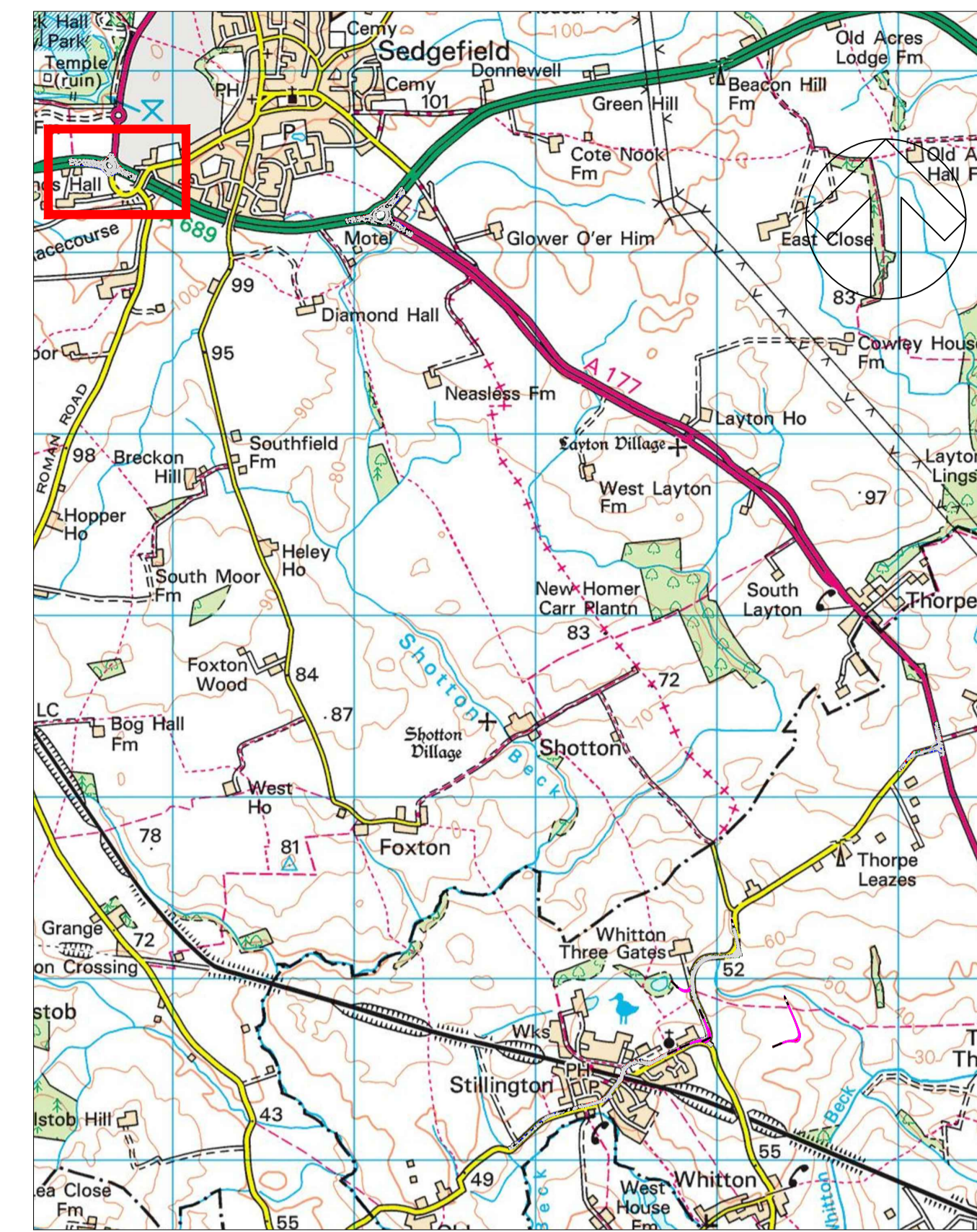


IFS Doc No. : XXXXXX	IFS Activity: XXXX.XXXXX	
Drawn: YH	Checked: ER	Approved: DRW
Scale: 1:50,000 @ A1	Date: 30-09-2015	
Client: Banks Renewables		
Status: FOR PLANNING		
Project: Lams Hill Wind Farm		
Drawing Title: Traffic Management Plan		
Drawing No. 11292_100_700	Revision A	



PINCH POINT 02 - BLADE TRANSPORT (MANUAL STEERING)

Scale 1:500



PINCH POINT 02 - LOCATION PLAN

NTS

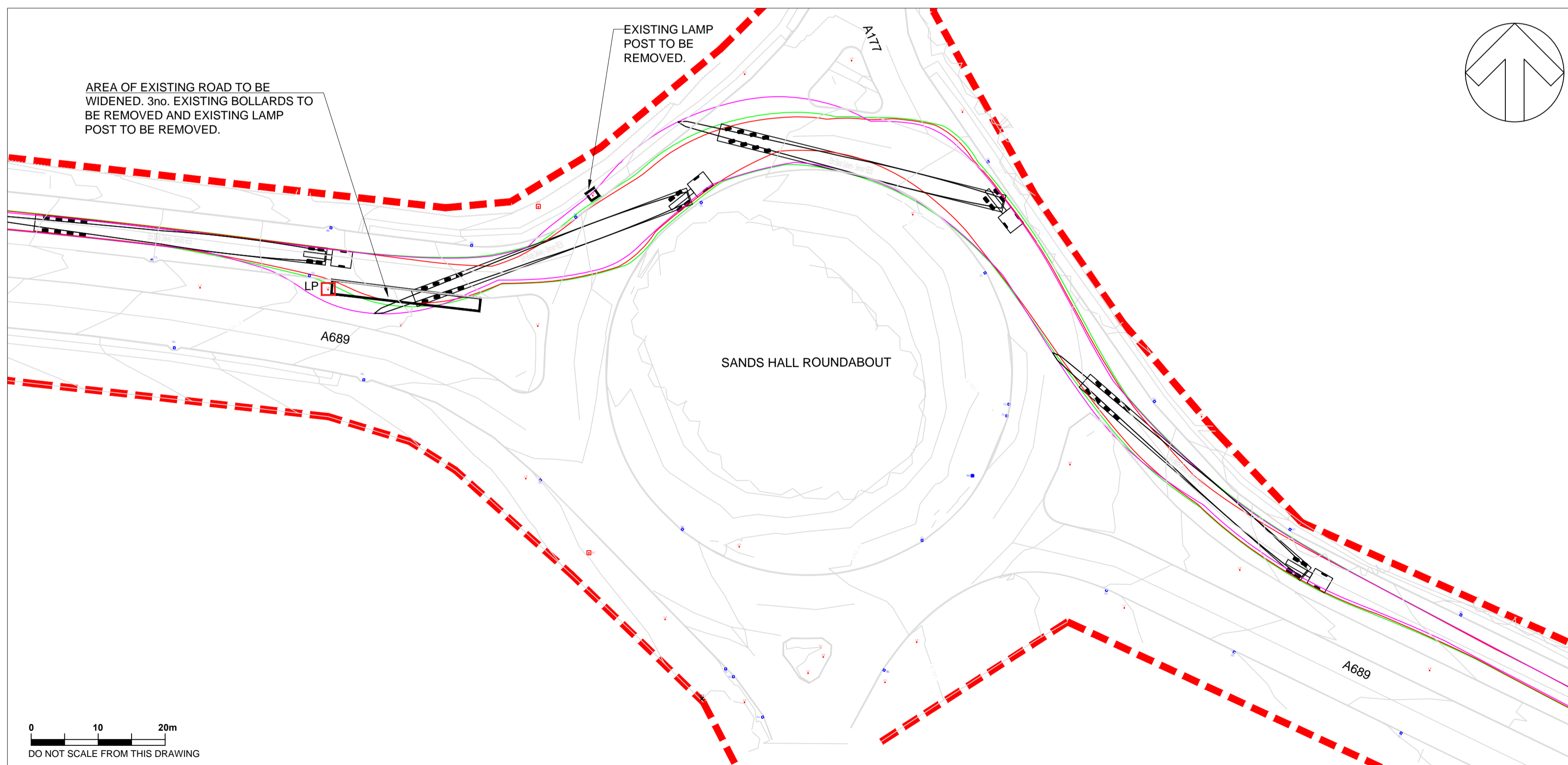
Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673 and 100017630.

NOTES:

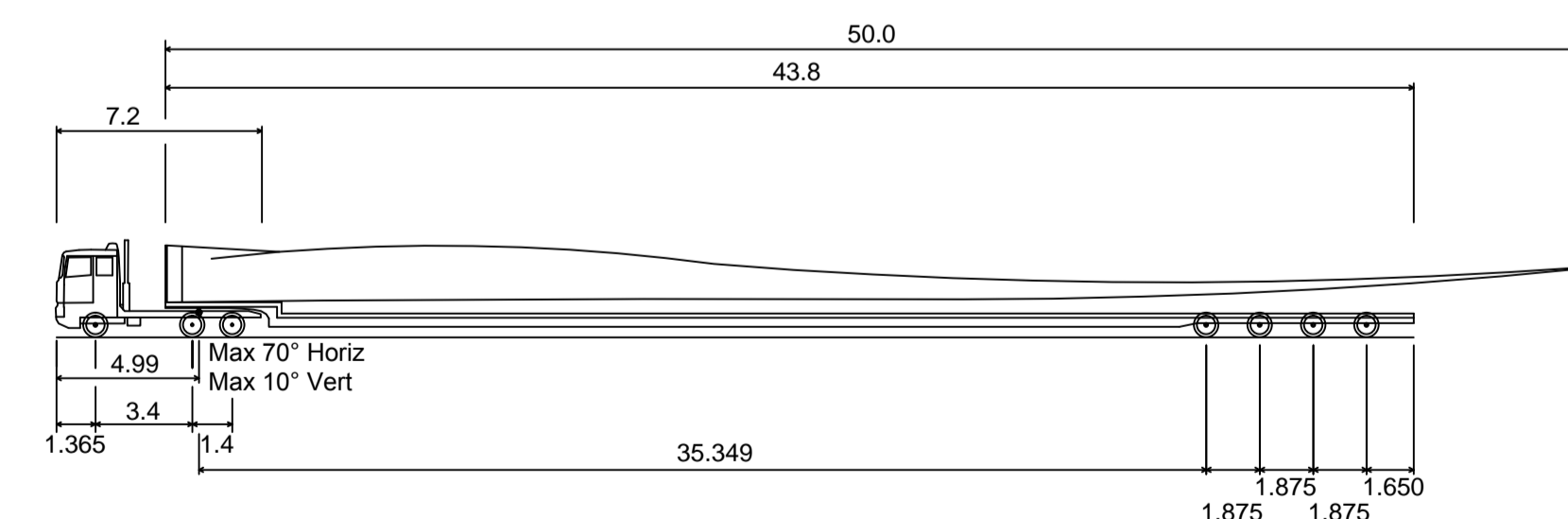
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (AOD).

- SWEEP LINE OF WHEELS/CHASSIS
- SWEEP LINE OF LOAD
- SWEEP LINE OF BODY



PINCH POINT 02 - BLADE TRANSPORT (AUTOMATIC STEERING)

Scale 1:500



50m Blade Delivery - Servion RE55	
Overall Length	47.614m
Overall Width	2.550m
Overall Body Height	3.404m
Min Body Ground Clearance	0.328m
Track Width	2.478m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	7.000m

TURBINE TRANSPORT VEHICLE

A	Initial drawing issue	YH/ER	08-10-15
---	-----------------------	-------	----------

Rev	Description	By/Ch	Date
	Natural Power Consultants Ltd. The Green House, Forrest Estate, Dalry, Castle Douglas, DG7 3XS, UK Tel: +44(0)1644 430 008 Fax: +44(0)845 299 1236 E-mail: sayhello@naturalpower.com www.naturalpower.com		



IFS Doc No. : XXXXXXX	IFS Activity: XXXX.XXXXX
-----------------------	--------------------------

