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Improving the A47

A47/A11 Thickthorn junction improvement

Public consultation



March 2017

Improving the A47 corridor:

We are improving the A47 around Peterborough, Norwich and Great Yarmouth to create better, safer journeys.

1. Introduction

About us

Highways England is the government owned company charged with operating, maintaining and improving England's motorways and major A roads. Formerly the Highways Agency, we became a government owned company in 2015.

About the A47 corridor improvement scheme

In 2014 the government published the Road Investment Strategy (RIS) setting out a £15.1 billion investment for 2015-2020 to improve journeys on England's motorways and major A roads.

The RIS includes a package of 6 schemes to improve journeys on the 115 mile section of the A47 between Peterborough and Great Yarmouth. Together, the proposals will relieve congestion and improve the reliability of journey times for drivers.

The A47 trunk road forms part of the strategic road network and provides for a variety of local, medium and long distance trips between the A1 and the east coast. The corridor connects the cities of Norwich and Peterborough, the towns of Wisbech, Kings Lynn, Dereham, Great Yarmouth and Lowestoft and a succession of villages in what is largely a rural area.

The schemes include converting almost 8 miles of single carriageway to dual carriageway and making improvements to junctions across the route.

The 6 schemes are:

- A47 Wansford to Sutton dualling
- A47 Guyhirn junction improvement
- A47 North Tuddenham to Easton dualling
- A47 Blofield to North Burlingham dualling
- A47/A11 Thickthorn junction improvement
- A47 Great Yarmouth junction improvements (Formerly A47/A12 junction enhancements)

We are consulting on all 6 schemes at the same time. **In this brochure, you can find out more about the A47/A11 Thickthorn junction improvement.** To find out more about the other schemes or request a copy of the consultation brochure, please visit:



Online:

www.highways.gov.uk/a47improvement



Email:

A47A11ThickthornJunctionRIS@highwaysengland.co.uk

In total, over £2 billion is being invested in the East of England to create better and safer journeys across the region.

We want your views

We are consulting on our proposal to improve the A47/A11 Thickthorn junction. Our proposal will create a better junction that will relieve congestion, provide extra traffic capacity and improve safety.

The assessment to date has considered a significant number of options for the improvement of the existing junction. This work has led us to seek views on a proposed option.

This consultation provides you with an opportunity to view, discuss and help shape our proposal. This will help us understand what is important to our customers and local communities and informs the selection of a preferred option.

There will be a further public consultation before a formal application for a Development Consent Order is made.

The consultation will run for 6 weeks from Monday 13 March to Friday 21 April 2017.

2. Need for the scheme

The A47/A11 Thickthorn junction is located on the south-western edge of Norwich, and provides access to the A47 via the A11 and B1172 Norwich Road for Eaton, Cringleford, Hethersett and Wymondham.

The A47 connects Norwich with Great Yarmouth to the east and Peterborough to the west, via King's Lynn and Wisbech. The A11 is the main route connecting Norwich with Thetford, Cambridge and London to the M11 and A14. The A47/A11 Thickthorn junction is therefore important for commuter, business and commercial traffic, and for both short and long distance trips.

Studies have identified the unsuitability of the current junction layout to accommodate the dominant movements through the junction on the A11 and between the A11 northbound to A47 eastbound and the A47 westbound and A11 southbound carriageways during peak hours. This is predicted to worsen in future years due to growth in long distance traffic, and growth from the large local residential developments in Hethersett and Cringleford.

In developing this scheme, we aim to address these issues by upgrading the existing junction to a high quality interchange.

The improvements will support economic growth by making journeys safer and more reliable.

3. Scheme objectives

The objectives of the proposed A47/A11 Thickthorn junction improvement scheme are:

■ Supporting economic growth

Contributing to sustainable economic growth by supporting employment and residential development opportunities. The scheme aims to reduce congestion-related delay, improve journey time reliability and increase the overall capacity of the A47.

■ A safe and serviceable network

Improving road safety for all road users by designing to modern highway standards appropriate for a major A road.

