

moray offshore renewables ltd

Developing Wind Energy In The Outer Moray Firth

Environmental Statement

Modified Transmission Infrastructure for
Telford, Stevenson and MacColl Wind Farms

Technical Appendix 5.6 D

Route Survey Report



This document was produced by WYG on behalf of Moray Offshore Renewables Ltd



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Table of Contents

1	Introduction	4
	1.1 Background.....	4
	1.2 Report Structure.....	4
2	Proposed Development	5
	2.1 Site Description and Location	5
	2.2 Proposed Substation Equipment	5
3	Access Route Review	6
	3.1 Introduction.....	6
	3.2 Route Description.....	6
	3.3 Public Highway Constraints	7
4	Abnormal Load Management Plan	19
	4.1 Proposed Management Measures.....	19
	4.2 Advance Warning Signage.....	19
	4.3 Public Information.....	19
	4.4 Convoy System	20
5	Summary	21
	5.1 Conclusions.....	21

1 Introduction

1.1 Background

WYG has been commissioned by Moray Offshore Renewables Ltd (MORL) to produce a route feasibility study for a planning in principle application for the installation of the modified Transmission Infrastructure (TI). This study will focus on the onshore transmission infrastructure (OnTI) which includes the onshore aspects of the export cable and two substations to the south west of New Deer.

This study examines the transport and access issues relating to the movement of abnormal loads required to construct the proposed substations.

This report has been prepared in accordance with instructions from MORL on the above modified TI details. No liability is accepted for the use of all or part of this report by third parties.

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WYG has been commissioned to prepare this route feasibility study as a source of guidance. The report identifies the key points and issues associated with the route that may require remedial works to accommodate the predicted loads. The detailed designs of these remedial works, however, are beyond the agreed scope of works. It is the responsibility of the substation equipment suppliers (depending on contractual arrangements) to ensure that the access route from the POE to the site is fit for purpose and that appropriate consideration for all road users has been made in accordance with the relevant health and safety legislation and ruling transport requirements

1.2 Report Structure

Following this introductory chapter the report is structured as follows:

- **Chapter Two** describes the location of the modified OnTI;
- **Chapter Three** outlines the route option reviewed on the site visit along with areas of potentially significant constraints;
- **Chapter Four** details a framework for the Abnormal Load Traffic Management Plan; and
- **Chapter Five** provides a summary of the report and an outline of suggested further works, actions and recommendations for consideration by MORL.

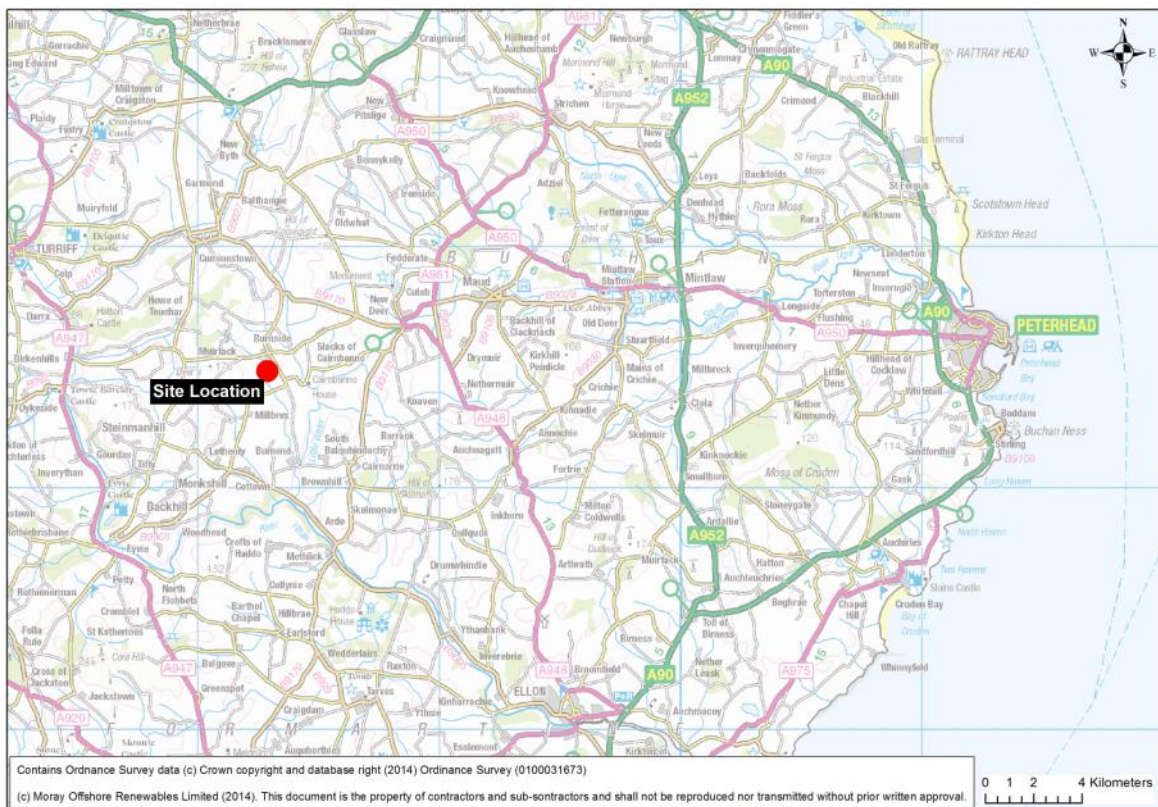
2 Proposed Development

2.1 Site Description and Location

The site is located approximately 5.5 km south west of New Deer, shown on Plate 2.1. It is bounded by the C29S to the east, an unclassified road to the south, and agricultural boundaries to the north and west.

The location of the proposed substations is illustrated in Plate 2.1

Plate 2.1: Proposed Location of Substations



2.2 Proposed Substation Equipment

MORL have yet to confirm the model of substation equipment, however it is understood that the worst case option is likely to be a 108 tonne equipment at a length of 7.8 m and a width of 3.75 m. With a load weight of approximately 108 tonnes, the delivery vehicle trailer will have ten axles to ensure that the maximum axle weight is limited to 11 tonnes. This component is classified as an Abnormal Indivisible Load (AIL) due to its weight, length, height and width when loaded. MORL have advised that all substation AIL components will fit within the envelope assessed.

WYG has assumed that the loads will generally follow the transport guidelines published by the equipment manufacturer.

3 Access Route Review

3.1 Introduction

A route review was undertaken by video survey in June 2014 from the port of Peterhead to the proposed substation site access via the identified route along the A950. An alternative route via the A90 southbound and Oldmeldrum was considered and, following discussions with Aberdeenshire Council, discounted due to the presence of a weak bridge located to the east of North Millbex.

3.2 Route Description

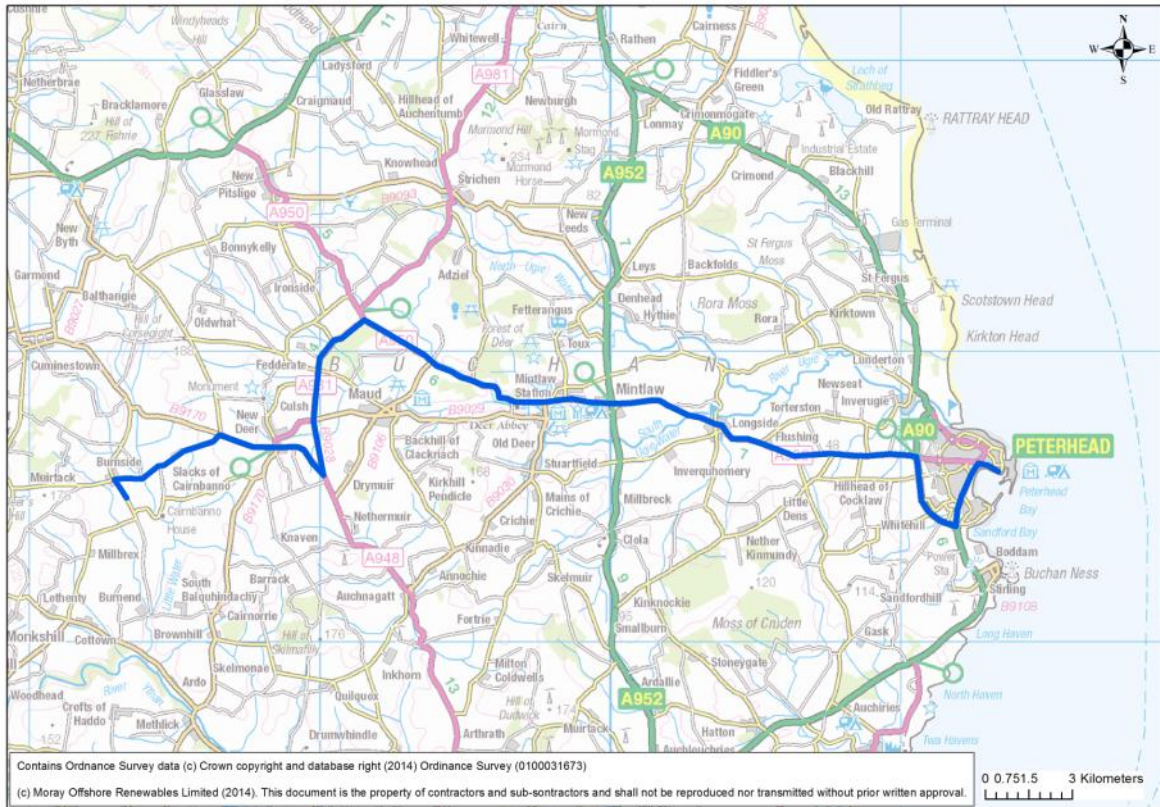
It is proposed that the loads will depart the port at Peterhead and approach the site from the A90 and A950, and then access the site via a new access junction on the unclassified road that runs south from Maryhill Farm.

The proposed access route from Peterhead to the site of the substations is as follows:

- Depart the port onto Bath Street;
- Turn left (west) at the junction with Kirk Street;
- Turn left (south) at the Kirk Street / South Road Roundabout and continue south on South Road;
- Turn right (west) at the A90 / A982 roundabout and continue west on the A90;
- Turn left (west) at the A90 / A950 roundabout and continue west on the A950;
- Turn left (southwest) at the A950 / A981 Lake House junction and continue southwest on the A981;
- Continue south on the B9028 from the A981 / B9029 / B9028 junction;
- Turn right (northwest) onto the A948, then continue west onto the B9170 from the A948 / A981 / B9170 junction;
- Turn left (southwest) onto the unclassified road at the junction with the B9170 at Hillhead Auchreddie; and
- Turn left (south) onto the unclassified road that lies south of Maryhill Farm and continue to the site access.

The access route is illustrated in Plate 3.1 overleaf.

Plate 3.1: Proposed AIL Route





3.3 Public Highway Constraints



An indicative risk review has been provided using a traffic light system. Red highlights a high risk, whilst green highlights a minor risk.