Drawn: YH	Checked: ER	Approved: DRW
-----------	-------------	---------------

Scale: 1:500 @ A1	Date: 08-10-2015
-------------------	------------------

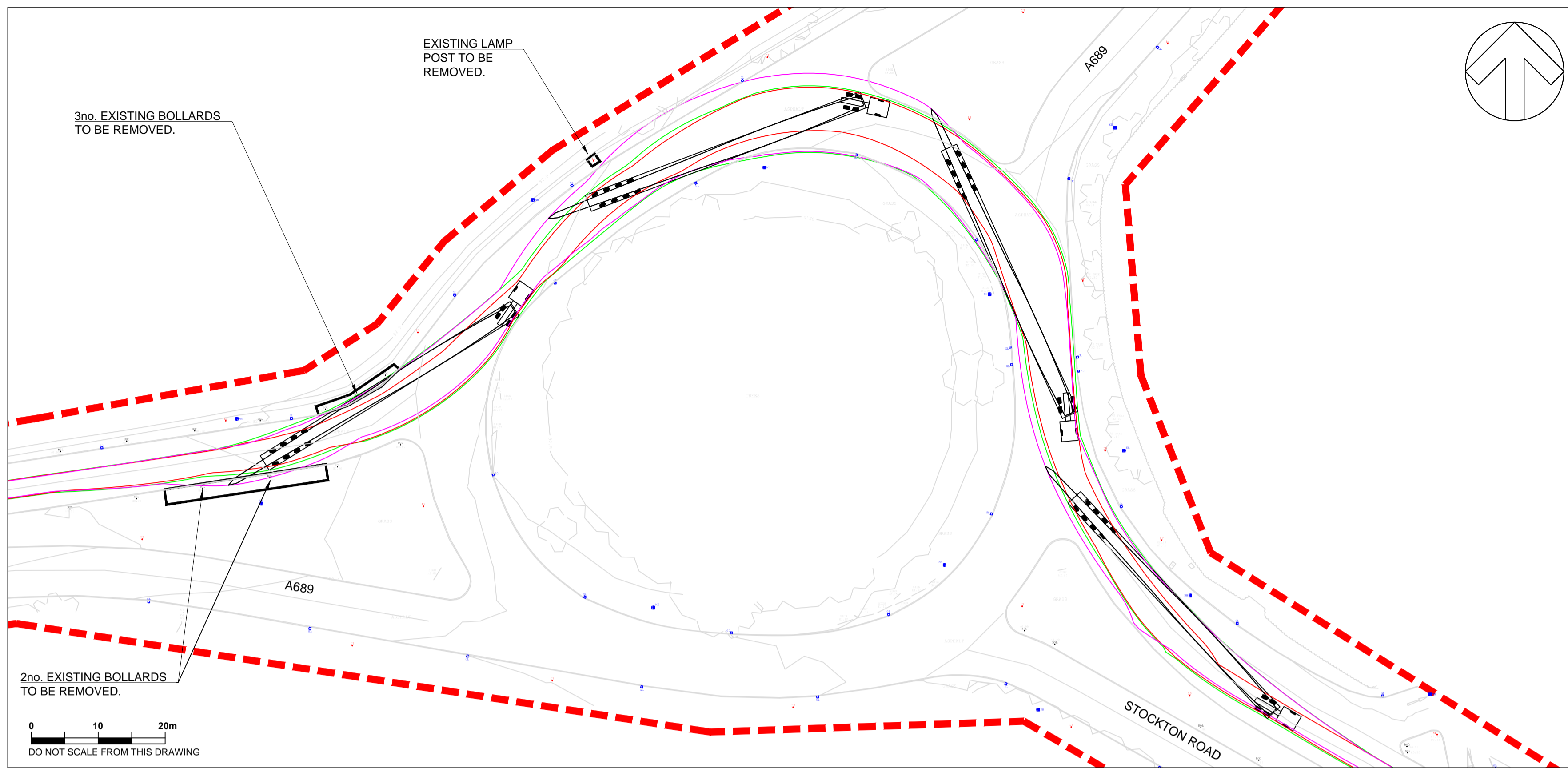
Client: Banks Renewables

Status: FOR COMMENT

Project: Lambshill Wind Farm

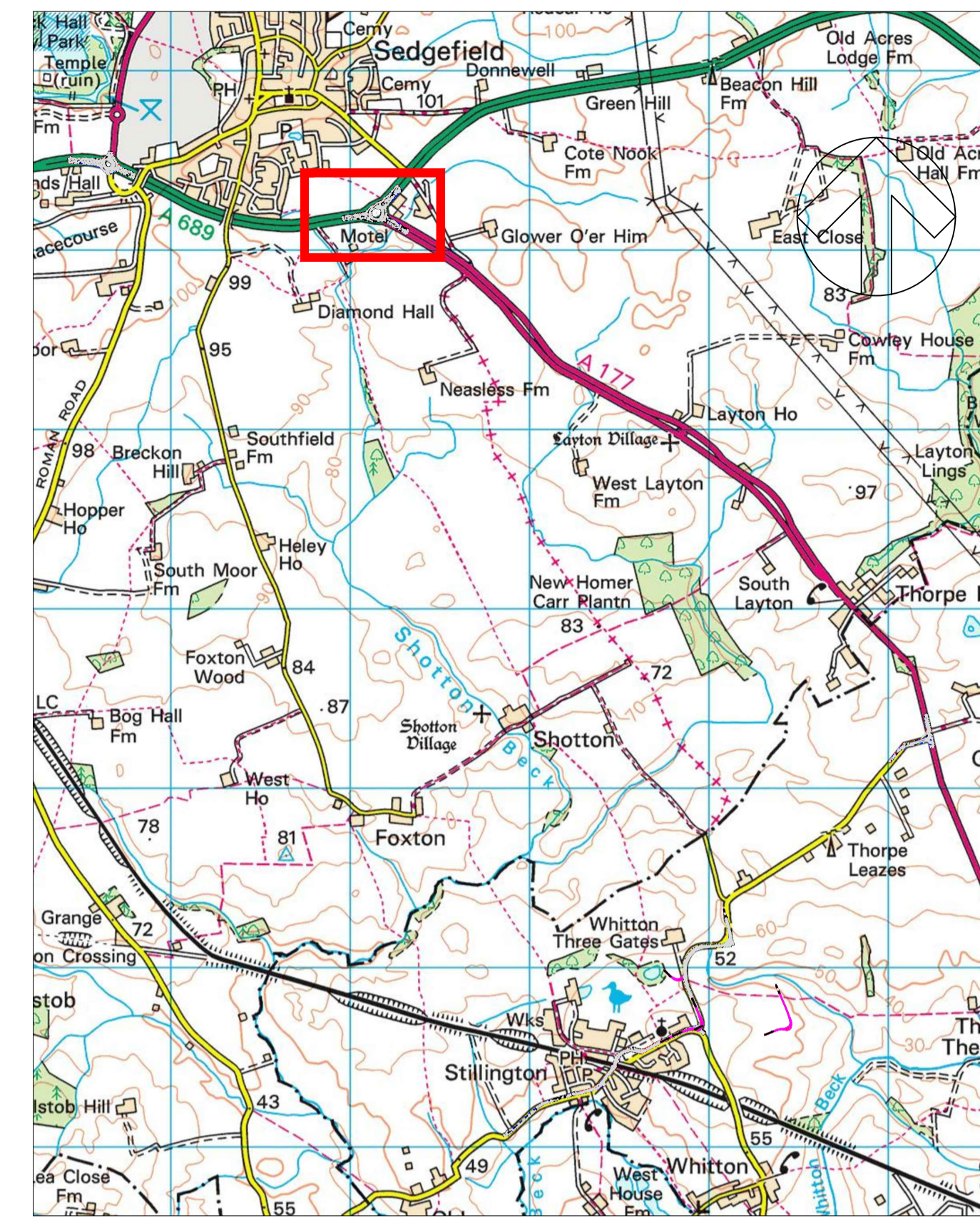
Drawing Title: Abnormal Load Pinch Point 02 SPA

Drawing No. 11292_200_001	Revision A
---------------------------	------------



PINCH POINT 03 - BLADE TRANSPORT (MANUEL STEERING)

Scale 1:500



PINCH POINT 03 - LOCATION PLAN

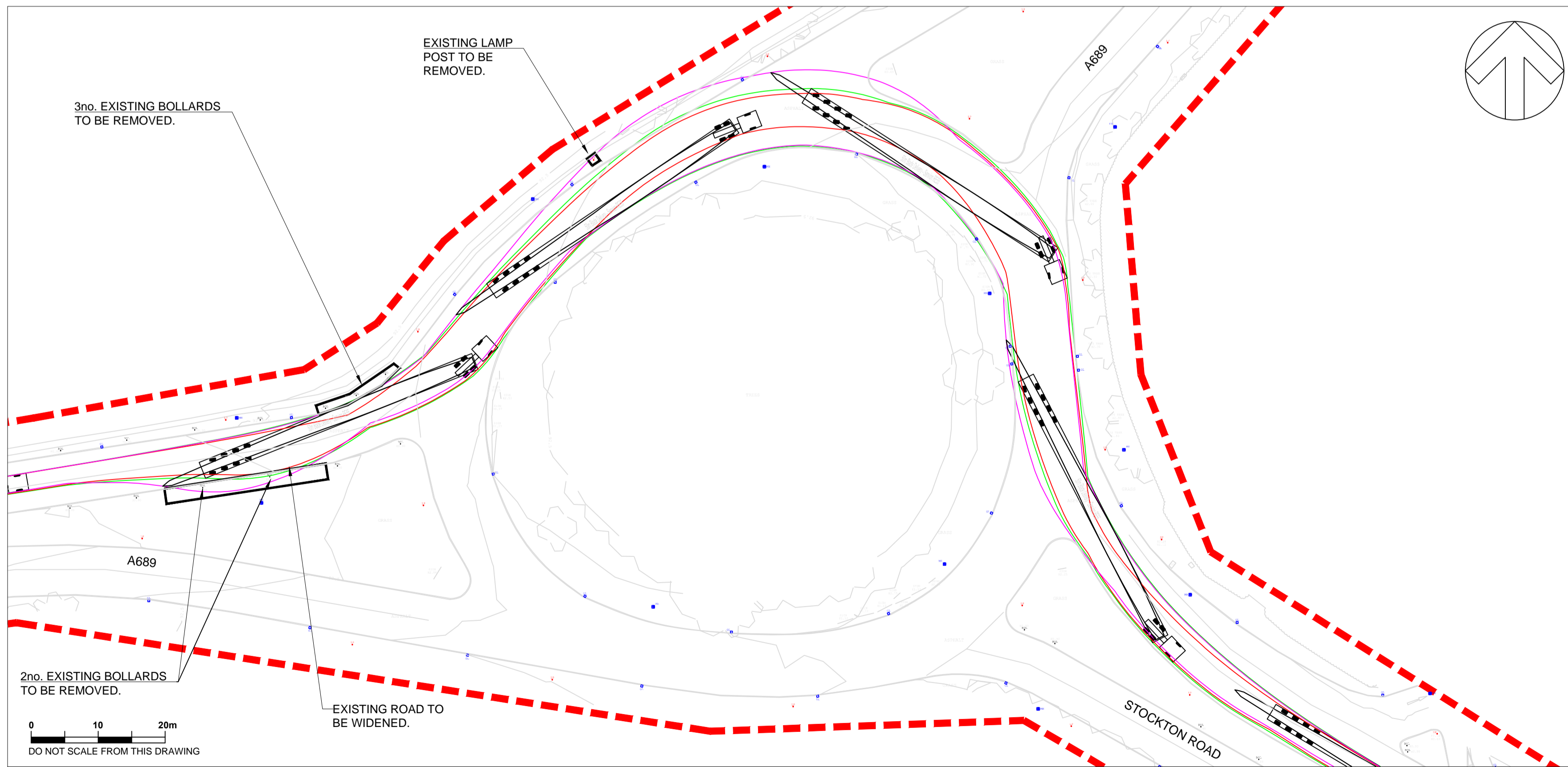
NTS

Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673 and 100017630.

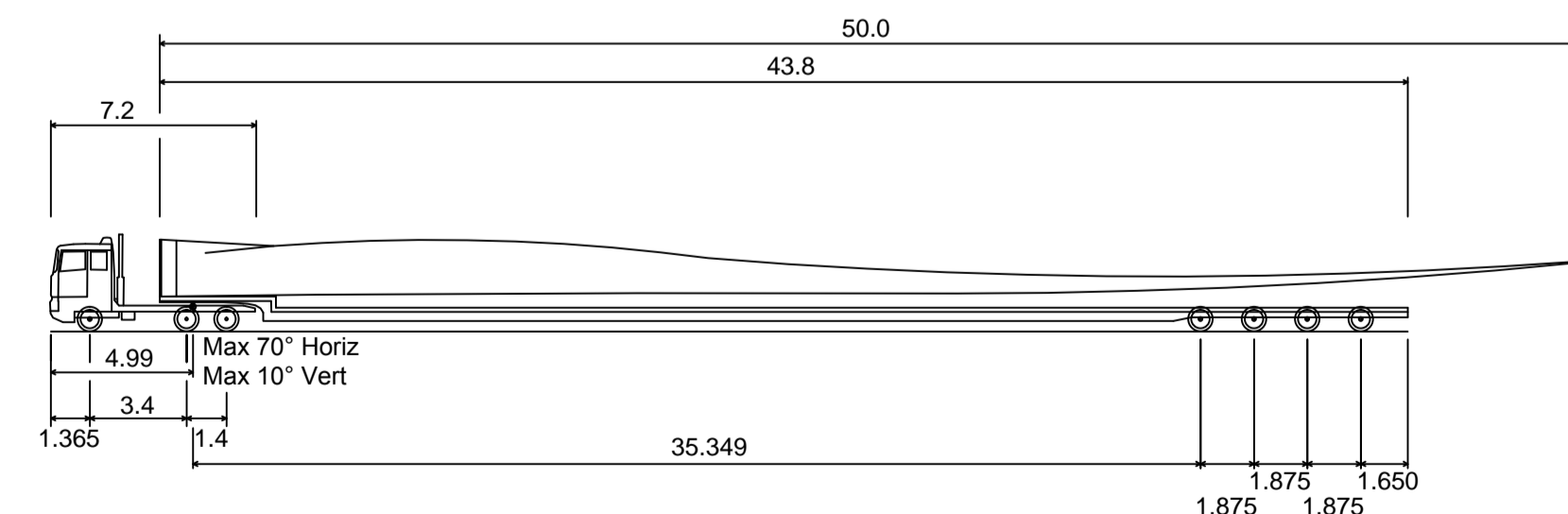
- NOTES:**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
 2. ALL LEVELS ARE IN METRES (AOD).