■ A more free-flowing network

Increasing the resilience of the junction in coping with incidents such as collisions, breakdowns, maintenance and extreme weather. The improved A47/A11 Thickthorn junction will be more reliable, reducing journey times and providing capacity for future traffic growth.

■ Improved environment

We will protect the environment by minimising adverse impacts and where possible, improving the environmental effects of transport on those living along the existing A47 and A11. We will do this by reducing the impact of new infrastructure on the natural and built environment.

■ An accessible and integrated network

Ensuring the proposals take into account local communities and access to the road network, providing a safer route between communities for cyclists, pedestrians, equestrians and other non-motorised groups.

■ Value for money

Ensuring that the scheme is affordable and delivers good value for money.

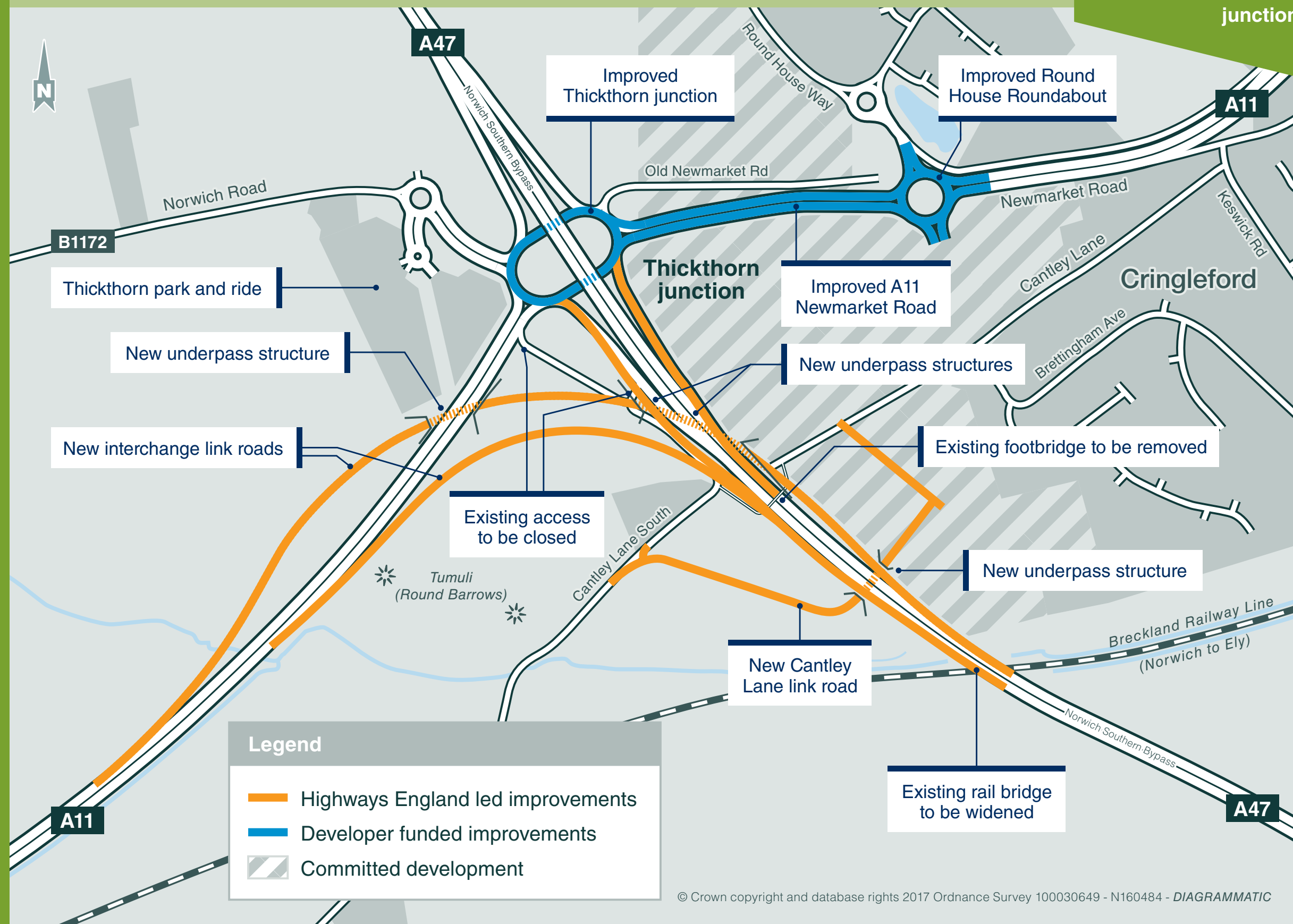
4. Our proposed option

Our proposed option would:

- Create new free-flow links, in both directions, between the A11 and the A47 eastern link.
- Improve the existing A11 signalised junction.
- Improve the existing A11 Round House Roundabout.
- Reconnect Cantley Lane with Cantley Lane South.

This option would re-route traffic away from the existing A47/A11 Thickthorn junction which would release capacity for local traffic movements.

A number of potential alternative options were considered as part of the scheme development process during 2016. These options did not perform well against the objectives therefore were not progressed any further.



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5. Respecting the environment

We will safeguard and protect the local environment. We are surveying the local surroundings, and the results will be used to decide ways to both reduce any negative effects and contribute towards improving the local environment. We will plan any construction to minimise the effects on the environment.

It is highly likely that we will need to acquire land adjacent to the existing junction to accommodate the improvement. The proposed option passes predominantly through open farm land and some woodland.

Please see the environmental constraints plan for details.



Landscape

To reduce the visual impact of the scheme, we will plant areas of trees, shrubs and grassland. Where possible, we will use native species that are local to the area.

Wildlife and nature conservation

The study area for the scheme includes a range of habitats that support different plant and wildlife species. We are currently carrying out ecological surveys in the area to identify any evidence of protected species, including bats, badgers, water voles, great crested newts, white-clawed crayfish, reptiles and birds.