Table 3.1: Horizontal Constraints Summary



Identified	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Severity of Risk	Minimal <input checked="" type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
Description	Subject to swept path assessments, loads are likely to encounter issues at a single location: <ul style="list-style-type: none"> POI 19: Unclassified Road Junction South of Maryhill Farm Each site is described below in greater detail in the following sections and is illustrated by a photo where appropriate. The locations of the identified Points of Interest (POIs) can be found in Appendix A.		

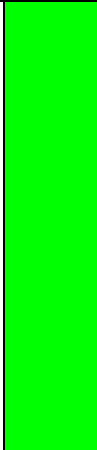

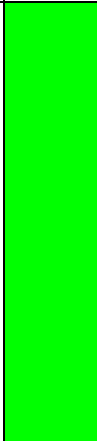

Table 3.2: Route Option Constraint Points



<p>POI No: 1</p>		<p>Peterhead Port Exit</p> 
<p>Details</p>		<p>The loads will exit from Peterhead Port and turn left (north) to join Bath Street, then continue west on Bath Street.</p> <p>An over-sail area is required on the inside footway as the load exits the port. No physical mitigation measures are required to facilitate this.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA001).</p>
<p>POI No: 2</p>		<p>Charlotte Street / Kirk Street Junction</p> 
<p>Details</p>		<p>The loads would turn left and continue west along Kirk Street.</p> <p>No mitigation measures are required.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA002).</p>



<p>POI No: 3</p>		<p>Kirk Street / A982 South Road Roundabout</p> 
<p>Details</p>		<p>The loads would turn left at the roundabout.</p> <p>No mitigation measures are required.</p> <p>Escorts to ensure that no other vehicles are allowed to impede the convoy.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA003).</p>
<p>POI No: 4</p>		<p>A982 / A90 Roundabout</p> 
<p>Details</p>		<p>The loads would turn right at the roundabout.</p> <p>No mitigation measures are required.</p> <p>Escorts to ensure that no other vehicles are allowed to impede the convoy.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA004).</p>



<p>POI No: 5</p>		<p>A90 / A950 Roundabout</p> 
<p>Details</p>	<p>The loads would turn left at the roundabout.</p> <p>No mitigation measures are required.</p> <p>Escorts to ensure that no other vehicles are allowed to impede the convoy.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA005).</p>	
<p>POI No: 6</p>		<p>A950 Series of Bends in Longside</p> 
<p>Details</p>	<p>The loads would continue west through Longside, travelling through a set of bends within the village.</p> <p>No mitigation measures are required.</p> <p>Escorts to ensure that no other vehicles are allowed to impede the convoy.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA006).</p>	



<p>POI No: 7</p>		<p>A950 / A952 Roundabout</p> 
<p>Details</p>		<p>The loads would proceed straight across the roundabout, located in the centre of Mintlaw.</p> <p>No mitigation measures are required.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA007).</p>
<p>POI No: 8</p>		<p>A950 West of Mintlaw</p> 
<p>Details</p>		<p>The loads would continue west on the A950.</p> <p>The tree canopy needs to be trimmed to provide a clear 5 m head height and the side vegetation cut back to improve forward visibility.</p> <p>The head height clearance is a responsibility of Aberdeenshire Council through the Roads (Scotland) Act and early engagement with the council to ensure that all the necessary licenses for trimming are in place.</p>


<p>POI No: 9</p>		<p>A950 / A981 Junction</p> 
<p>Details</p>	<p>The loads would turn left and continue west on the A981.</p> <p>An over-run area is required on the offside verge on the A981, where a load bearing surface should be laid. One road sign should be relocated outwith the over-run area.</p> <p>In addition, an over-sail area is required on the verge on the south side of the junction bellmouth. No physical mitigation works are required to facilitate this. Both mitigation elements are within the adopted road boundary.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA008).</p>	
<p>POI No: 10</p>		<p>A981</p> 
<p>Details</p>	<p>The loads continue west on the A981.</p> <p>The tree canopy needs to be trimmed to provide a clear 5 m head height and the side vegetation cut back to improve forward visibility.</p> <p>The head height clearance is a responsibility of Aberdeenshire Council through the Roads (Scotland) Act and early engagement with the council to ensure that all the necessary licenses for trimming are in place.</p>	

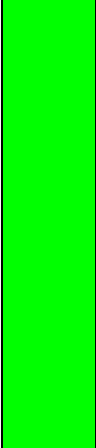

<p>POI No: 11</p>		<p>A981 Left / Right Bends North of Brucklay</p> 
<p>Details</p>		<p>The loads would continue west on the A981, passing through a series of bends.</p> <p>No mitigation measures are required.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA009).</p>
<p>POI No: 12</p>		<p>A981</p> 
<p>Details</p>		<p>The loads continue west on the A981.</p> <p>The tree canopy needs to be trimmed to provide a clear 5 m head height and the side vegetation cut back to improve forward visibility.</p> <p>The head height clearance is a responsibility of Aberdeenshire Council through the Roads (Scotland) Act and early engagement with the council to ensure that all the necessary licenses for trimming are in place.</p>

<p>POI No: 13</p>		<p>A981 / B9029 Junction</p> 
<p>Details</p>	<p>The loads continue south onto the B9029.</p> <p>The loads should undertake a contraflow manoeuvre of the splitter island on the northern approach of the A981 to avoid the need to remove any street furniture on the island.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA010).</p>	
<p>POI No: 14</p>		<p>B9028 / A948 Junction</p> 
<p>Details</p>	<p>The loads would turn right and continue north on the A948.</p> <p>No mitigation measures are required.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA011).</p>	

<p>POI No: 15</p>		<p>B9170 / C121B Junction at Hillhead of Auchreddie</p> 
<p>Details</p>		<p>The loads would turn left and continue west on the C121B.</p> <p>No mitigation measures are required.</p> <p>The width of the unclassified road between this junction and the junction at POI 19 generally varies between 4 m and 5 m, therefore traffic management will be required to hold oncoming between POI 15 and POI 19 to prevent it from impeding the convoy along the unclassified road.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA012).</p>
<p>POI No: 16</p>		<p>C121B Road Right / Left Bends at Grainhow</p> 
<p>Details</p>		<p>The loads would continue west on the C121B through the set of bends.</p> <p>No mitigation measures are required.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA013).</p>

<p>POI No: 17</p>		<p>C121B Road Bridge</p> 
<p>Details</p>	<p>The loads would continue west on the C121B.</p> <p>A structural assessment of the bridge is required at the detailed design stage, once the exact weights of the proposed loads are confirmed through the detailed design phase.</p>	
<p>POI No: 18</p>		<p>C121B Right Bend at Mill of Greens</p> 
<p>Details</p>	<p>The loads would continue west on the C121B.</p> <p>An over-run area is required in the verge to the north of the road, where a load bearing surface should be laid. One road sign should be relocated outwith the over-run area.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA014).</p>	

<p>POI No: 19</p>	<p>C121B / C29S Junction South of Maryhill Farm</p> 
<p>Details</p>	<p>The loads would turn left and continue south on the C29S.</p> <p>An over-run area is required on the north eastern verge and south eastern verge crossroads junction, as well as the field beyond the south eastern verge. An area of over-sail is also required in the same field.</p> <p>A load bearing surface should be laid in both of the over-run areas.</p> <p>Vegetation and tree foliage should be cut back on the north eastern verge.</p> <p>The wood and wire fence that bounds the field to the south east should be set back outwith the over-run and over-sail areas, which will require third party land. In addition, vegetation should be cleared from this area.</p> <p>Escorts to hold back all oncoming traffic to allow the loads to safely complete the manoeuvre. Traffic management is also required during the deliveries at this location to prevent oncoming traffic from impeding the convoy along the unclassified road between POI 19 and the site access junction (POI 20).</p> <p>A swept path assessment drawing can be found in Appendix B (SPA015).</p>

<p>POI No: 20</p>		<p>Site Access Junction</p> 
<p>Details</p>	<p>The loads would turn right into the site.</p> <p>An over-run area is required on the northern edge of the junction bellmouth, where a load bearing surface should be laid.</p> <p>Vegetation and tree foliage should be cut back on the north eastern verge.</p> <p>The wood and wire fence and stone wall that run along the field boundary should be removed for the creation of the site access and over-run area.</p> <p>In addition, vegetation should be cleared from this area.</p> <p>A swept path assessment drawing can be found in Appendix B (SPA016). Visibility splay drawings for the site access also be found in Appendix B (SPA017).</p>	

4 Abnormal Load Management Plan

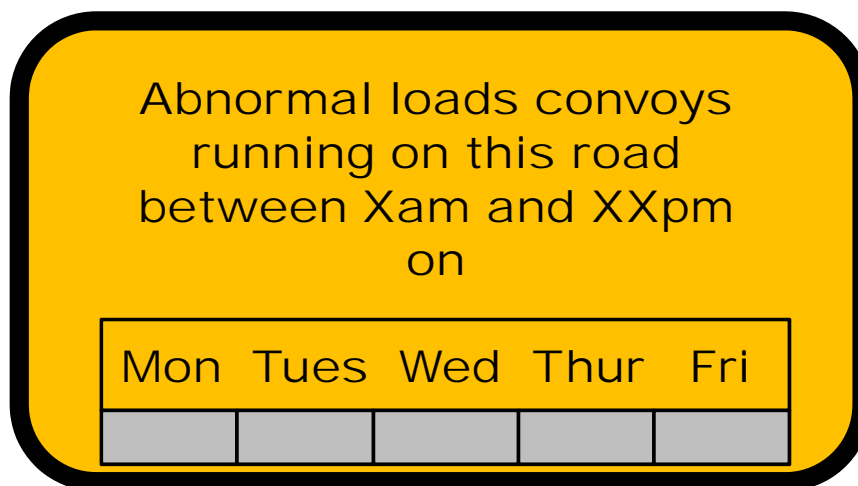
4.1 Proposed Management Measures

This chapter introduces a number of traffic management measures that could help reduce the impact of the AIL convoys. These measures are currently presented as indicative to be confirmed with the various roads agencies and police closer to the construction date.

4.2 Advance Warning Signage

Advance warning signs would be installed on the approaches to the affected roads network. Temporary signage advising drivers that abnormal loads will be operating could be erected along the B9170 and C class roads leading to the site. Signs such as the example shown in Plate 4.1 could be installed to help assist drivers.

Plate 4.1: Indicative Sign



The purpose of this type of signage is to help improve driver information and allow drivers of oncoming traffic to consider proceeding to the nearest convenient passing bay, or breaking their journey until the convoy has moved on.

4.3 Public Information

Information on the movement of abnormal load convoys would be provided to local media outlets to help assist the public. Information could be provided to local newspapers and radio stations that related to expected vehicle movements in the vicinity of New Deer. It is hoped that this level of information will make residents aware of convoy movements and help reduce any potential conflicts.

WYG also suggest that the developer may wish to consider producing a local newsletter for distribution to properties along the most affected sections of the proposed access routes, advising of convoy movements and the measures put in place to ensure the safe and efficient operation of the road network.