- SWEEP LINE OF WHEELS/CHASSIS
- SWEEP LINE OF LOAD
- SWEEP LINE OF BODY



PINCH POINT 03 - BLADE TRANSPORT (AUTOMATIC STEERING)

Scale 1:500



50m Blade Delivery - Servion RE55

- Overall Length 47.614m
- Overall Width 2.550m
- Overall Body Height 3.404m
- Min Body Ground Clearance 0.328m
- Track Width 2.478m
- Lock to Lock Time 4.00s
- Kerb to Kerb Turning Radius 7.000m

TURBINE TRANSPORT VEHICLE

A	Initial drawing issue	YH/ER	08-10-15
---	-----------------------	-------	----------

Rev	Description	By/Ch	Date
	Natural Power Consultants Ltd. The Green House, Forrest Estate, Dalry, Castle Douglas, DG7 3XS, UK Tel: +44(0)1644 430 008 Fax: +44(0)845 299 1236 E-mail: sayhello@naturalpower.com www.naturalpower.com		



IFS Doc No. : XXXXXXXX IFS Activity: XXXX.XXXXXX

Drawn: YH Checked: ER Approved: DRW

Scale: 1:500 @ A1 Date: 08-10-2015

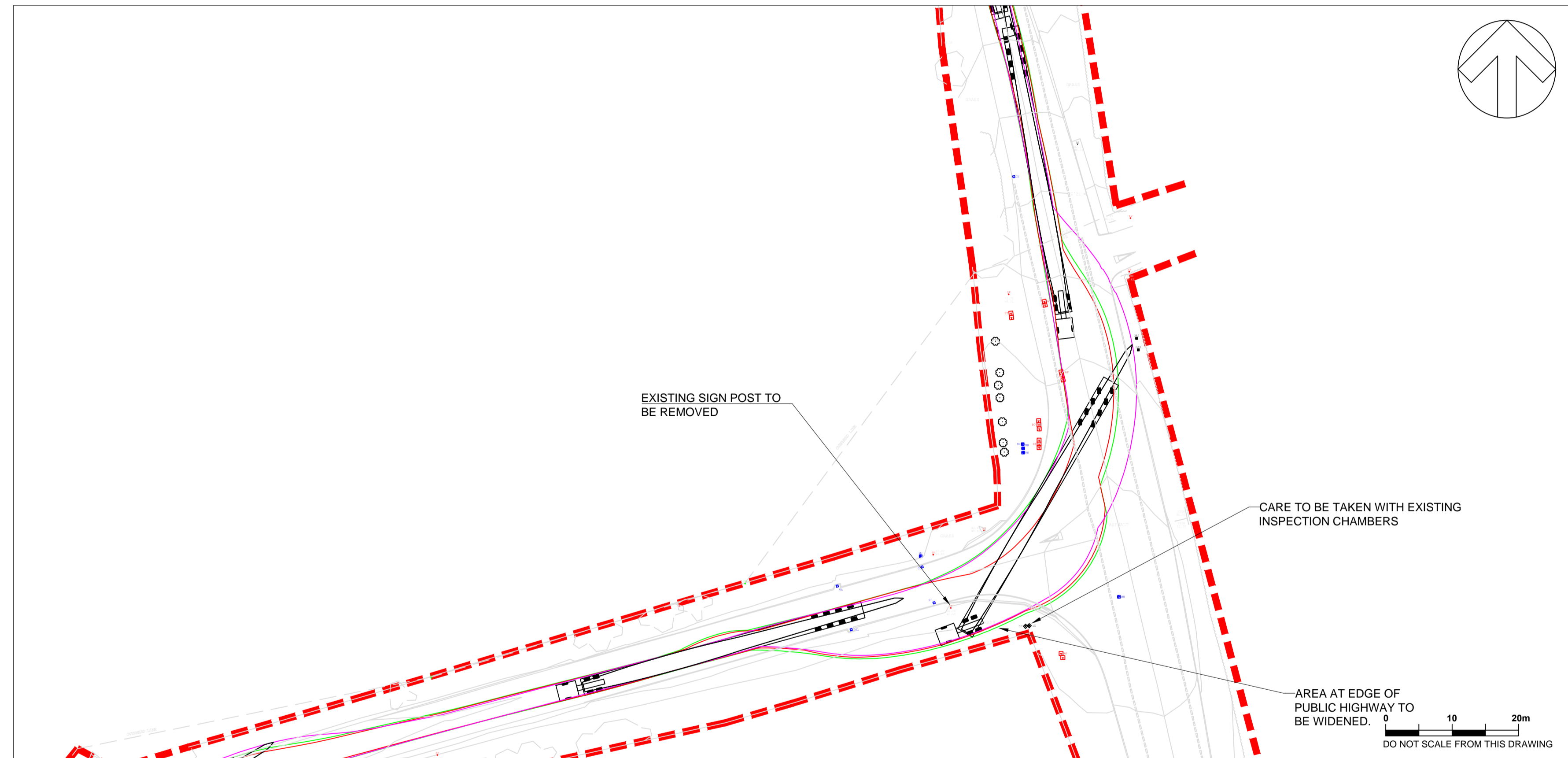
Client: Banks Renewables

Status: **FOR COMMENT**

Project: Lambshill Wind Farm

Drawing Title: Abnormal Load Pinch Point 03 SPA

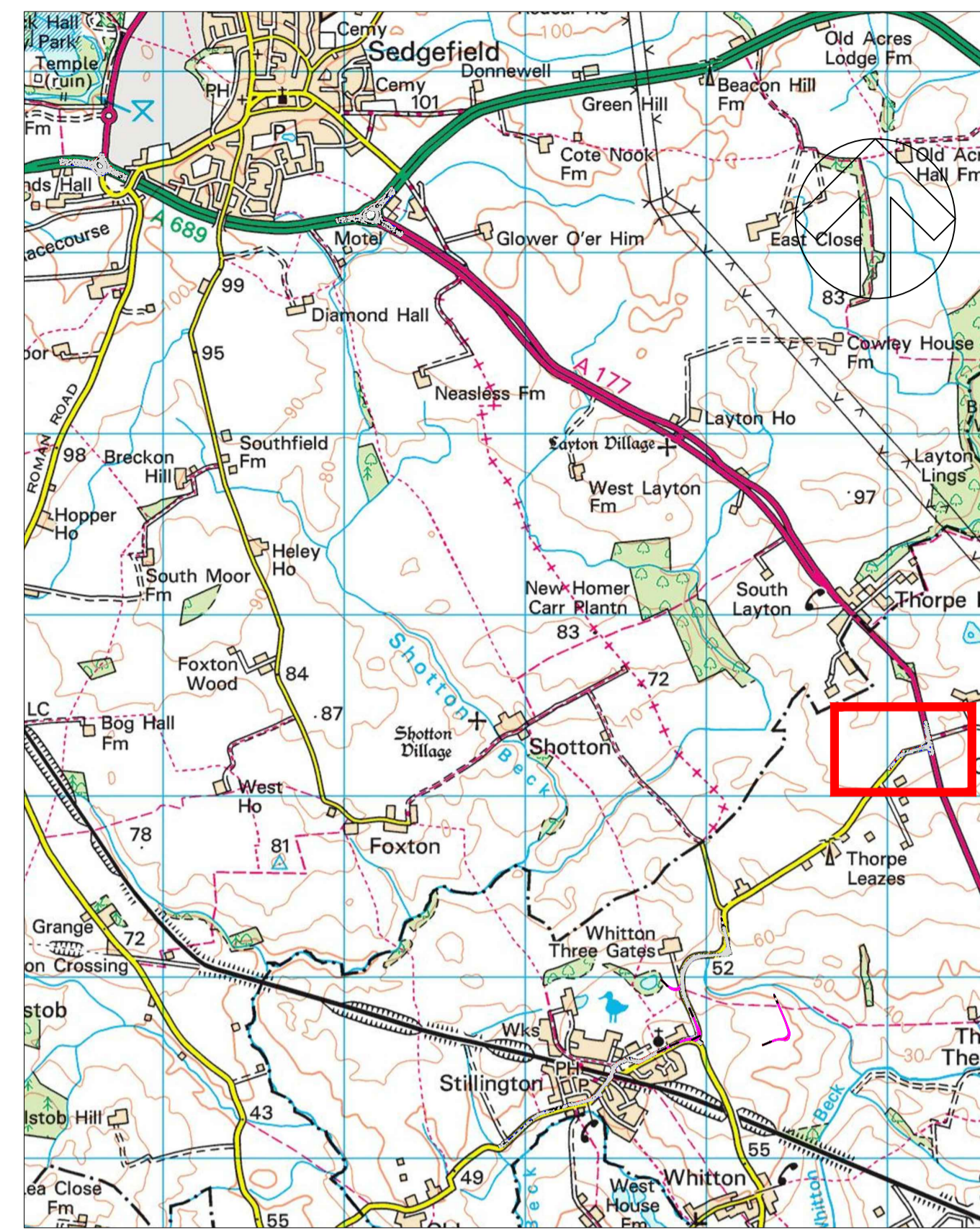
Drawing No. 11292_200_002 Revision A



PINCH POINT 04 - BLADE TRANSPORT (AUTOMATIC STEERING)

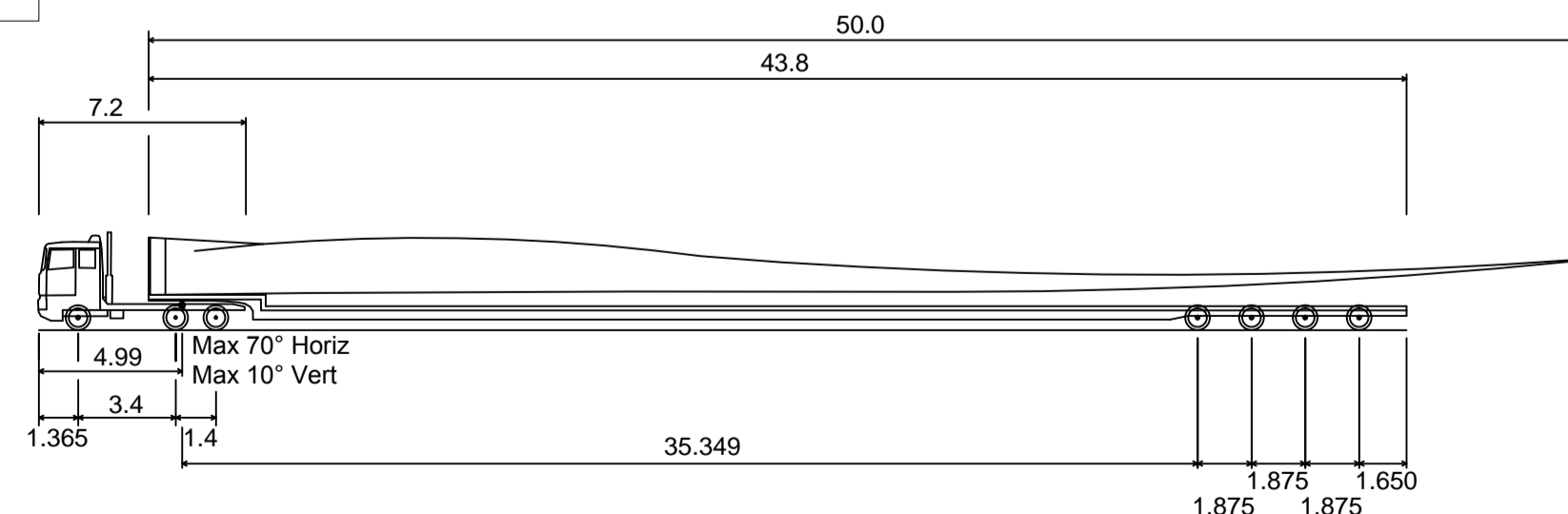
Scale 1:500

NOTE : NO BENEFIT ACHIEVED IN ADOPTING MANUAL STEER



PINCH POINT 04 - LOCATION PLAN

NTS



50m Blade Delivery - Servion RE55
 Overall Length 47.614m
 Overall Width 2.550m
 Overall Body Height 3.404m
 Min Body Ground Clearance 0.328m
 Track Width 2.478m
 Lock to Lock Time 4.00s
 Kerb to Kerb Turning Radius 7.000m

TURBINE TRANSPORT VEHICLE

Legal:
 Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
 © Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673 and 100017630.

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (AOD).

- SWEEP LINE OF WHEELS/CHASSIS
- SWEEP LINE OF LOAD
- SWEEP LINE OF BODY

A	Initial drawing issue	YH/ER	08-10-15
---	-----------------------	-------	----------

Rev	Description	By/Ch	Date
	Natural Power Consultants Ltd. The Green House, Forrest Estate, Dalry, Castle Douglas, DG7 3XS, UK Tel: +44(0)1644 430 008 Fax: +44(0)845 299 1236 E-mail: sayhello@naturalpower.com www.naturalpower.com		