If we find any evidence of protected species, we will ensure that these are considered as part of the design stage and that there are appropriate mitigation measures in place to reduce any impacts of the scheme. This work will be carried out in consultation with Natural England and Norfolk Wildlife Trust as well as local interest groups.

The design will allow for habitat replacement and create opportunities for new habitats.

Historic environment

The area contains a variety of features of cultural heritage importance, including a scheduled ancient monument, archaeological sites and listed buildings. We will include various measures in the scheme design to reduce the impacts on these areas.

Air quality

Our initial air quality assessment shows that there will be no significant changes in air quality for the residential properties in the area. The majority of residential areas are expected to experience improved air quality as a result of the scheme, due to improved traffic flows.

There may be some worsening in air quality for the properties nearest to the junctions in particular for the existing properties along Cantley Lane South. We will monitor the effects on air quality in the area with the aim of meeting national air quality objectives.

Noise

Our initial noise assessment shows that there will be no significant changes in noise in the built-up areas near the junction. We will use low noise road surfacing and the detailed design will include further assessments to determine whether any additional noise mitigation, such as barriers, is required.

We will pay particular attention to the properties nearest to the proposed junction.

Water

We will provide appropriate drainage to deal with the surface water from the road. Existing watercourses and groundwater will be protected with balancing ponds, pollution control devices and water treatment features.

6. Next steps

Preferred route

This consultation is your opportunity to express your views on the proposal at an early stage of development and ahead of the selection of a preferred route. After the consultation ends, we will publish a report summarising our findings. From this we will make recommendations for further development of the scheme.

Subject to the findings of the consultation, a preferred route announcement will be made in late 2017 and the pre-application stage of the development consent process will begin.

Development Consent Order application

This scheme is classed as a Nationally Significant Infrastructure Project under the Planning Act 2008. As such, we are required to make an application for a Development Consent Order in order to obtain permission to construct the scheme. The application will be made to the Planning Inspectorate who will examine the application in public hearings and then make a recommendation to the Secretary of State for Transport who will decide on whether or not the project will go ahead.