4.4 Convoy System

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

The abnormal load convoys should be no more than three HGVs long, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so.

The times at which the convoys would travel will need to be agreed with Police Scotland. Typical delivery times for similar projects has seen the early morning periods used in constrained sections, as traffic levels are generally lighter than those found in the afternoon.

A full convoy operation plan will be developed in consultation with Aberdeenshire Council, Transport Scotland and Police Scotland representatives along the route and agreed before deliveries commence to the site.

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

5 Summary

WYG has been commissioned by MORL to undertake a route feasibility investigation for the delivery of abnormal loads associated with the OnTI.

The route review has been undertaken from Peterhead port, via the A90, A950, A981, B9028, A948, B9170 and unclassified roads leading to the site access south of Maryhill Farm.

Access from Peterhead to the development has been assessed based on a 108 tonne substation equipment unit.

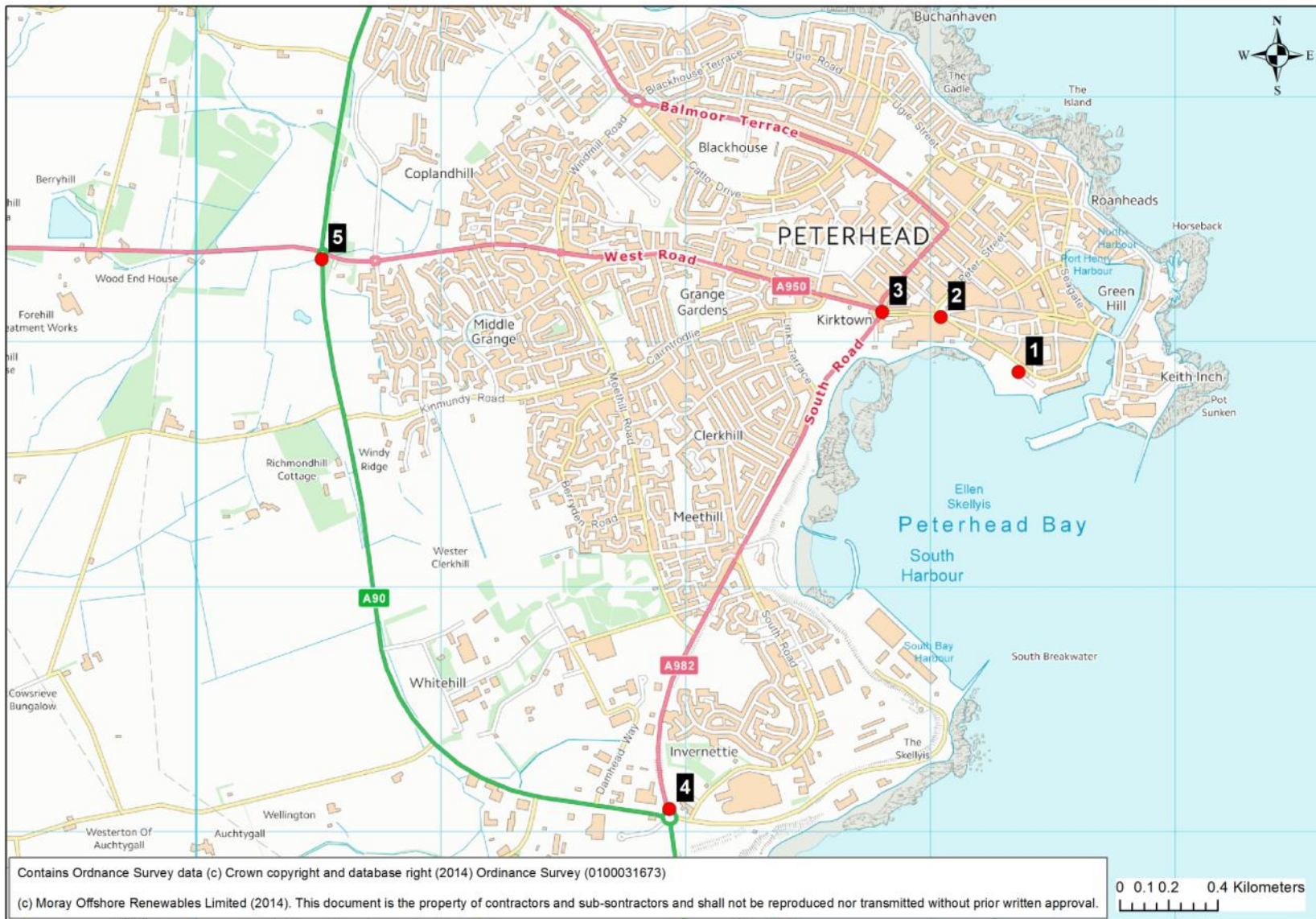
5.1 Conclusions

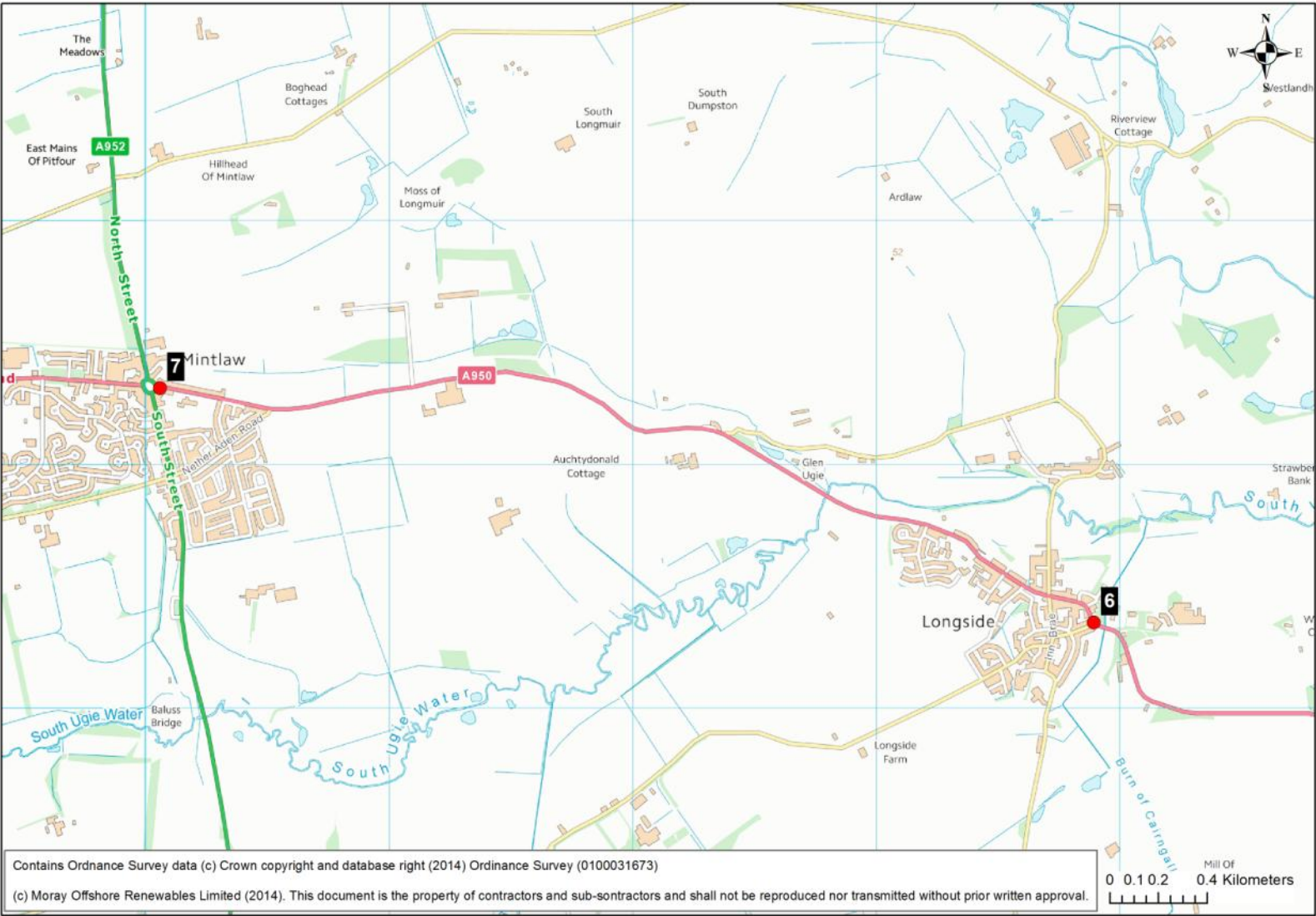
Swept path assessments have been completed outlining any mitigation measures that are required to allow the proposed loads to transit safely to site. WYG advise that subject to the mitigation works outlined being instigated and the results of land searches, the route from Peterhead port is deemed suitable for the delivery of the proposed components