IFS Doc No. : XXXXXXXX IFS Activity: XXXX.XXXXXX

Drawn: YH Checked: ER Approved: DRW

Scale: 1:500 @ A1 Date: 08-10-2015

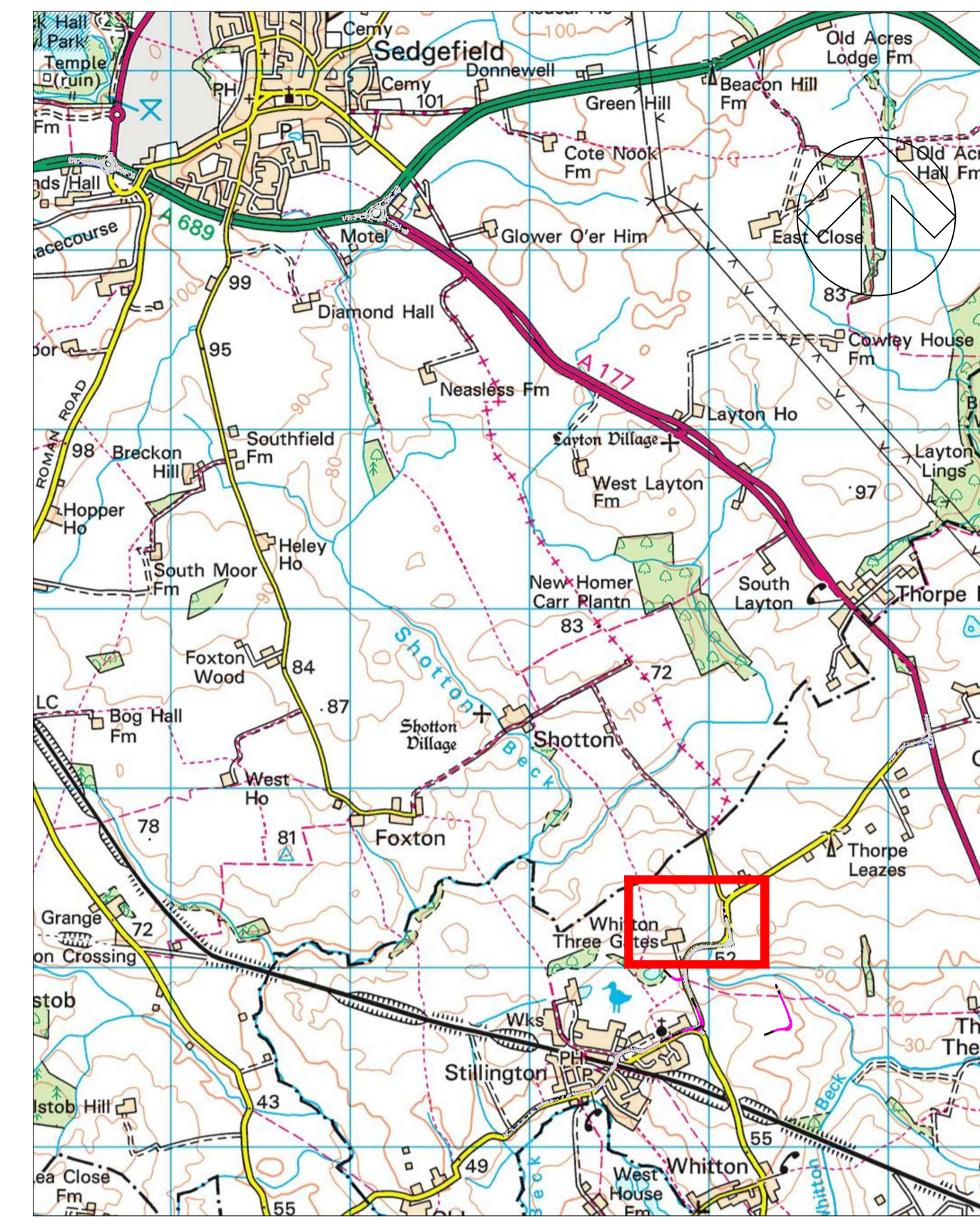
Client: Banks Renewables

Status: **FOR COMMENT**

Project: Lambhill Wind Farm

Drawing Title: Abnormal Load Pinch Point 04 SPA

Drawing No. 11292_200_003 Revision A



PINCH POINT 05 - LOCATION PLAN

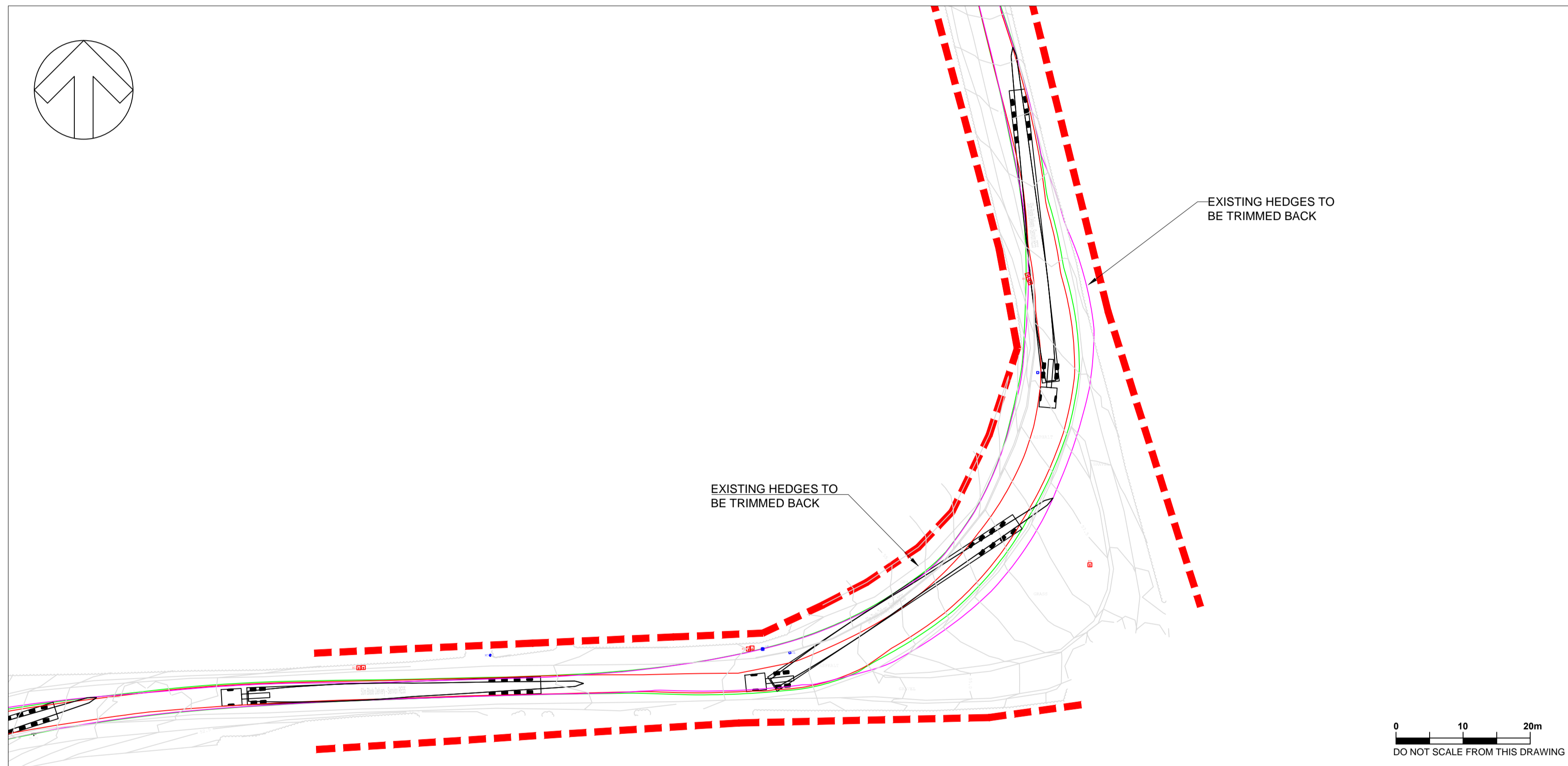
NTS

Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673 and 100017630.

- NOTES:**
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
 2. ALL LEVELS ARE IN METRES (AOD).

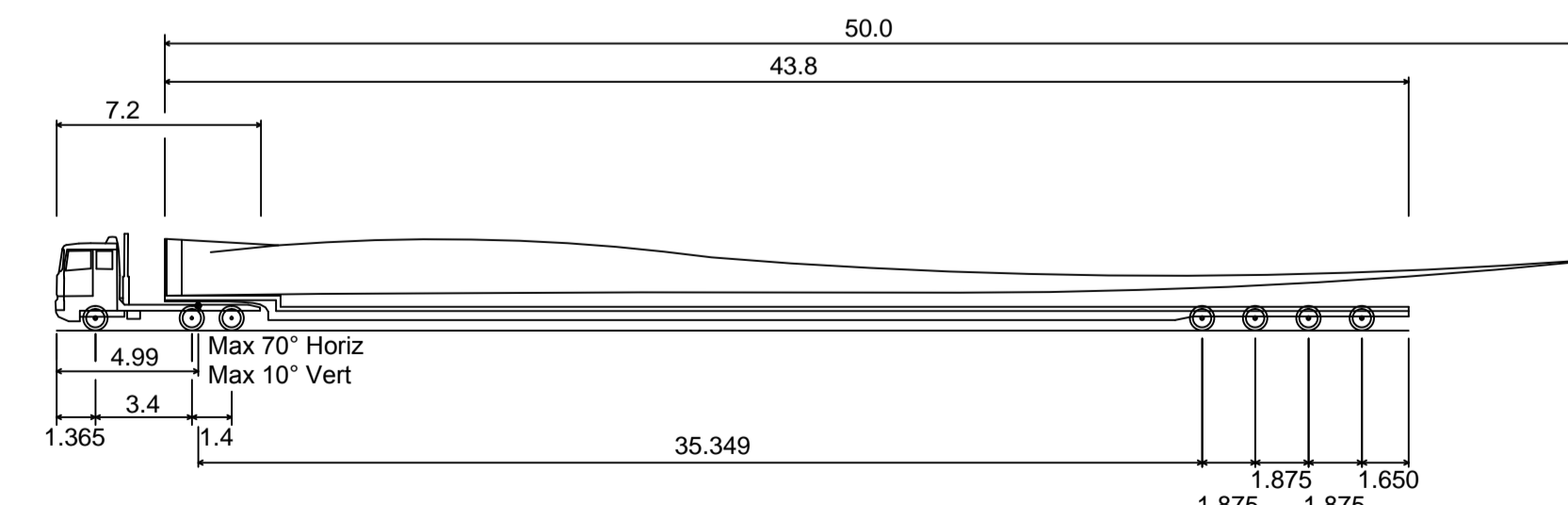
- SWEEP LINE OF WHEELS/CHASSIS
- SWEEP LINE OF LOAD
- SWEEP LINE OF BODY



PINCH POINT 05 - BLADE TRANSPORT (AUTOMATIC STEERING)

Scale 1:500

NOTE : NO BENEFIT ACHIEVED IN ADOPTING MANUAL STEER



50m Blade Delivery - Servion RE55
 Overall Length 47.614m
 Overall Width 2.550m
 Overall Body Height 3.404m
 Min Body Ground Clearance 0.328m
 Track Width 2.478m
 Lock to Lock Time 4.00s
 Kerb to Kerb Turning Radius 7.000m

TURBINE TRANSPORT VEHICLE

A	Initial drawing issue	YH/ER	08-10-15
Rev	Description	By/Ch	Date

Natural Power Consultants Ltd.
 The Green House, Forrest Estate, Dalry,
 Castle Douglas, DG7 3XS, UK
 Tel: +44(0)1644 430 008
 Fax: +44(0)845 299 1236
 E-mail: sayhello@naturalpower.com
 www.naturalpower.com



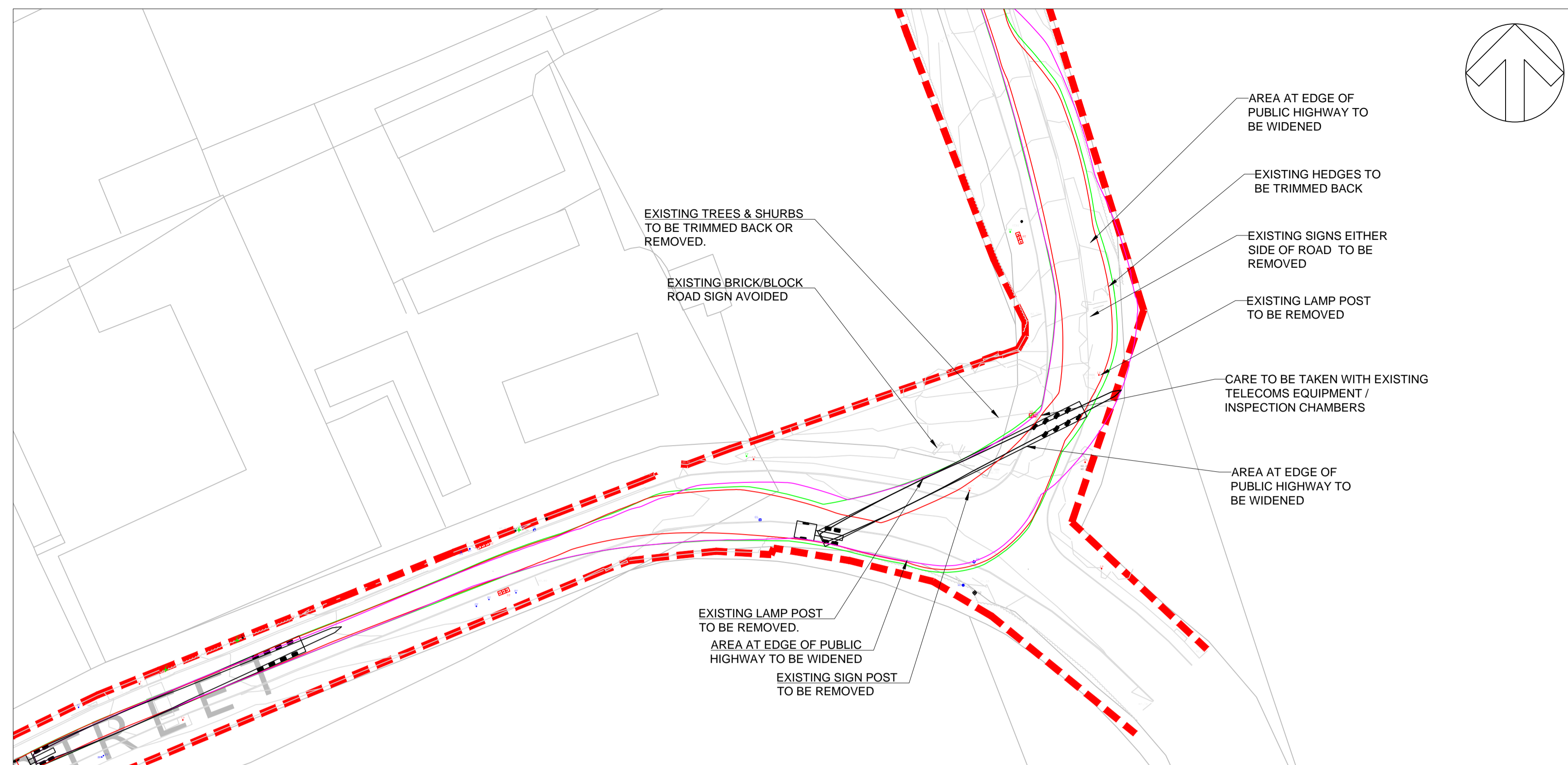
IFS Doc No. : XXXXXXX	IFS Activity: XXXX.XXXXX
Drawn: GC	Checked: ER
Scale: 1:500 @ A1	Approved: DRW
Client: Banks Renewables	Date: 08-10-2015