We currently intend to make our application by summer 2018. Prior to the application, you will have another opportunity to have your say with a public consultation on our preliminary design proposals.

More information about the Development Consent Order process can be found on the Planning Inspectorate's website:

<http://infrastructure.planningportal.gov.uk>

7. What happens next?

We are at the early stages of this project and there are many stages to come. This includes another opportunity to have your say before a final decision is made.

Your views are important to us. We will consider all responses to this consultation. Your feedback will help inform the decision on the preferred solution.

Below are the key milestones and the steps we plan to take before we start construction:

Summer 2017

We will analyse the consultation responses and undertake additional technical work

Autumn 2017

If there is a compelling case for the scheme and a suitable option is selected, a preferred route will be announced

Autumn 2017

We will engage with communities, land owners and stakeholders on the preferred route and design

Winter 2017/18

Statutory public consultation on the preferred route

Summer 2018

Submit an application for a Development Consent Order (Planning Application)

Winter 2019/20

Decision on the Development Consent Order (estimated)

Construction starts*

(estimated)

*Construction on the A47 corridor improvement is likely to start in spring 2020. We may need to sequence the improvements along the route to manage the disruption to customers and local communities.



8. Share your views

This is the first stage in our consultation process and we would like to know what you think about the proposed option. We will listen to your views and publish a Consultation Report to inform the selection of a preferred route.

Join us at one of our events. Members of our team will be on hand to answer your questions.

Public information events

Venue	Date	Time
Willow Centre, Cringleford	Saturday 25 March	10am - 2pm
Jubilee Youth Club, Hethersett	Monday 27 March	3pm - 8pm
Willow Centre, Cringleford	Tuesday 28 March	3pm - 8pm

9. How to respond

Please only respond using one of the following channels, which have been set up for the specific purpose of this consultation:



Online: www.highways.gov.uk/a47Improvement



Email: A47A11ThickthornJunctionRIS@highwaysengland.co.uk



Post: You can write to us or post paper copy responses to:
FREEPOST A47 Thickthorn junction

We cannot accept responsibility for ensuring responses that are sent to addresses other than those described above are included in the consultation process. All responses must include at least your postcode. Please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

The final date we will accept consultation responses will be no later than 11:59pm on Friday 21 April 2017.

For further information about the scheme or this consultation, please call the Highways England Customer Contact Centre on **0300 123 5000**.

Confidentiality and data protection

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want any information that you provide to be treated as confidential, please be aware that under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

For more information about what information can be requested under the FOIA, see:

<https://ico.org.uk/for-the-public/official-information>

Highways England will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.



If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.