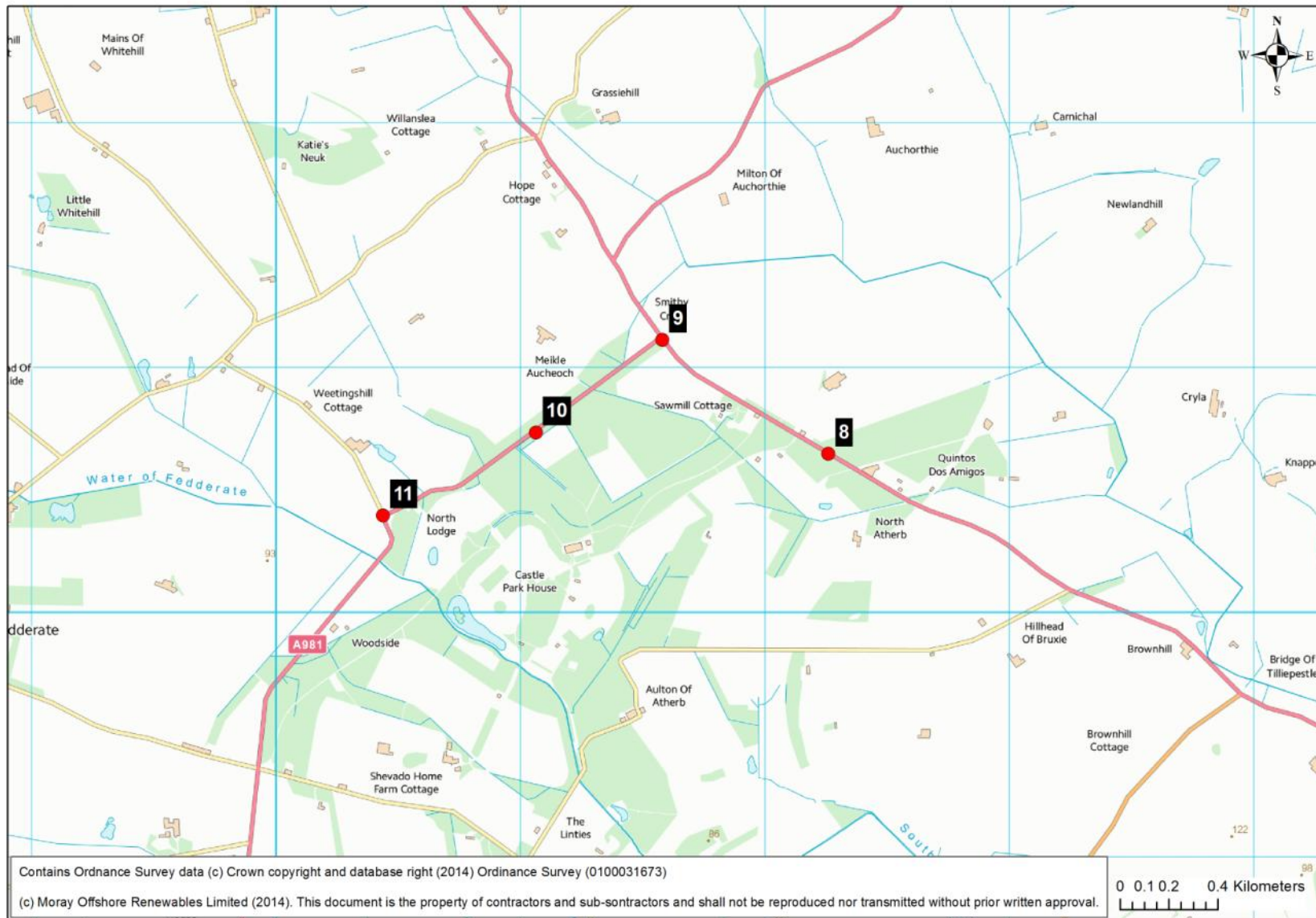


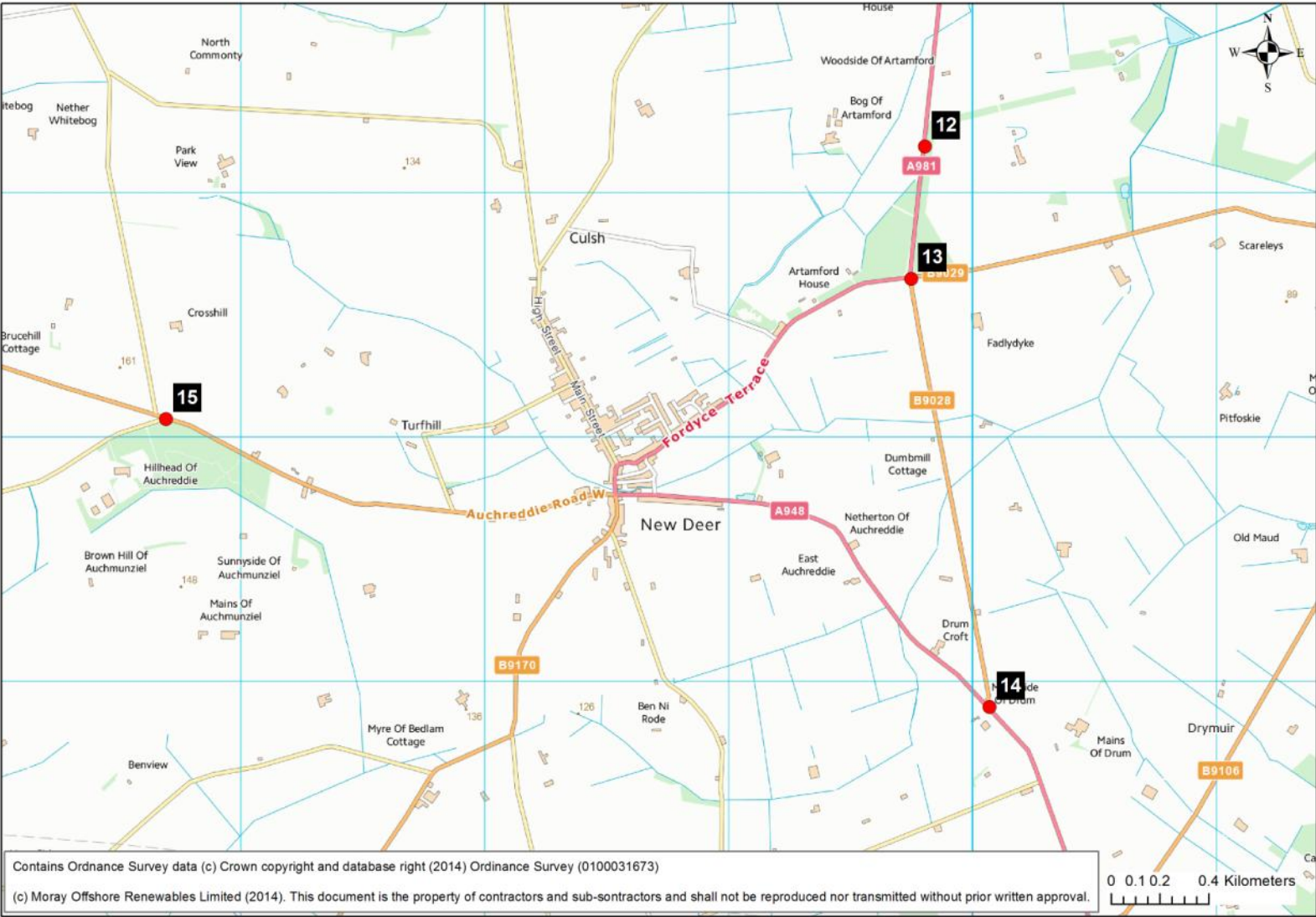
Appendix 1 – Points of Interest

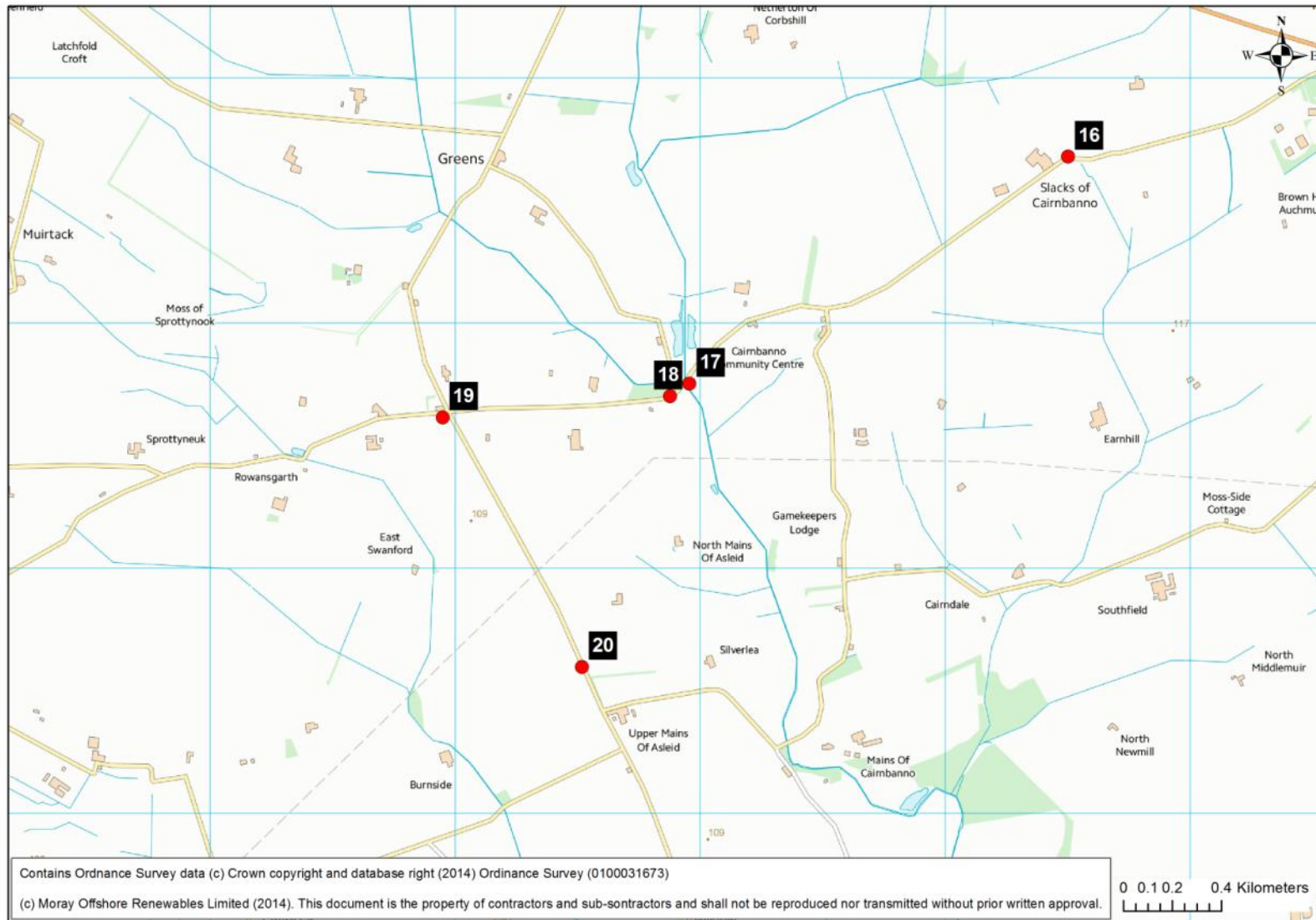




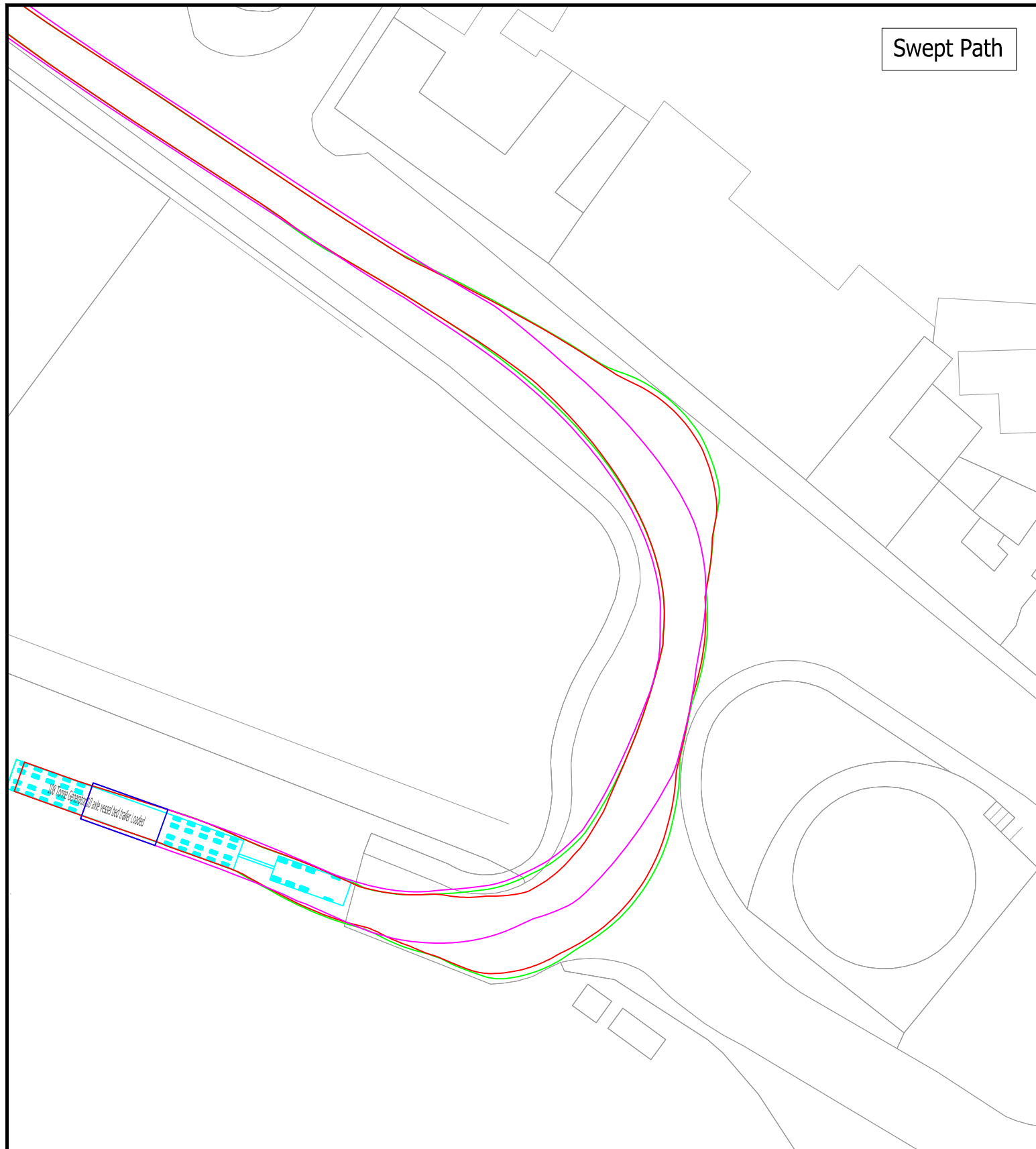




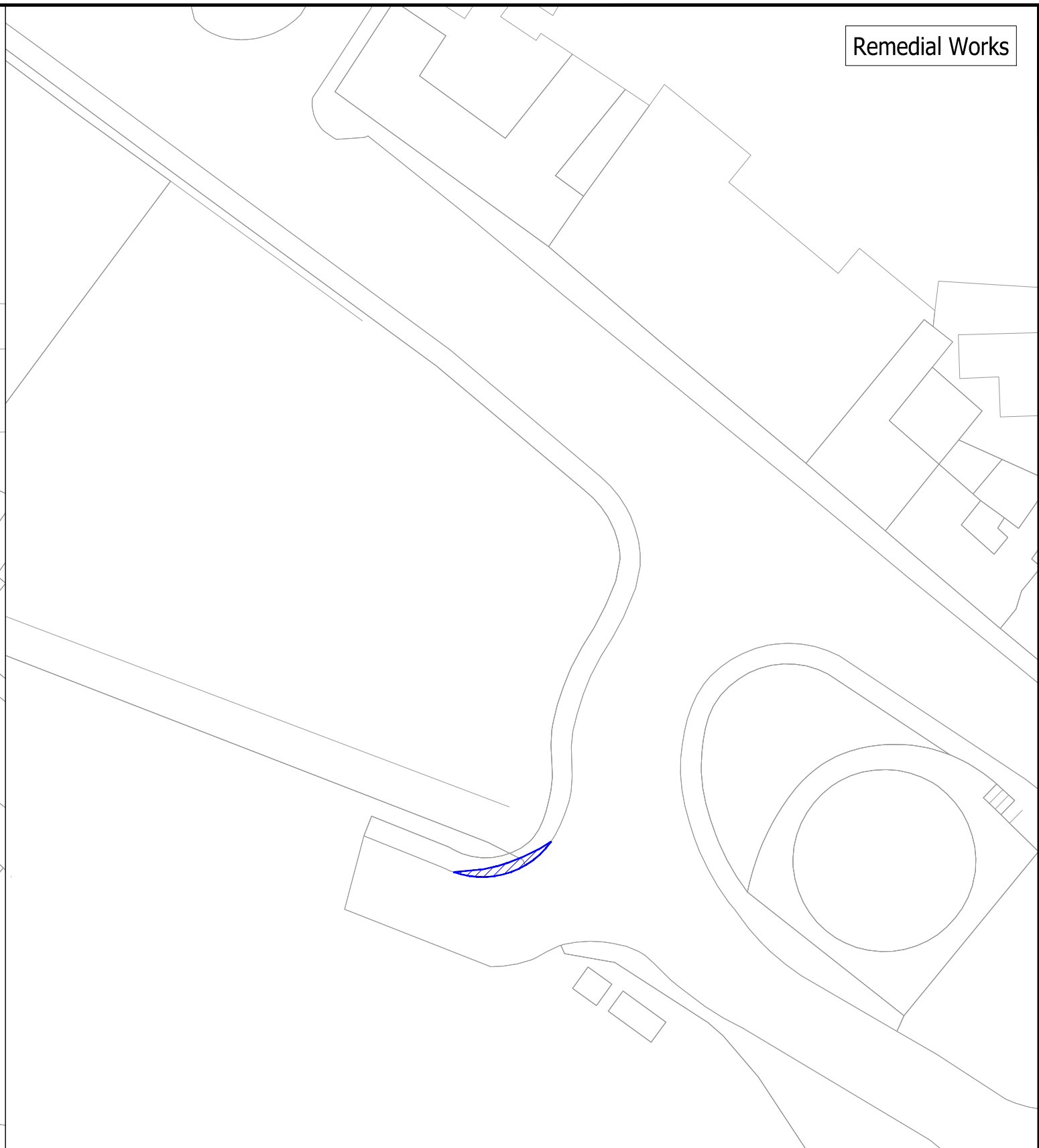




Appendix 2 – Swept Path Assessment



Swept Path

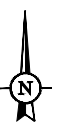


Remedial Works

Notes:
 1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



MORL Modified Onshore Transmission Infrastructure

LOCATION: Peterhead Port Exit POI: 1


COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3