Status: **FOR COMMENT**

Project: Lambhill Wind Farm

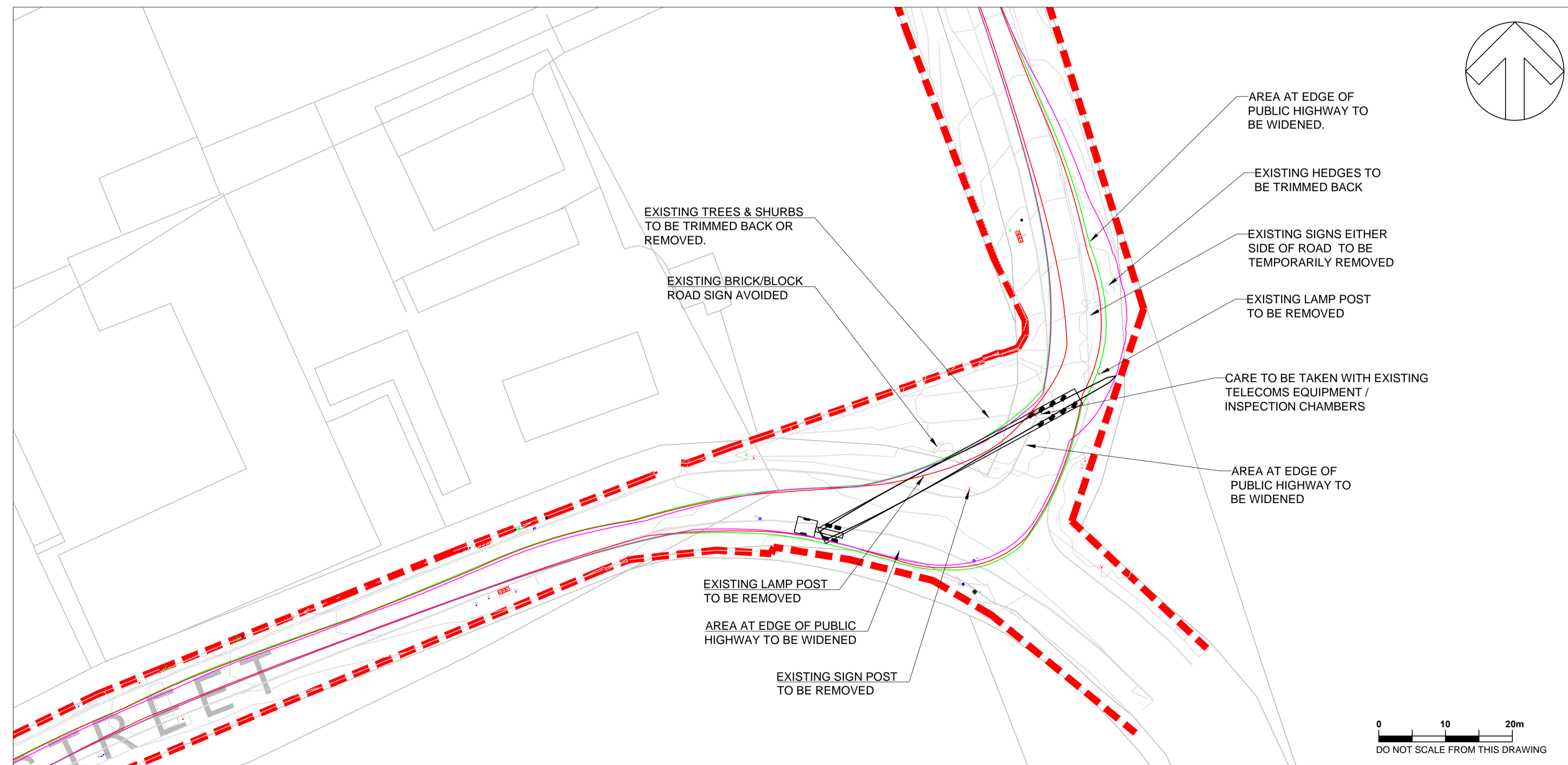
Drawing Title: Abnormal Load Pinch Point 05 SPA

Drawing No. 11292_200_004	Revision A
---------------------------	------------



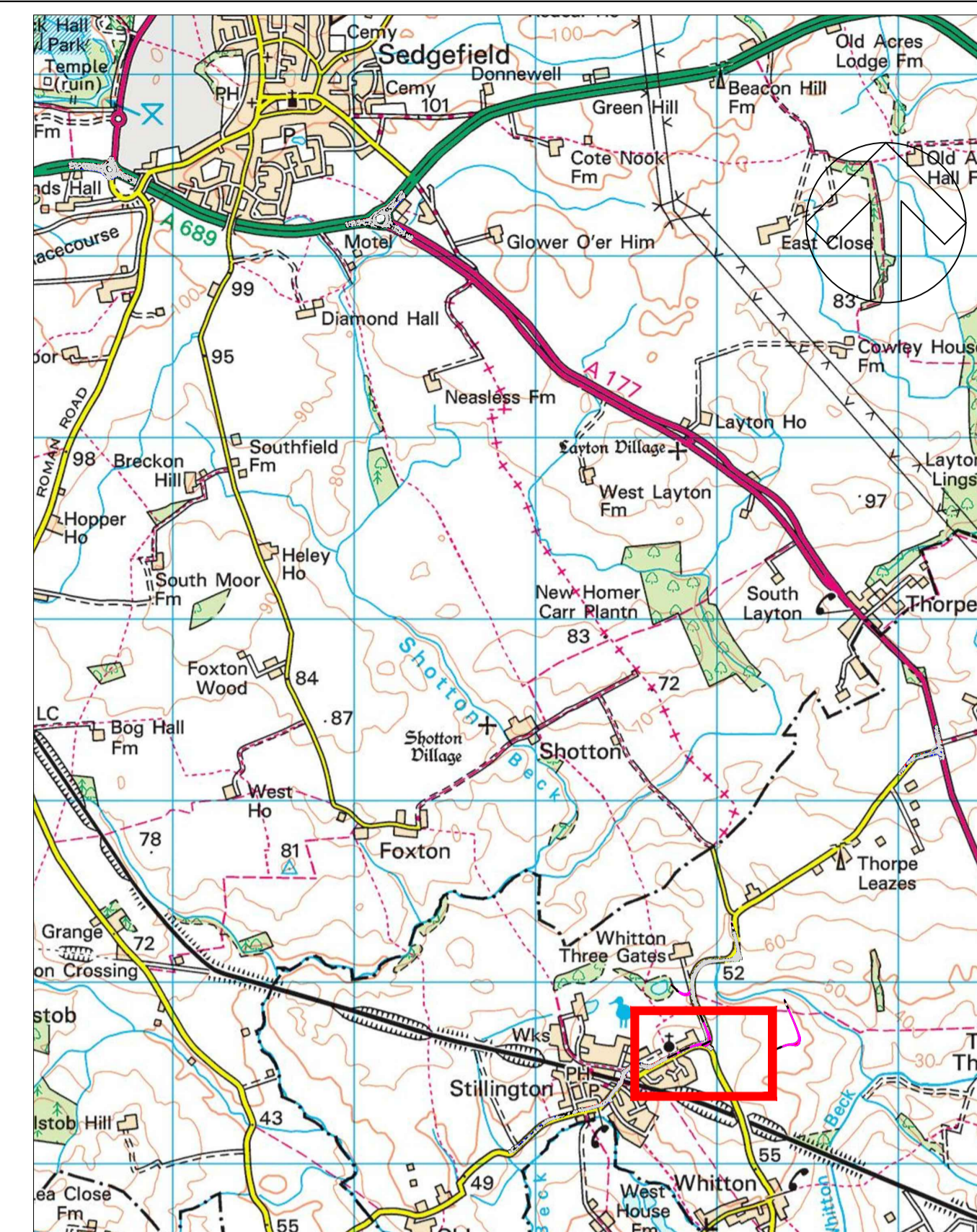
PINCH POINT 06 - BLADE TRANSPORT (MANUAL STEERING)

Scale 1:500



PINCH POINT 06 - BLADE TRANSPORT (AUTOMATIC STEERING)

Scale 1:500



PINCH POINT 06 - LOCATION PLAN

NTS

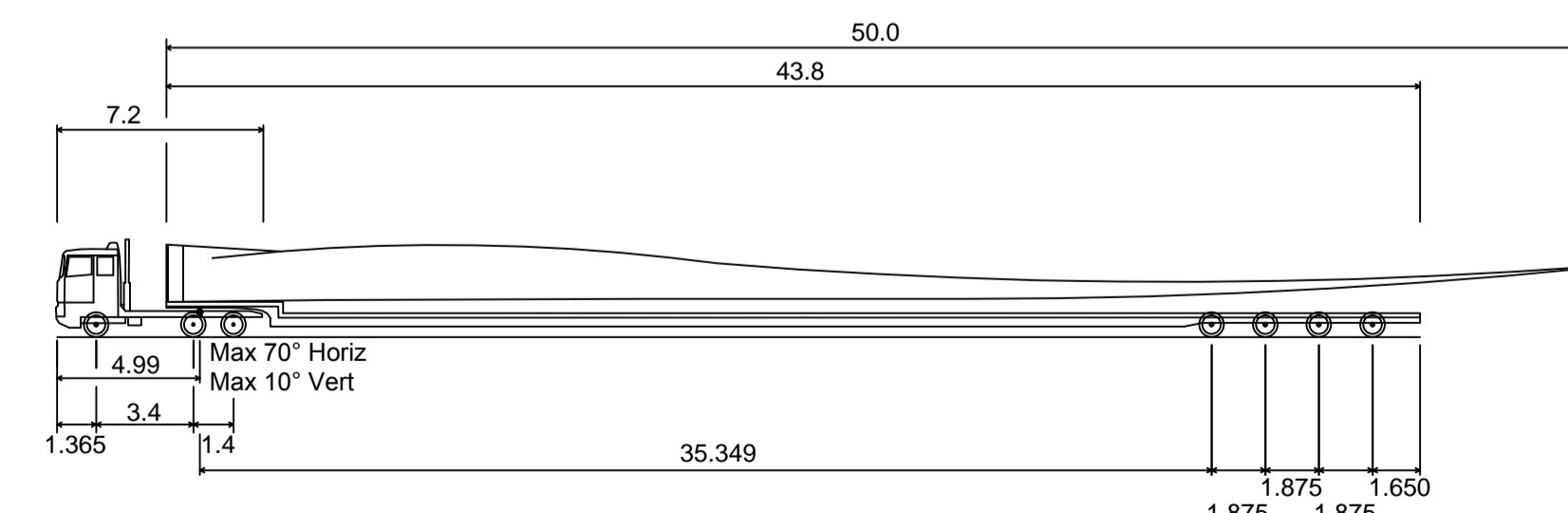
Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.

Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673 and 100017630.

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES (AOD).

- SWEEP LINE OF WHEELS/CHASSIS
- SWEEP LINE OF LOAD
- SWEEP LINE OF BODY



50m Blade Delivery - Servion RE55
 Overall Length 47.614m
 Overall Width 2.550m
 Overall Body Height 3.404m
 Min Body Ground Clearance 0.328m
 Track Width 2.478m
 Lock to Lock Time 4.00s
 Kerb to Kerb Turning Radius 7.000m

TURBINE TRANSPORT VEHICLE

A	Initial drawing issue	YH/ER	08-10-15
Rev	Description	By/Ch	Date

Natural Power Consultants Ltd.
 The Green House, Forrest Estate, Dalry,
 Castle Douglas, DG7 3XS, UK
 Tel: +44(0)1644 430 008
 Fax: +44(0)845 299 1236
 E-mail: sayhello@naturalpower.com
 www.naturalpower.com



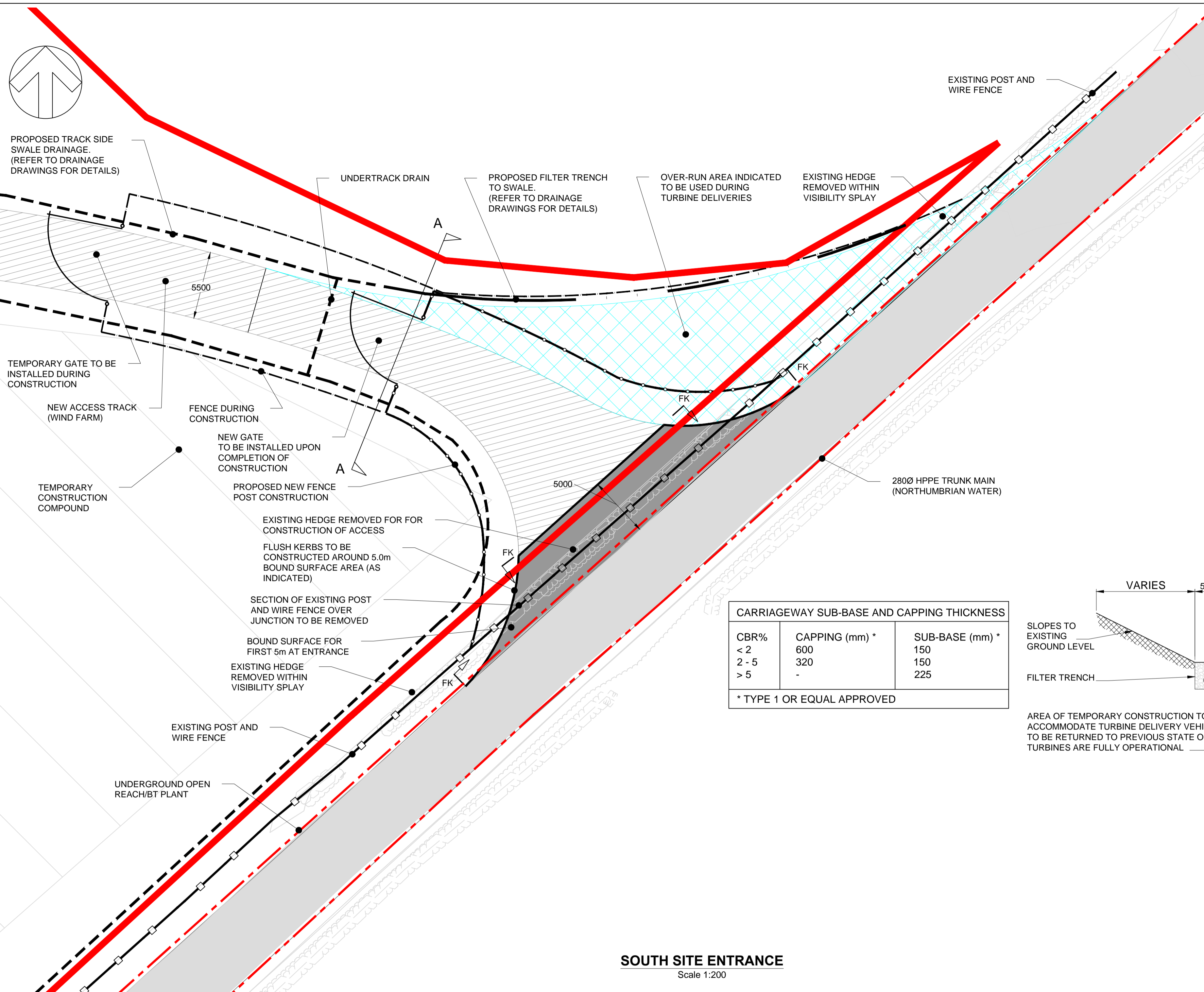
IFS Doc No. : XXXXXXX	IFS Activity: XXXX.XXXXX	
Drawn: YH	Checked: ER	Approved: DRW
Scale: 1:500 @ A1	Date: 08-10-2015	