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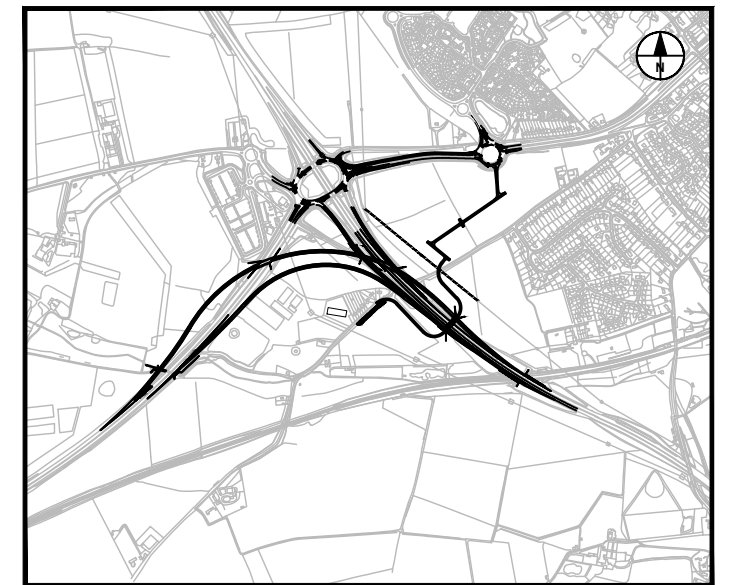
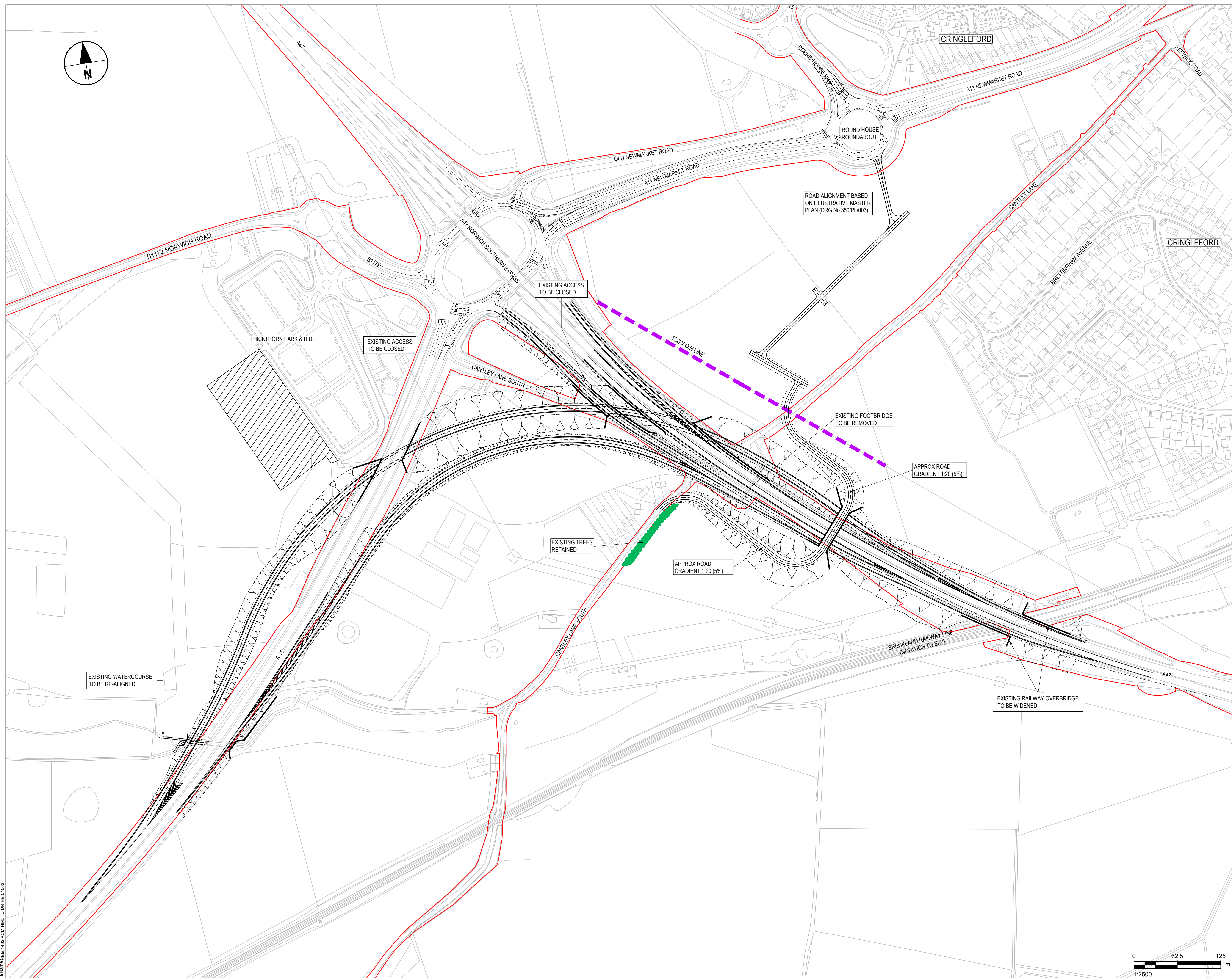
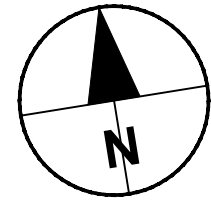
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Appendix N – Local Road Option Drawings