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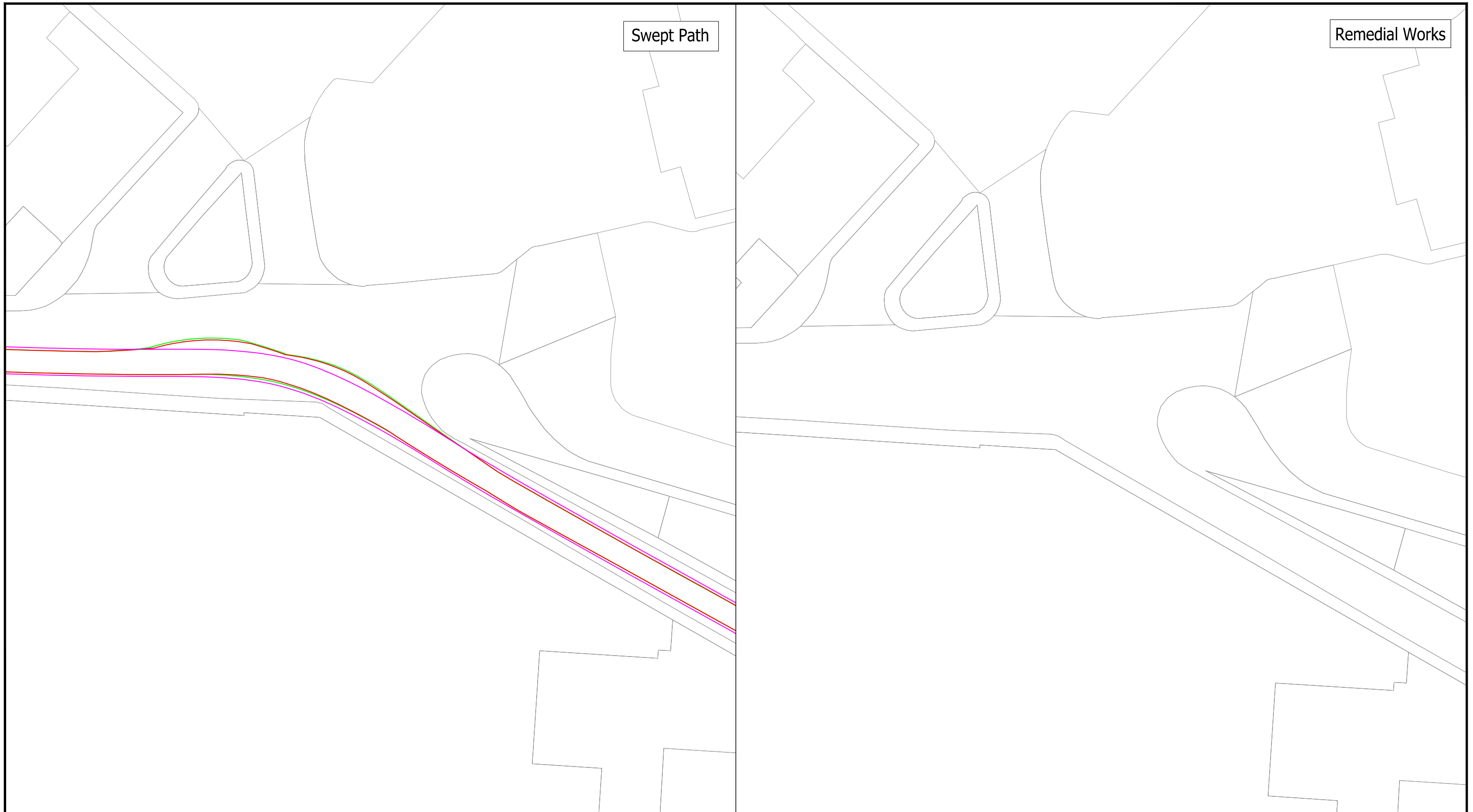


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 1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required




NO MITIGATION REQUIRED

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MORL Modified Onshore Transmission Infrastructure			
LOCATION:	Charlotte Street / Kirk Street Junction		POI: 2
COMPONENTS:			
Substation Generator Unit			
DRAWING TYPE:			
Swept Path Assessment & Required Remedial Works			
DRAWN:	CHECKED:	DATE:	SCALES:
CJ	GB	June 2014	1:500 @ A3