Client: **Banks Renewables**
 Status: **FOR COMMENT**

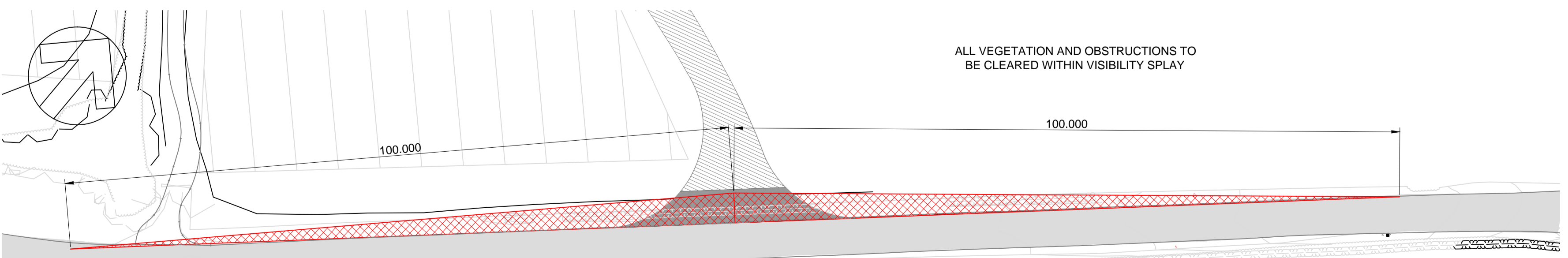
Project: **Lambs Hill Wind Farm**

Drawing Title: **Abnormal Load Pinch Point 06 SPA**

Drawing No. **11292_200_005** Revision **A**

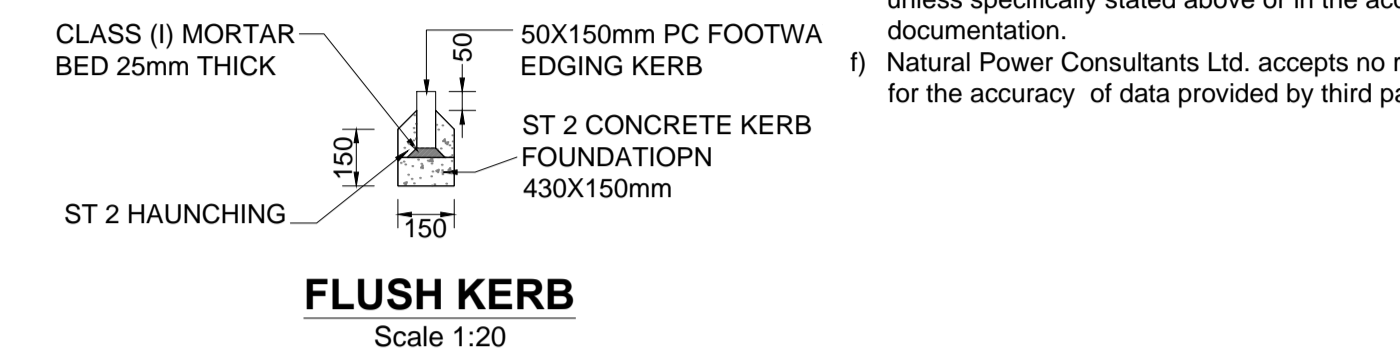


SOUTH SITE ENTRANCE
Scale 1:200

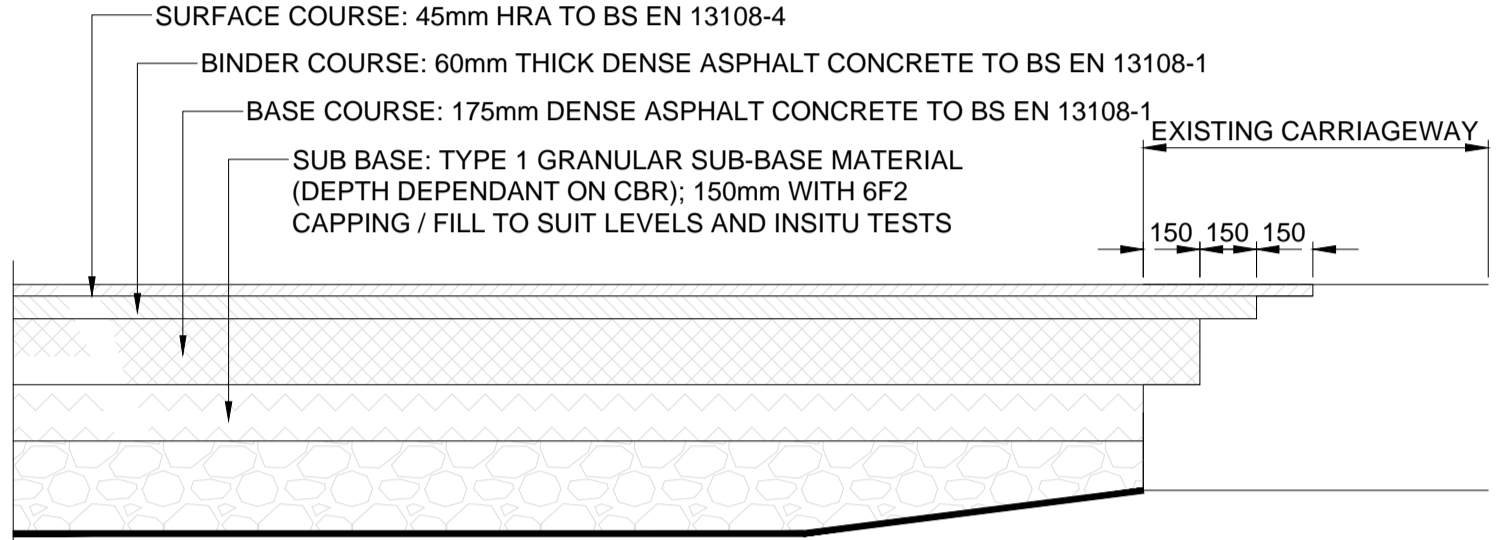


SITE ENTRANCE VISIBILITY SPLAY 4.5m x 200m
Scale 1:500

NOTE:
UNABLE TO ACHIEVE 215m VISIBILITY SPLAY FOR 100km/h(60mph).
PROPOSED TO INCLUDE TEMPORARY SPEED RESTRICTION OF 65km/h(40mph) WITH ASSOCIATED 100m VISIBILITY SPLAY



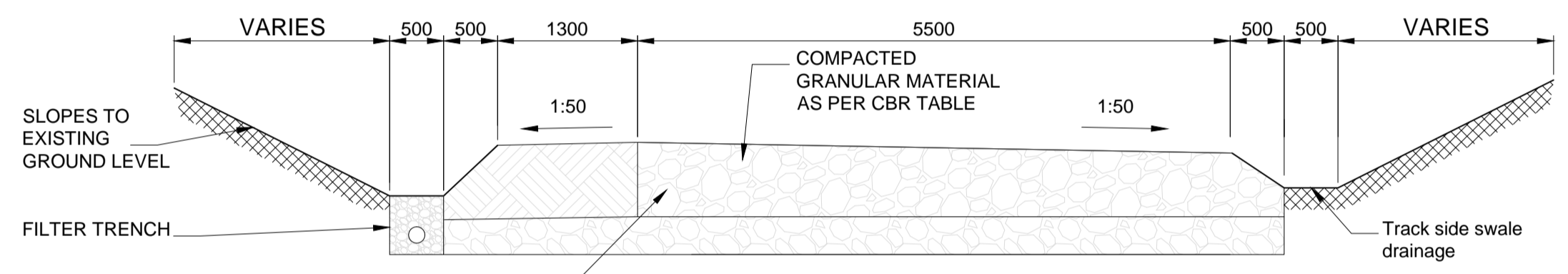
FLUSH KERB
Scale 1:20



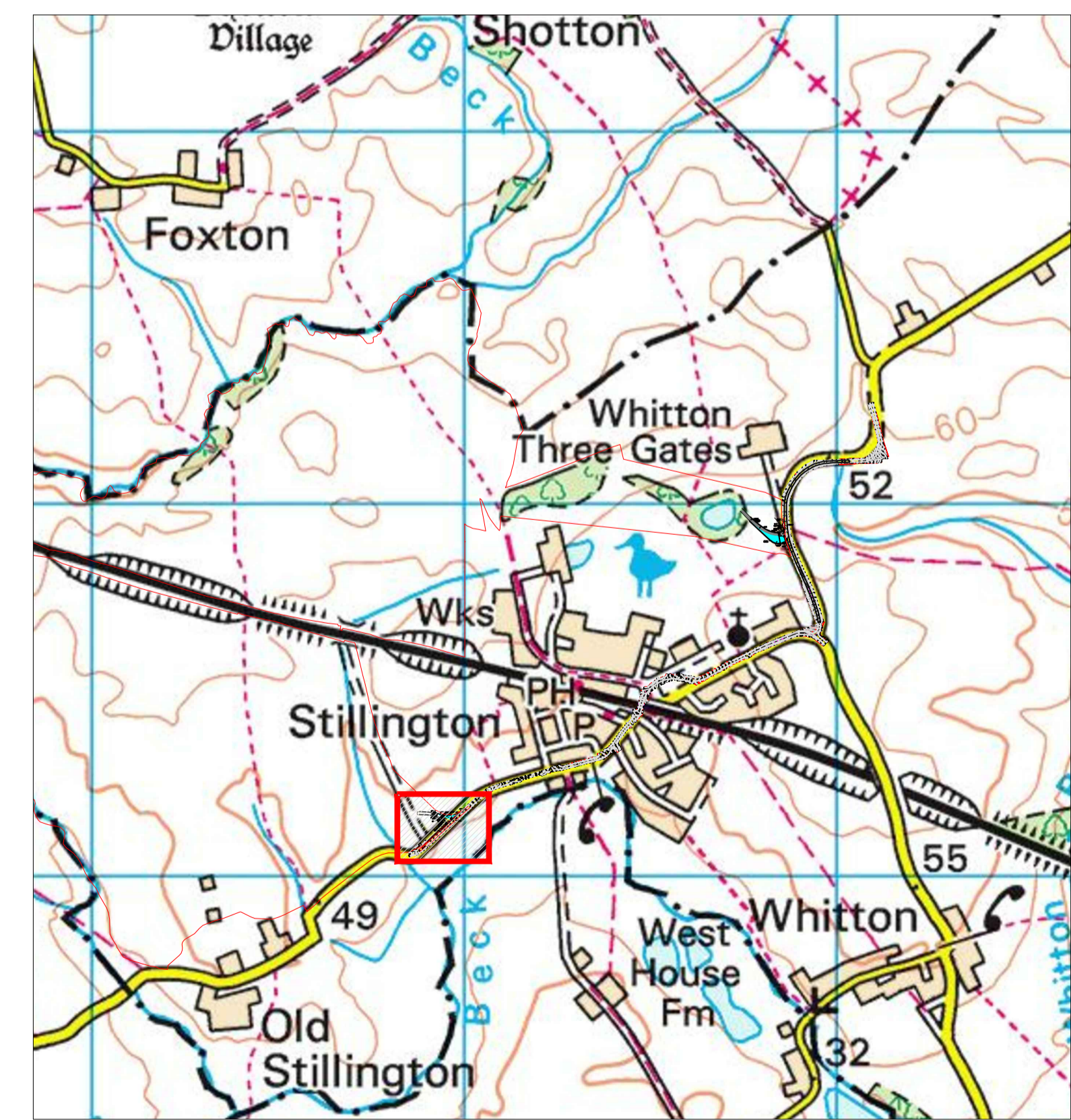
BENCHING DETAIL TO EXISTING CARRIAGEWAY
Scale 1:20

CBR%	CAPPING (mm) *	SUB-BASE (mm) *
< 2	600	150
2 - 5	320	150
> 5	-	225

* TYPE 1 OR EQUAL APPROVED



SECTION A-A THROUGH ACCESS TRACK AT JUNCTION
Scale 1:50



KEY PLAN
Scale NTS

- GENERAL NOTES**
- Information on this map is directly reproduced from digital and analogue material from different sources. Minor discrepancies may therefore occur. Where further clarification is considered necessary, this is noted through the use of text boxes on the map itself.
 - For the avoidance of doubt and unless otherwise stated: where a line recorded in the key demarcates a boundary on this plan, the boundary edge is the outside edge of the line.
 - where a line or feature recorded in the key of this plan is also shown as a line or feature by the Ordnance Survey, then the line or feature shall be deemed to follow the position as existing on the ground.
 - this plan should be used for identification purposes only, unless specifically stated above or in the accompanying documentation.
 - Natural Power Consultants Ltd. accepts no responsibility for the accuracy of data provided by third parties.

Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.
Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673.

- Key:**
- Existing road surface
 - Proposed new bound surface at entrance
 - Proposed new access track (wind farm)
 - Proposed over-run area (Abnormal Loads)
 - Existing fences
 - Proposed new fences during construction
 - Proposed new fences post construction
 - Site boundary
 - Filter trench drainage
 - Filter trench drainage
 - Openreach/BT plant
 - HPPE Trunk main

- PARTICULAR NOTES**
- Access has been designed to allow for a 50m Blade Length, to be delivered on an extendable trailer with tractor unit.
 - Design has also been influenced by site visit carried out to assess the location & sight lines. Areas of barrier are indicative.
 - Vehicle utilising automatic rear wheel steer
 - Due to the combined margin for error associated with OS Master Mapping, prior to the commencement of any land agreement or any works, the extents of upgrading identified should be confirmed by conducting a delivery trial run and boundary check.
 - Appropriate traffic management required during the delivery.