KEY LOCATION PLAN
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- KEY**
- POTENTIAL FUTURE PARK & RIDE EXPANSION
 - EXISTING HIGHWAY BOUNDARY

Revision Details	By	Date	Suffix

Purpose of issue: **INFORMATION**

Client: Highways England
Woodlands
Manton Lane
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MK41 7LW

Project Title: **A47/A11 THICKTHORN INTERCHANGE IMPROVEMENTS PCF STAGE 2**

Drawing Title: **CANTLEY LANE OPTION 1**

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Subsidiary: 1:2500

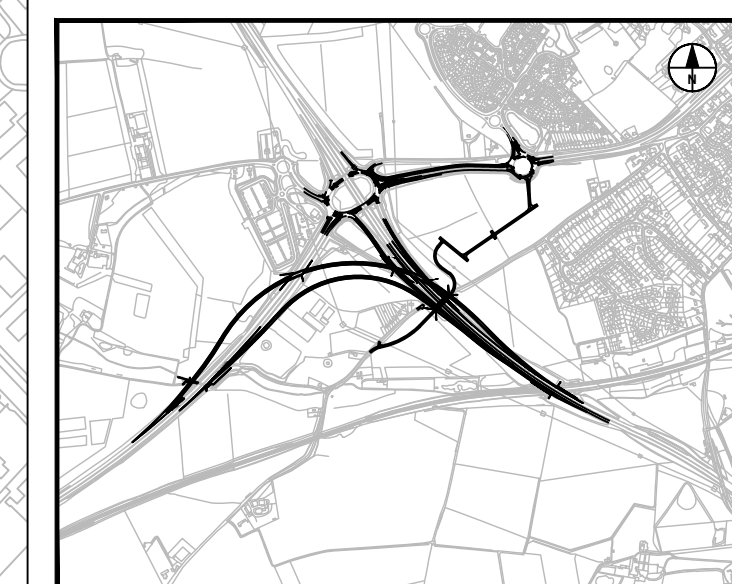
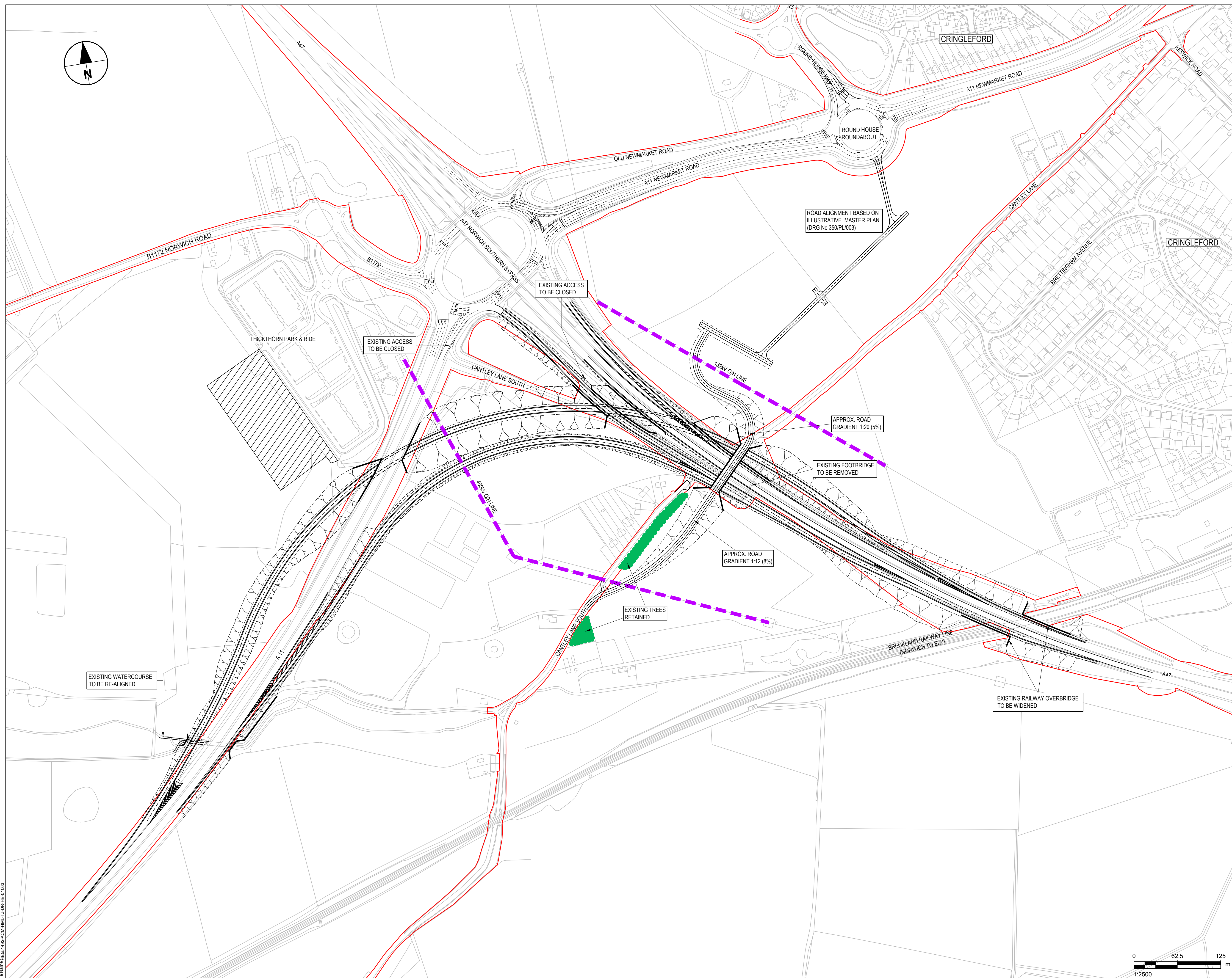
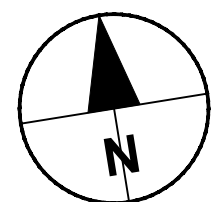
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KEY LOCATION PLAN
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- KEY
- POTENTIAL FUTURE PARK & RIDE EXPANSION
 - EXISTING HIGHWAY BOUNDARY