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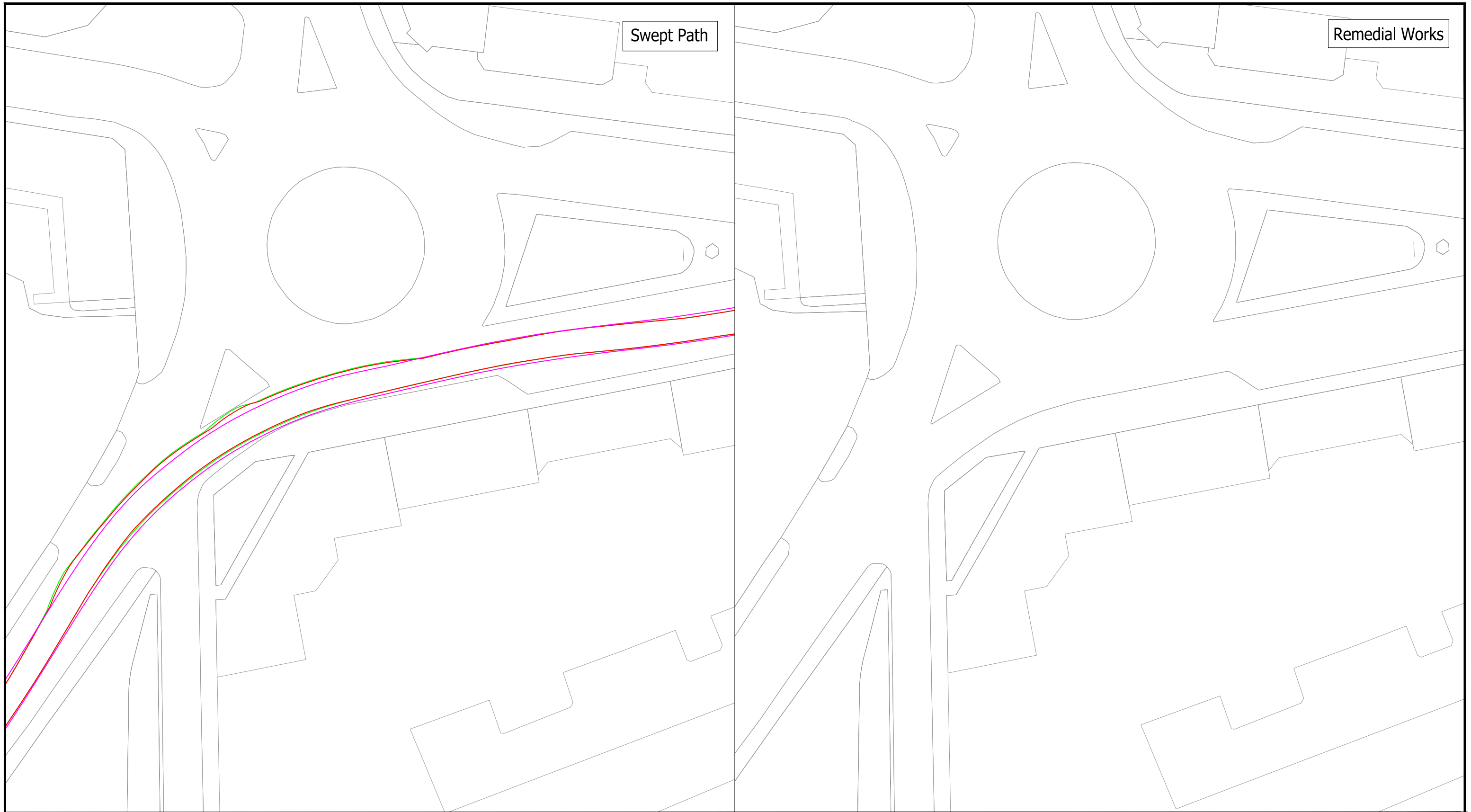
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PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
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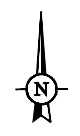


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
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- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: Kirk Street / A982 South Road Roundabout POI: 3

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

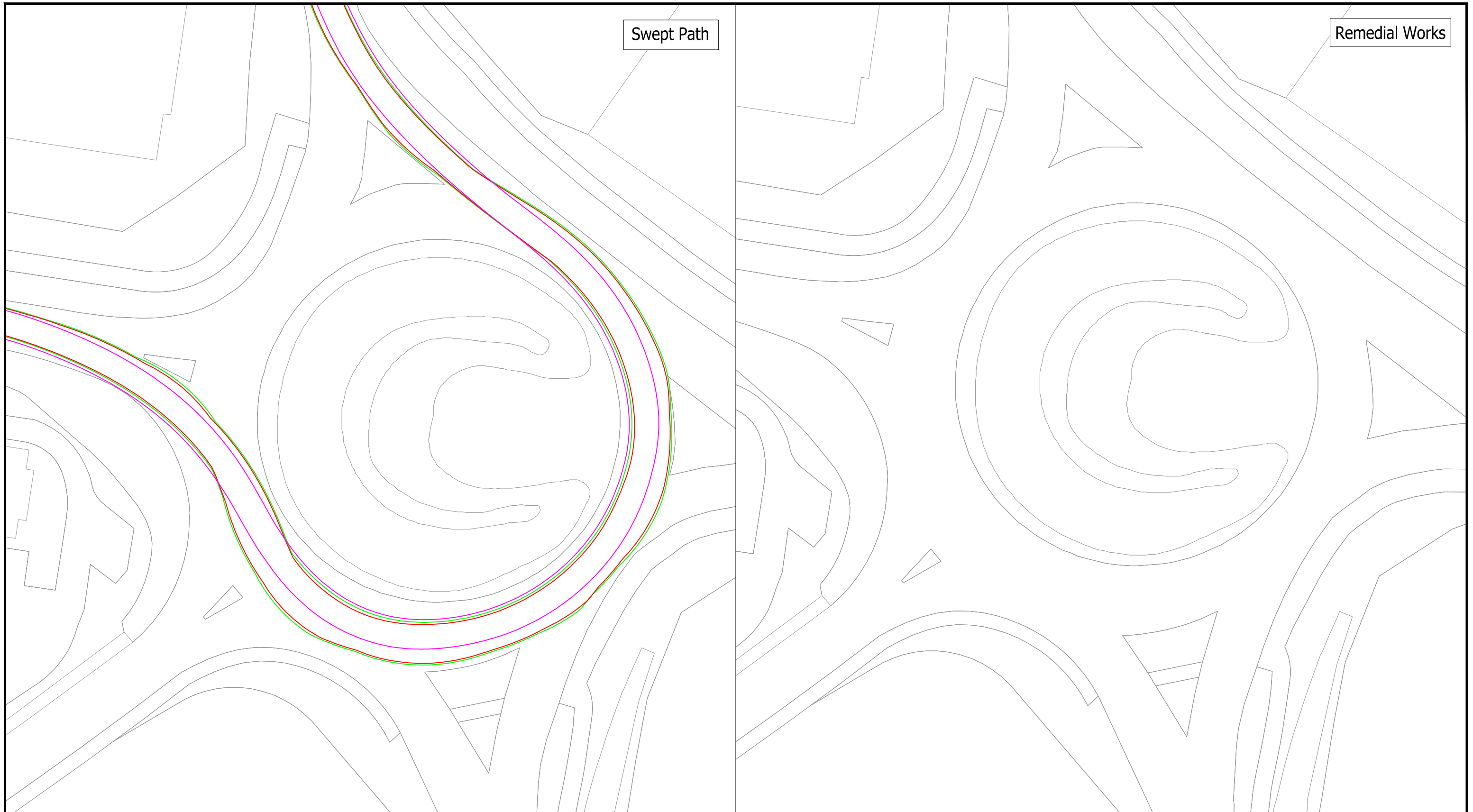
DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3
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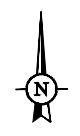
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Notes:
 1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
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- Over-run Required



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MORL Modified Onshore Transmission Infrastructure				moray offshore renewables ltd	
LOCATION: A982 / A90 Roundabout			POI: 4		
COMPONENTS: Substation Generator Unit					
DRAWING TYPE: Swept Path Assessment & Required Remedial Works					
DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3		
PROJECT NUMBER: A087928		DRAWING NUMBER: SPA004		REVISION: .	

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Swept Path

Remedial Works

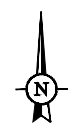
This drawing is for illustrative purposes only and is not a construction drawing.

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: A90 / A950 Roundabout POI: 5

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3
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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA005	REVISION: .
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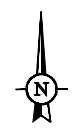


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

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- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: **A950 Series of Bends in Longside** POI: **6**

COMPONENTS: **Substation Generator Unit**

DRAWING TYPE: **Swept Path Assessment & Required Remedial Works**

DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:1000 @ A3
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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA006	REVISION: .
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Swept Path

Remedial Works

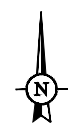


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: A950 / A952 Roundabout POI: 7

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA007	REVISION: .
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Swept Path

Remedial Works

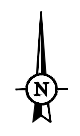


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



MORL Modified Onshore Transmission Infrastructure

LOCATION: A950 / A981 Junction POI: 9

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3
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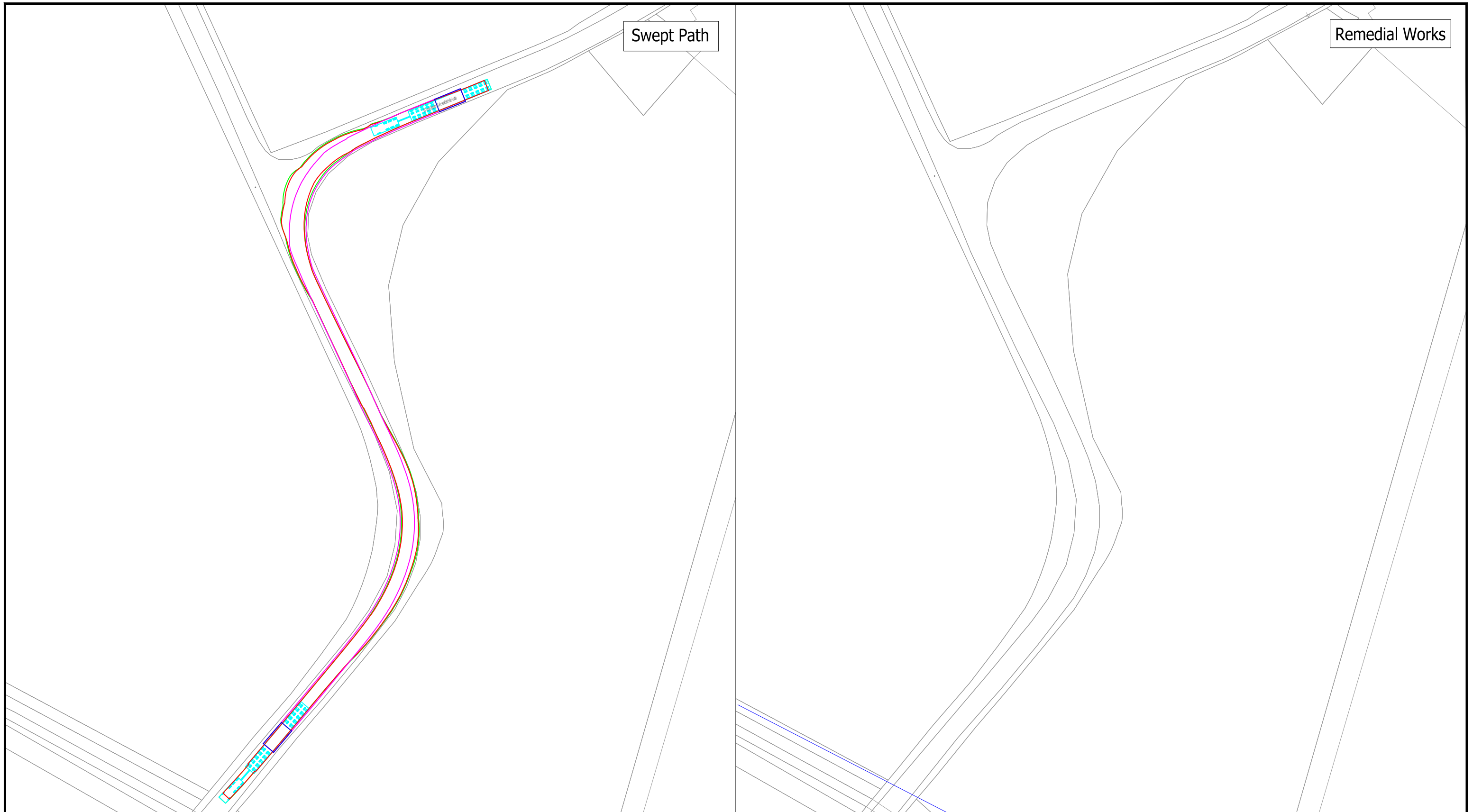
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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA008	REVISION: .
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Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required