- CONSTRUCTION NOTES**
- All Dimensions in Millimeters unless noted otherwise stated. Radius dimensions are in Meters. Also note dimensions are approx.
 - All Works shall be in accordance with the specification for Highway Works.
 - All materials and workmanship to comply with the current British Standards and codes of practice.
 - The drawing indicates the location of identified buried services. The Contractor shall be responsible for identifying and locating all services. All services shall be diverted/protected to the agreement of the utility provider.
 - The Contractor shall be responsible for the correct setting out of the works on site. Only stated dimensions are to be used. Any discrepancies are to be reported to the designer before proceeding.
 - Prior to commencing the works the Contractor shall verify the level of the existing ditches and culverts.
 - The ends of the existing fences hedges and walls truncated by the works shall be made good. All street furniture to be relocated in agreement with the roads authority and land owners.
 - Over-run area shall be restricted for normal deliveries by the use of cones and only utilised as an over-run area for the turbine deliveries.
 - The proposed junction layout arrangement assumes turbine deliveries are from the east side only. The junction has been designed using swept path analysis.
 - The proposed pavement shall have construction:
Surface Course: 45mm thick HRA, recipe mix to BS EN 13108-4, Binder 40/60 pen with coated Chippings 14/20mm nominal size, 55 minimum polished value (PSV) and 14 maximum aggregate abrasion value (AAV)
Binder Course: 60mm thick dense asphalt concrete to BS EN 13108-1 to AC 32 dense bin 100/150 rec.
Base: 175mm thick dense asphalt concrete to BS EN 13108-1 to AC 32 dense BIN 100/150 rec.
Subbase: Refer to CBR table

B	Services added	YH/ER	23-09-15
A	Initial drawing issue	YH/ER	27-08-15

Rev	Description	By/Ch	Date
Natural Power Consultants Ltd. The Green House, Forrest Estate, Dalry, Castle Douglas, DG7 3XS, UK Tel: +44(0)1644 430 008 Fax: +44(0)845 299 1236 E-mail: sayhello@naturalpower.com www.naturalpower.com			



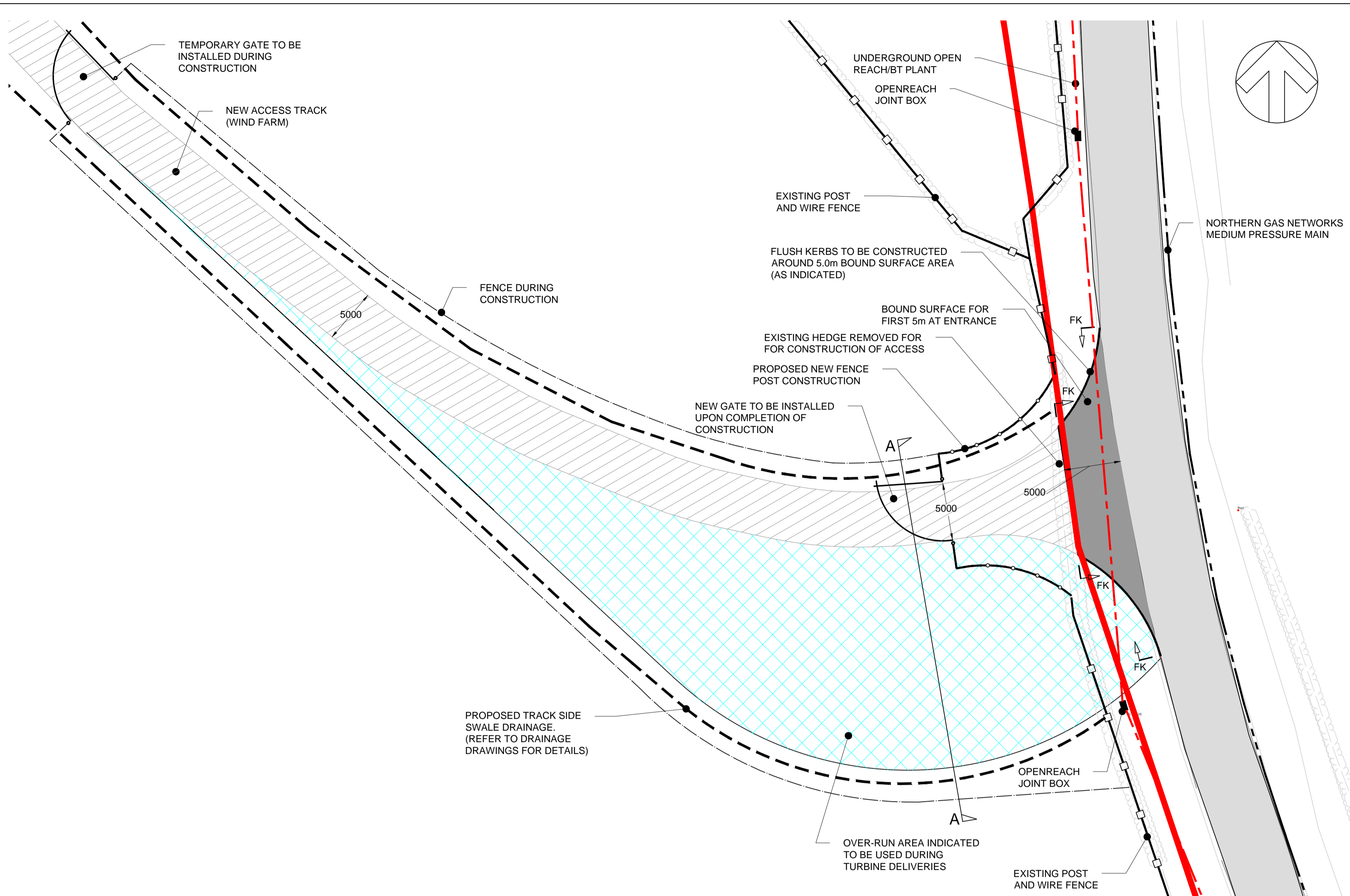
IFS Doc No. : XXXXXXX	IFS Activity: XXXX.XXXXX	
Drawn: YH	Checked: ER	Approved: DRW
Scale: As Shown @ A1	Date: 27-08-2015	

Client: Banks Renewables
Status: **FOR COMMENT**

Project: Lams Hill Wind Farm

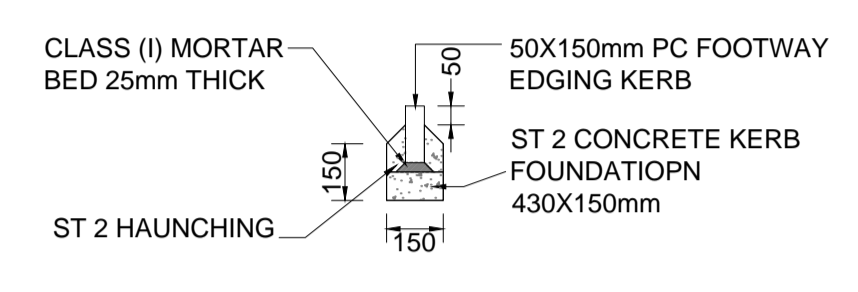
Drawing Title: Site Access Junction South Location

Drawing No. 11292_100_100	Revision B
---------------------------	------------



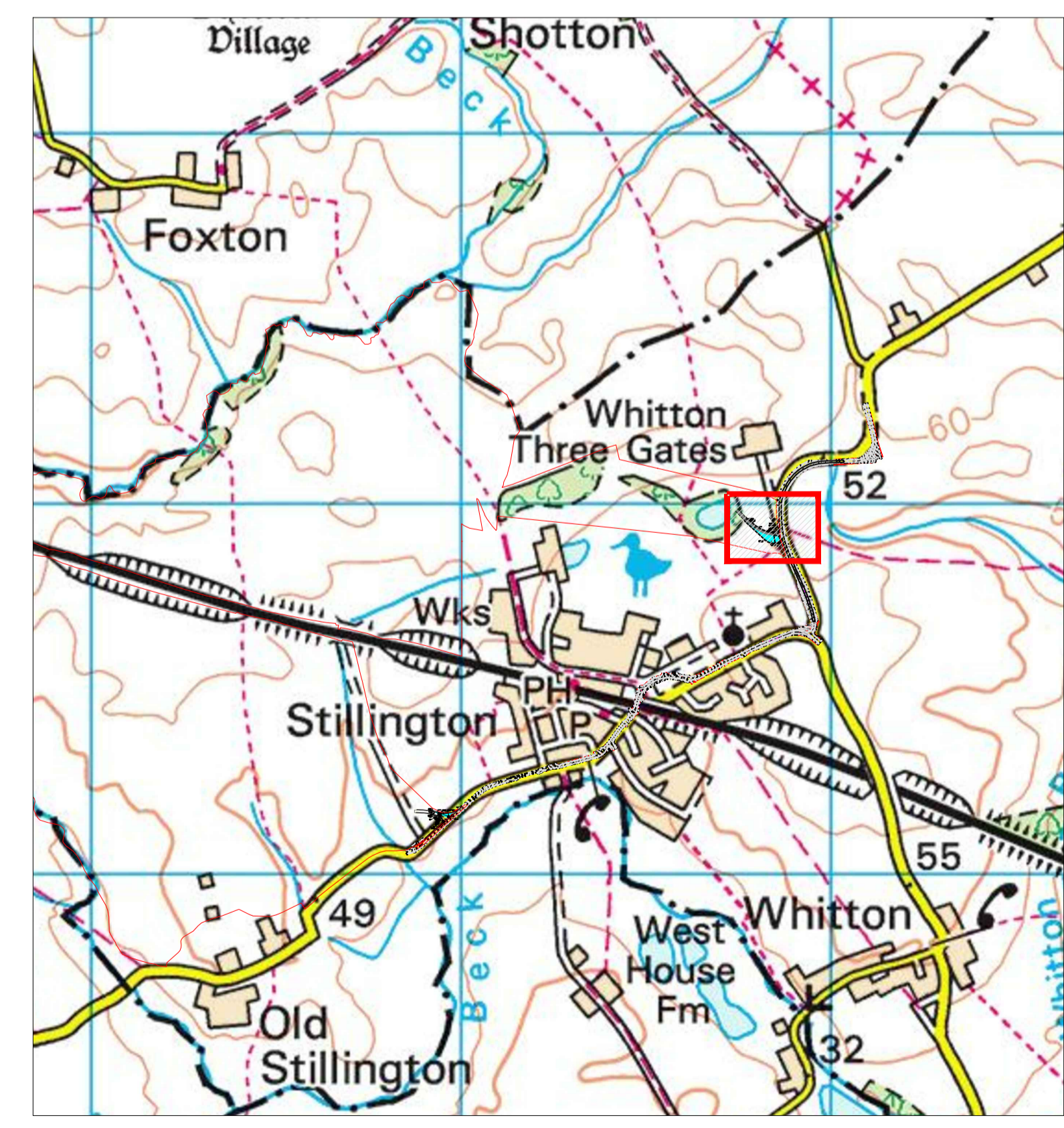
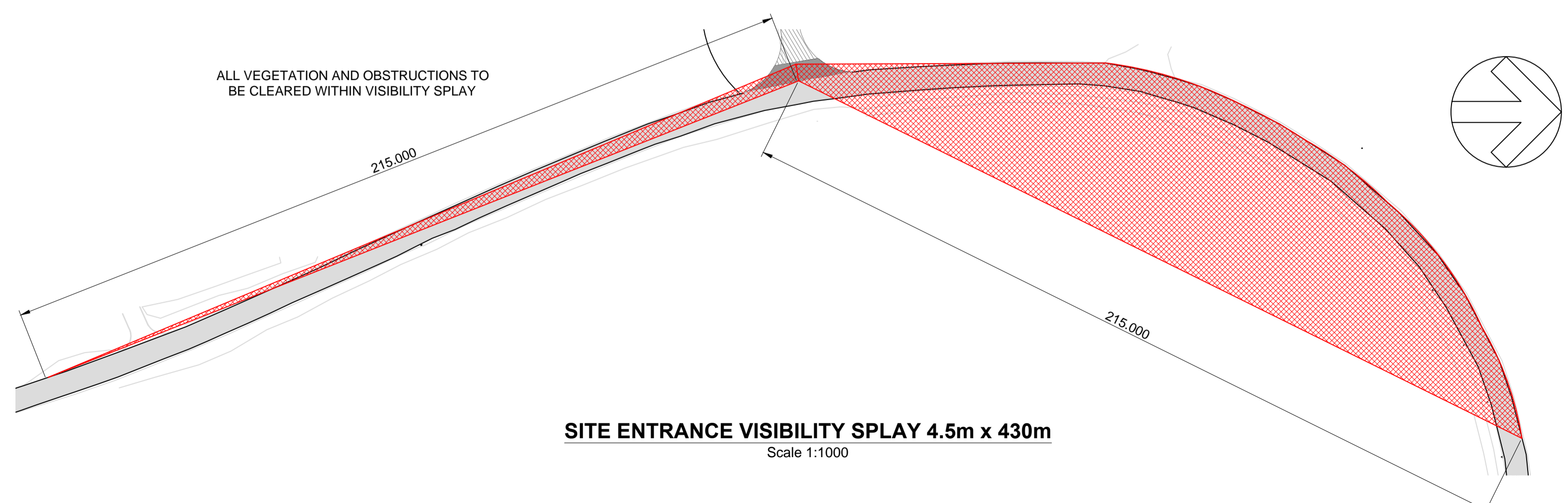
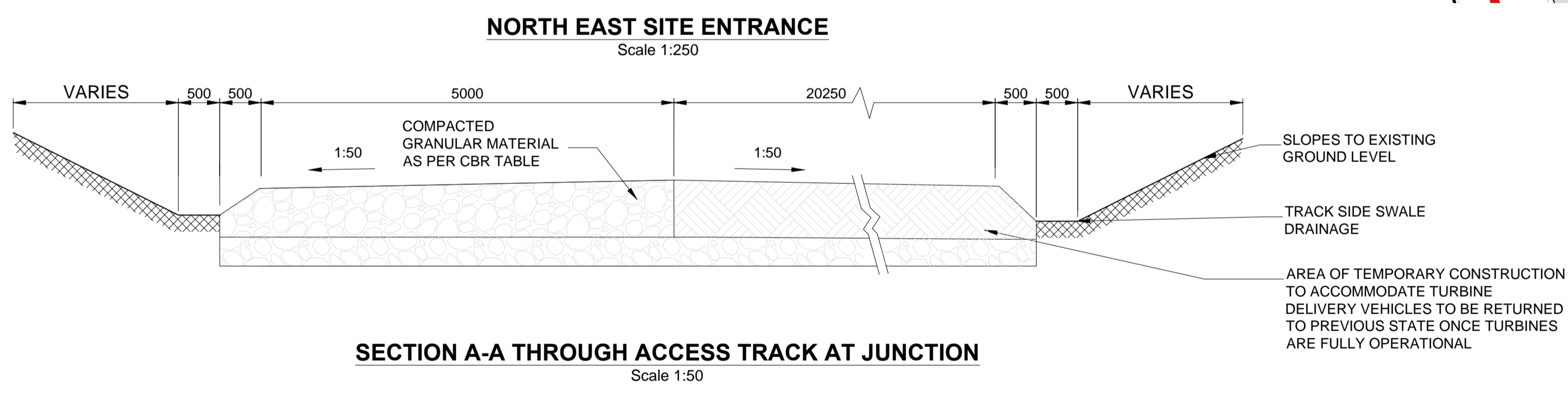
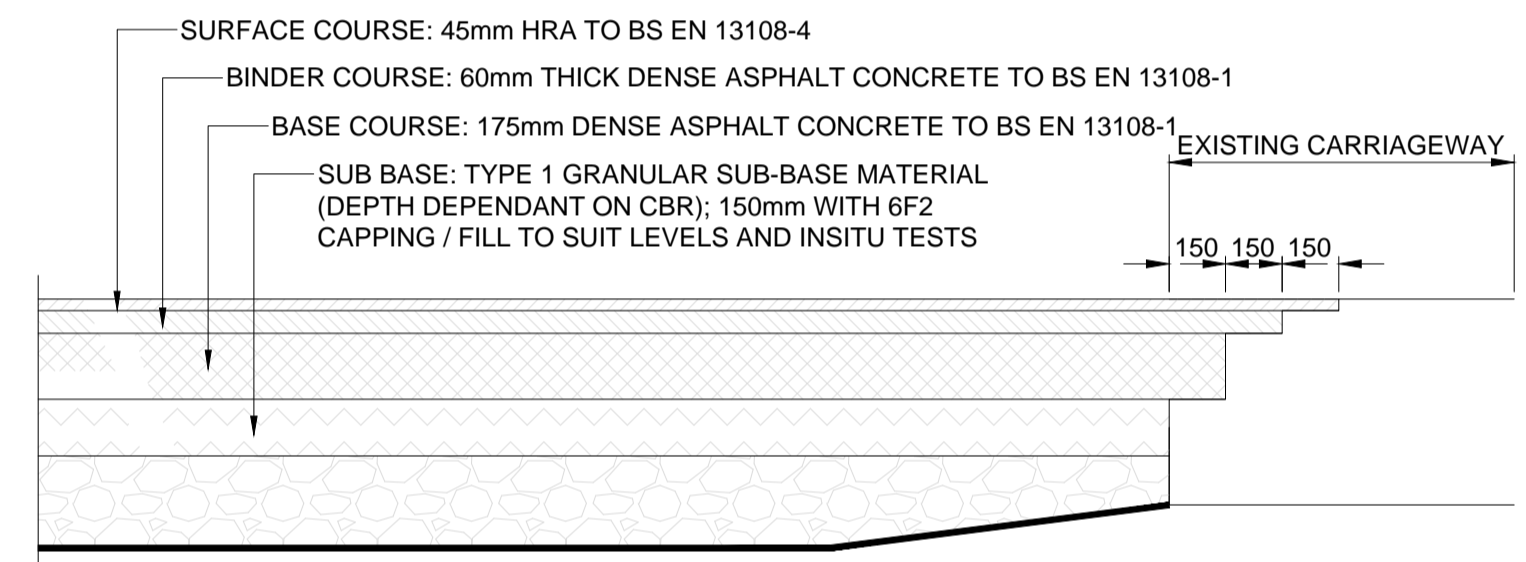
GENERAL NOTES

- Information on this map is directly reproduced from digital and analogue material from different sources. Minor discrepancies may therefore occur. Where further clarification is considered necessary, this is noted through the use of text boxes on the map itself.
- For the avoidance of doubt and unless otherwise stated:
 - where a line recorded in the key demarcates a boundary on this plan, the boundary edge is the outside edge of the line.
 - where a line or feature recorded in the key of this plan is also shown as a line or feature by the Ordnance Survey, then the line or feature shall be deemed to follow the position as existing on the ground.
- this plan should be used for identification purposes only, unless specifically stated above or in the accompanying documentation.
- Natural Power Consultants Ltd. accepts no responsibility for the accuracy of data provided by third parties.



CARRIAGEWAY SUB-BASE AND CAPPING THICKNESS		
CBR%	CAPPING (mm) *	SUB-BASE (mm) *
< 2	600	150
2 - 5	320	150
> 5	-	225

* TYPE 1 OR EQUAL APPROVED



Legal:
Natural Power Consultants Ltd take no responsibility for the accuracy of data provided by third parties.
Copyright:
© Crown Copyright 2015. All rights reserved. Ordnance Survey Licence 0100031673.

- Key:**
- Existing road surface
 - Proposed new bound surface at entrance
 - Proposed new access track (wind farm)
 - Proposed over-run area (Abnormal Loads)
 - Existing fences
 - Proposed new fences during construction
 - Proposed new fences post construction
 - Site boundary
 - Filter trench drainage
 - Filter trench drainage
 - Openreach/BT plant
 - Northern Gas Networks

- PARTICULAR NOTES**
- Access has been designed to allow for a 50m Blade Length, to be delivered on an extendable trailer with tractor unit.
 - Design has also been influenced by site visit carried out to assess the location & sight lines. Areas of batter are indicative.
 - Vehicle utilising automatic rear wheel steer
 - Due to the combined margin for error associated with OS Master Mapping, prior to the commencement of any land agreement or any works, the extents of upgrading identified should be confirmed by conducting a delivery trial run and boundary check.
 - Appropriate traffic management required during the delivery.

- CONSTRUCTION NOTES**
- All Dimensions in Millimeters unless noted otherwise stated. Radius dimensions are in Meters. Also note dimensions are approx.
 - All Works shall be in accordance with the specification for Highway Works.
 - All materials and workmanship to comply with the current British Standards and codes of practice.
 - The drawing indicates the location of identified buried services. The Contractor shall be responsible for identifying and locating all services. All services shall be diverted/protected to the agreement of the utility provider.
 - The Contractor shall be responsible for the correct setting out of the works on site. Only stated dimensions are to be used. Any discrepancies are to be reported to the designer before proceeding.
 - Prior to commencing the works the Contractor shall verify the level of the existing ditches and culverts.
 - The ends of the existing fences hedges and walls truncated by the works shall be made good. All street furniture to be relocated in agreement with the roads authority and land owners.
 - Over-run area shall be restricted for normal deliveries by the use of cones and only utilised as an over-run area for the turbine deliveries.
 - The proposed junction layout arrangement assumes turbine deliveries are from the east side only. The junction has been designed using swept path analysis.
 - The proposed pavement shall have construction:
Surface Course: 45mm thick HRA, recipe mix to BS EN 13108-4, Binder 40/60 pen with coated Chippings 14/20mm nominal size, 55 minimum polished value (PSV) and 14 maximum aggregate abrasion value (AAV)
Binder Course: 60mm thick dense asphalt concrete to BS EN 13108-1 to AC 32 dense bin 100/150 rec.
Base: 175mm thick dense asphalt concrete to BS EN 13108-1 to AC 32 dense BIN 100/150 rec.
Subbase: Refer to CBR table

B	Services added	YH/ER	23-09-15
A	Initial drawing issue	YH/ER	27-08-15
Rev	Description	By/Ch	Date
Natural Power Consultants Ltd. The Green House, Forrest Estate, Dalry, Castle Douglas, DG7 3XS, UK Tel: +44(0)1644 430 008 Fax: +44(0)845 299 1236 E-mail: sayhello@naturalpower.com www.naturalpower.com			




IFS Doc No. : XXXXXXX	IFS Activity: XXXX.XXXXX	
Drawn: YH	Checked: ER	Approved: DRW
Scale: As Shown @ A1	Date: 27-08-2015	
Client: Banks Renewables		
Status: FOR COMMENT		
Project: Lams Hill Wind Farm		
Drawing Title: Site Access Junction North Location		
Drawing No. 11292_100_101	Revision B	

Appendix B

1. Indicative Construction Programme

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10
Public road works	█									
Mobilisation to site	█									
Access & site tracks	█	█	█	█	█	█				
Track reinstatement								█	█	█
Foundations			█	█	█	█				
On site cabling					█	█				
Metering / control building civils			█	█	█					
Metering / control building electricals				█	█	█				
Crane pads						█	█	█		
Turbine erection							█	█	█	
Reinstatement around turbines								█	█	
Off site grid connection works	█	█	█	█						
Commissioning of wind farm								█	█	█

Programme does not allow for delays due to weather or ecological constraints

Drawn: SH	Checked: DC	App: 22/09/10
Scale: NTS	Date: 21/09/10	Drawing Status: APPROVED
Source information:		
<small>Mapping data reproduced from Raster 10,000 by permission of Ordnance Survey © on behalf of the controller of Her Majesty's Stationary Office. © Crown Copyright (2007). All rights reserved AL 100017630</small>		
Project:	Lambs Hill	
Title:	Indicative Site Construction Programme	
Drawing number:	HJB / 749 / PA29	
		
<small>Inkerman Road Tow Law Bishop Auckland, Co Durham DL13 4HG t: 01388 738350 f: 01388 738336 www.banksdevelopments.com</small>		

What We Do



Natural Power is a leading independent renewable energy consultancy and products provider. We offer proactive and integrated consultancy, management & due diligence services, backed by an innovative product range, across the onshore wind, offshore wind, wave, tidal, solar and bioenergy sectors, whilst maintaining a strong outlook on other new and emerging renewable energy sectors. Established in the mid-1990s, Natural Power has been at the heart of many ground-breaking projects, products and portfolios for close to two decades, assisting project developers, investors, manufacturers, finance houses and other consulting companies.

With its iconic Scottish headquarters, The Green House, Natural Power has expanded internationally employing 300 renewable energy experts across Europe and the Americas and operating globally. Providing Planning & Development, Ecology & Hydrology, Technical, Construction & Geotechnical, Asset Management and Due Diligence services, Natural Power is uniquely a full lifecycle consultancy – from feasibility to finance to repowering, and every project phase in between. We are a truly trailblazing consulting organisation; Natural Power has consistently invested in product development and technical research in order to progress certain key areas within the industry such as the operational management of wind farms, the design and assessment of wind farms in complex flow and the use of remote sensing for wind measurement. From award-winning consultancy and management services, through a string of technology world-firsts, Natural Power has a successful track record and the breadth of services and deep-rooted experience that provides a wealth of added value for our diverse client base.

Natural Power – delivering your local renewable energy projects, globally.

Our Global Expertise

Natural Power delivers services and operates assets globally for our clients, with twelve offices across Europe and North America and agencies active in South America and AsiaPac.

UK & IRELAND

Registered Office > Scotland

The Green House, Forrest Estate
Dalry, Castle Douglas, DG7 3XS
SCOTLAND, UK

Stirling > Scotland

Ochil House
Springkerse Business Park
Stirling, FK7 7XE
SCOTLAND, UK

Inverness > Scotland

Suite 3, Spey House, Dochfour
Business Centre, Dochgarroch
Inverness, IV3 8GY
SCOTLAND, UK

Dublin > Ireland

First Floor, Suite 6, The Mall,
Beacon Court, Sandyford,
Dublin 18
IRELAND

Aberystwyth > Wales

Harbour House, Y Lanfa
Aberystwyth, Ceredigion
SY23 1AS
WALES, UK

London > England

Token House Business Centre
11/12 Tokenhouse Yard
City of London, EC2R 7AS
ENGLAND, UK

Newcastle > England

Unit 5, Horsley Business Centre
Horsley
Northumberland, NE15 0NY
ENGLAND, UK

EUROPE

Strasbourg > France

1, rue Goethe
67000 Strasbourg
FRANCE

Nantes > France

1 rue du Guesclin
BP61905, 44019 Nantes
FRANCE

Halmstad > Sweden

c/o The Green House,
Forrest Estate
Dalry, Castle Douglas, DG7 3XS
SCOTLAND, UK

Ankara > Turkey [Agent]

re-consult
Bagi's Plaza
- Muhsin Yazıcıoğlu Cad. 43/14
TR / 06520 Balgat-Ankar
TURKEY

Paris > France

37-39 Avenue Ledru Rollin
75012 Paris
FRANCE

THE AMERICAS

New York > USA

63 Franklin St, Saratoga
Springs,
NY 12866, USA

Seattle > USA

Makers Space, 92 Lenora St,
Seattle, Washington
WA 98121, USA

Valparaiso > Chile [Agent]

Latwind Energías Renovables
Lautaro Rosas 366, Cerro Alegre
Valparaiso, CHILE

naturalpower.com

sayhello@naturalpower.com

No part of this document or translations of it may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording or any other information storage and retrieval system, without prior permission in writing from Natural Power. All facts and figures correct at time of print. All rights reserved. © Copyright 2015