NO MITIGATION REQUIRED

MORL Modified Onshore Transmission Infrastructure			
LOCATION:	A981 Left / Right Bends North of Brucklay		POI: 11
COMPONENTS:			
Substation Generator Unit			
DRAWING TYPE:			
Swept Path Assessment & Required Remedial Works			
DRAWN:	CHECKED:	DATE:	SCALES:
CJ	GB	June 2014	1:1000 @ A3

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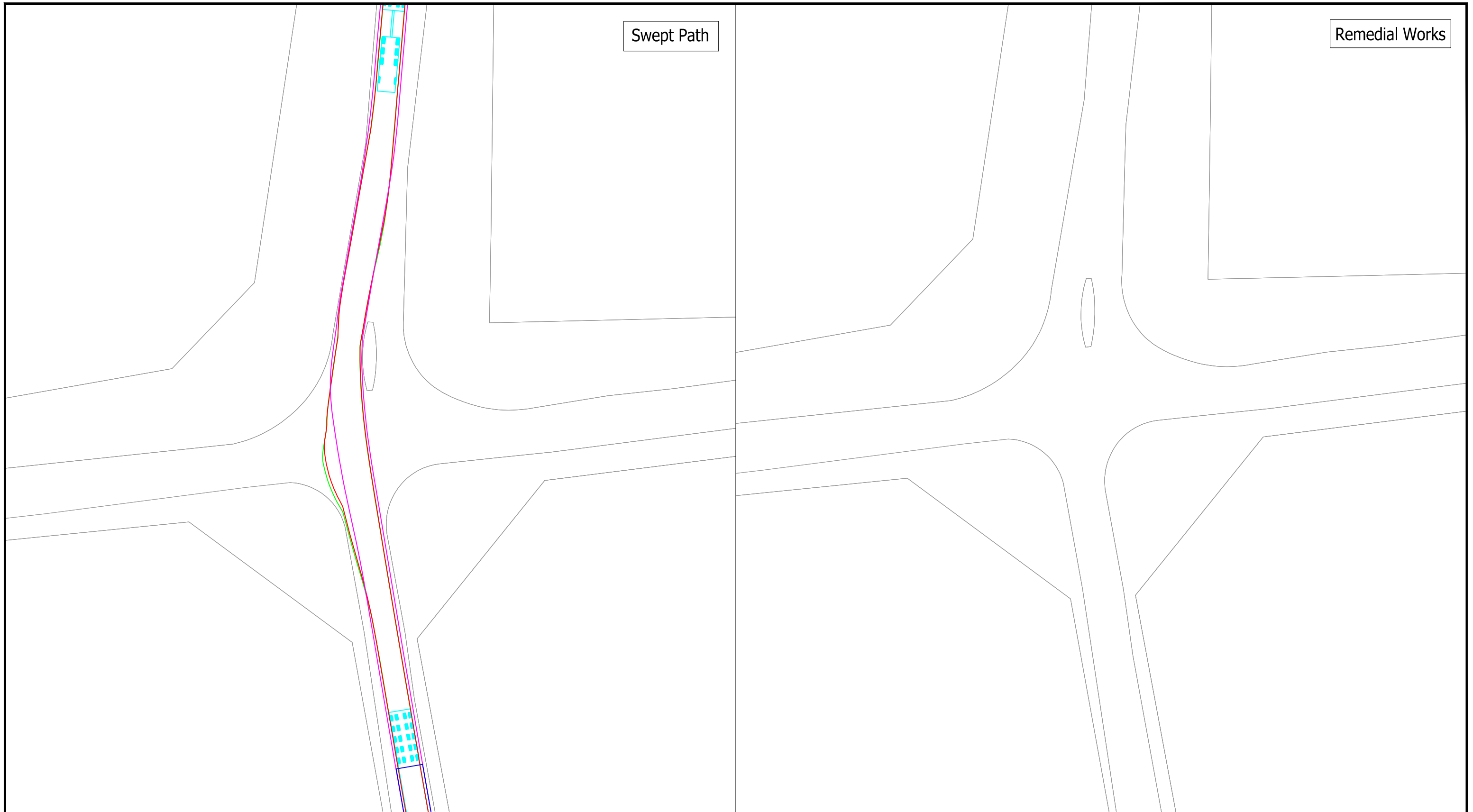


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PROJECT NUMBER:	DRAWING NUMBER:	REVISION:
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Swept Path

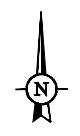
Remedial Works

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: A981 / B9029 POI: 13

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA010	REVISION: .
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Swept Path

Remedial Works

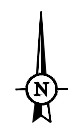


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



MORL Modified Onshore Transmission Infrastructure

LOCATION: B9028 / A948 Junction POI: 14

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

DRAWN: CJ	CHECKED: GB	DATE: June 2014	SCALES: 1:500 @ A3
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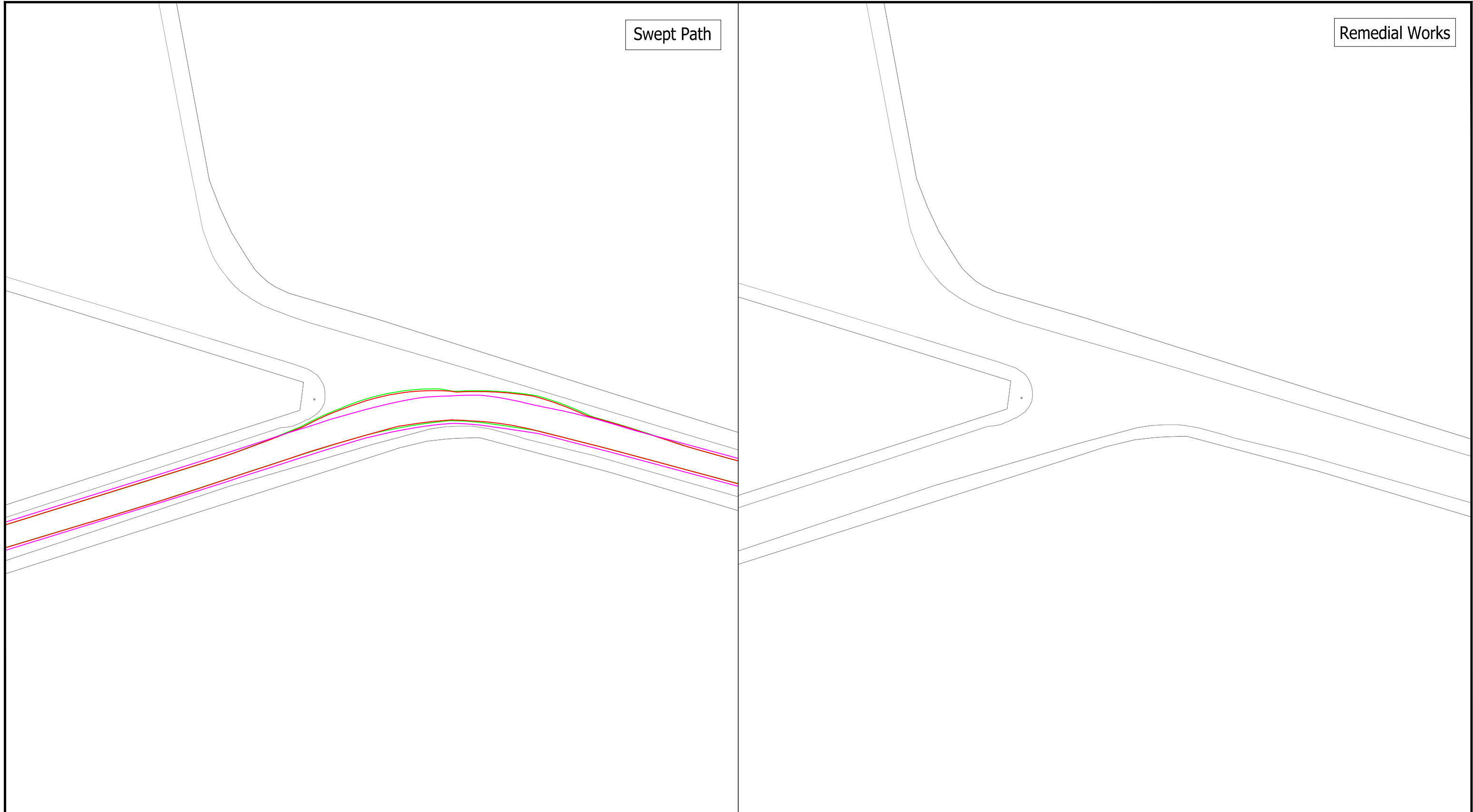
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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA011	REVISION: .
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Swept Path

Remedial Works



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



NO MITIGATION REQUIRED

MORL Modified Onshore Transmission Infrastructure

LOCATION: B9170 / C121B Junction at Hillhead of Auchreddie POI: 15

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

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Swept Path

Remedial Works

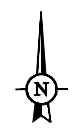


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



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MORL Modified Onshore Transmission Infrastructure

LOCATION: **C121B Right / Left Bends at Grainhow** POI: **16**

COMPONENTS: **Substation Generator Unit**

DRAWING TYPE: **Swept Path Assessment & Required Remedial Works**

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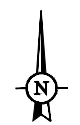
PROJECT NUMBER: A087928	DRAWING NUMBER: SPA013	REVISION: .
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Notes:
 1. This is not a construction drawing and is intended for illustrative purposes only.

Key:


- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Over-sail Required
- Over-run Required



MORL Modified Onshore Transmission Infrastructure			
LOCATION:	C121B Right Bend at Mill of Greens		POI: 18
COMPONENTS: Substation Generator Unit			
DRAWING TYPE: Swept Path Assessment & Required Remedial Works			
DRAWN:	CHECKED:	DATE:	SCALES:
CJ	GB	June 2014	1:1000 @ A3

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Swept Path

Remedial Works

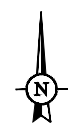
Load bearing surface to be laid in over-run area
Trees & vegetation to be cut back

Load bearing surface to be laid in over-run area
Fence to be set back & vegetation to be cleared.
Third party land required.

Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:



MORL Modified Onshore Transmission Infrastructure

LOCATION: C121B / C29S Junction South of Maryhill Farm POI: 19

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

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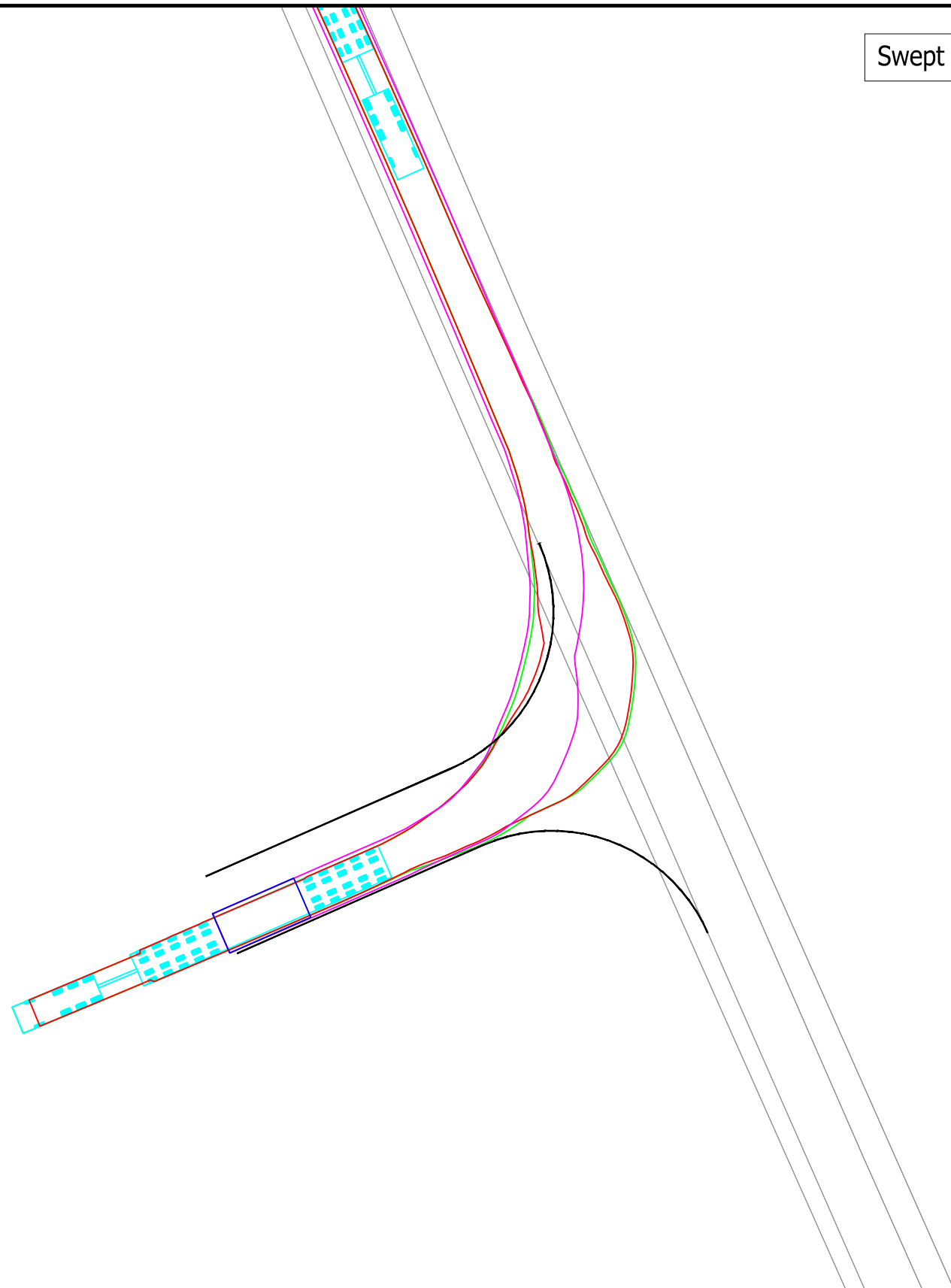
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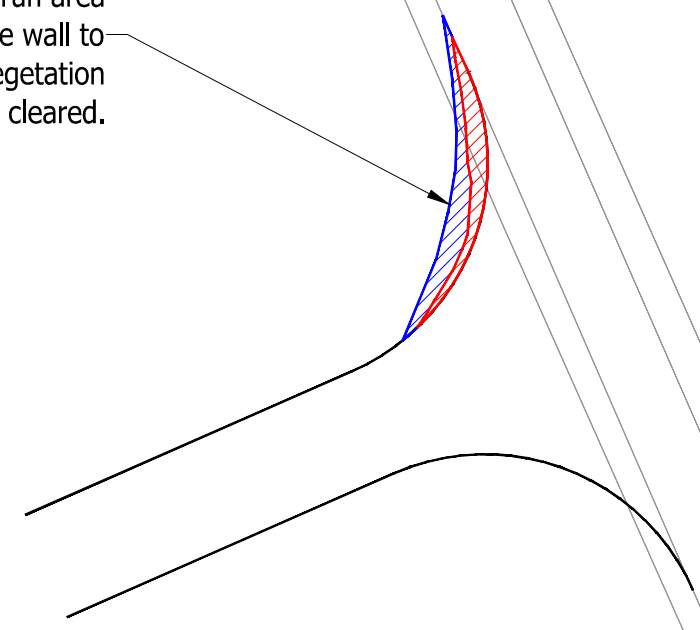
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Swept Path

Remedial Works



Load bearing surface to be laid in over-run area
 Fence & stone wall to be removed. Vegetation to be cleared.



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

- Vehicle Swept Path
- Wheel Swept Path
- Load Swept Path
- Ordnance Survey Mapping
- Site Access Junction
- Over-sail Required
- Over-run Required



MORL Modified Onshore Transmission Infrastructure

LOCATION: Site Access Junction

POI: 20

COMPONENTS: Substation Generator Unit

DRAWING TYPE: Swept Path Assessment & Required Remedial Works

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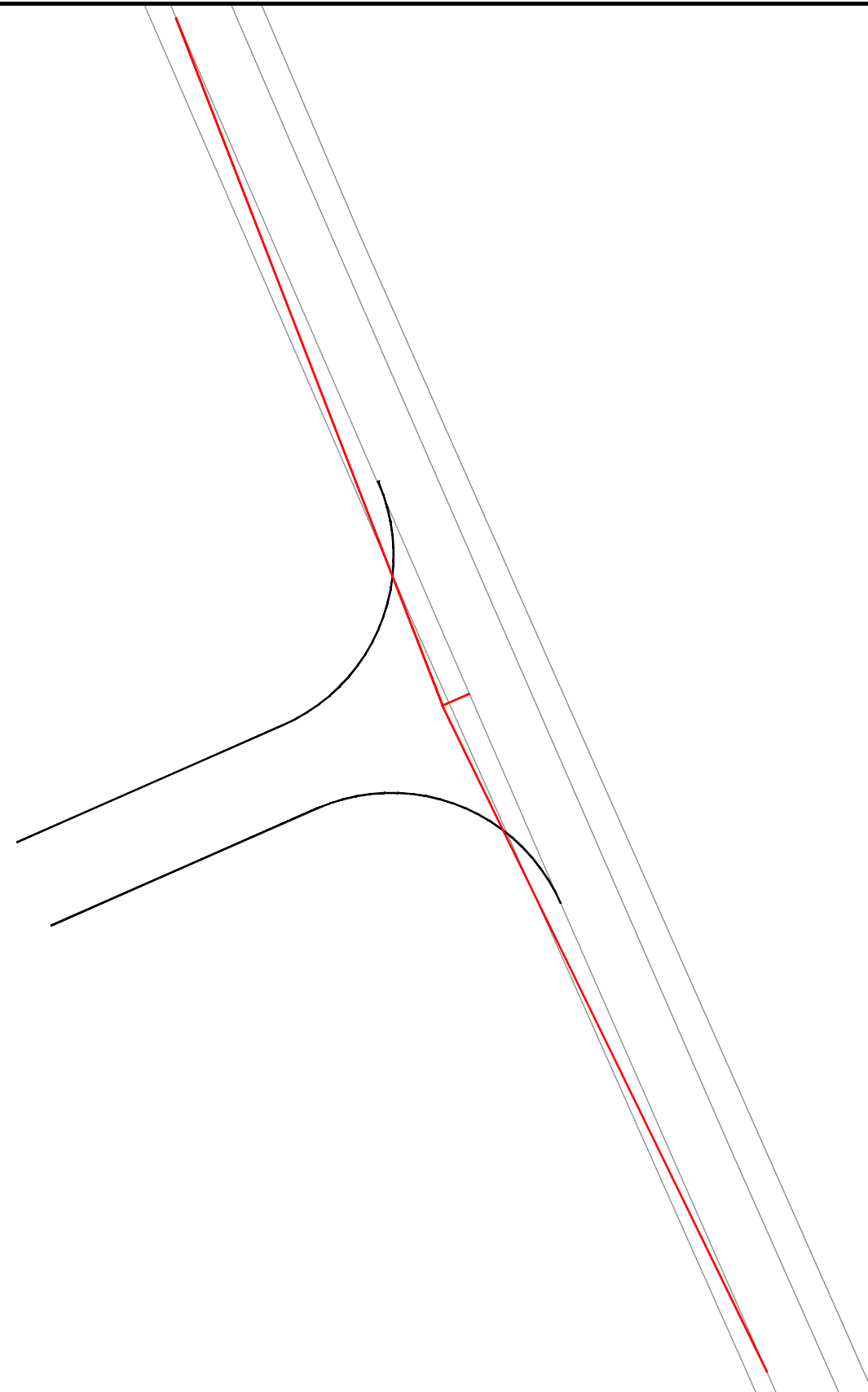
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PROJECT NUMBER: A087928	DRAWING NUMBER: SPA016	REVISION: .
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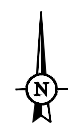


Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.

Key:

-  Ordnance Survey Mapping
-  Site Access Junction
-  2.4m x 60m Visibility Splays



MORL Modified Onshore Transmission Infrastructure

LOCATION: **Site Access Junction** POI: **20**

COMPONENTS: **Substation Generator Unit**

DRAWING TYPE: **Indicative 2.4m x 60m Visibility Splays**

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