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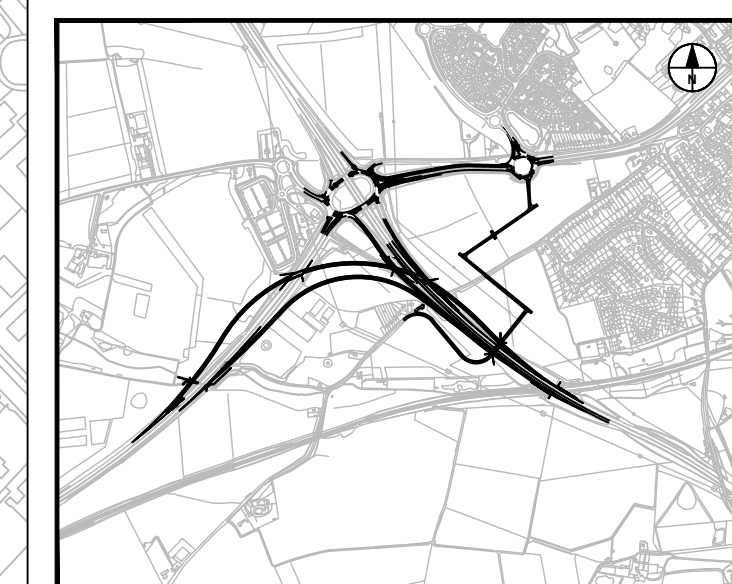
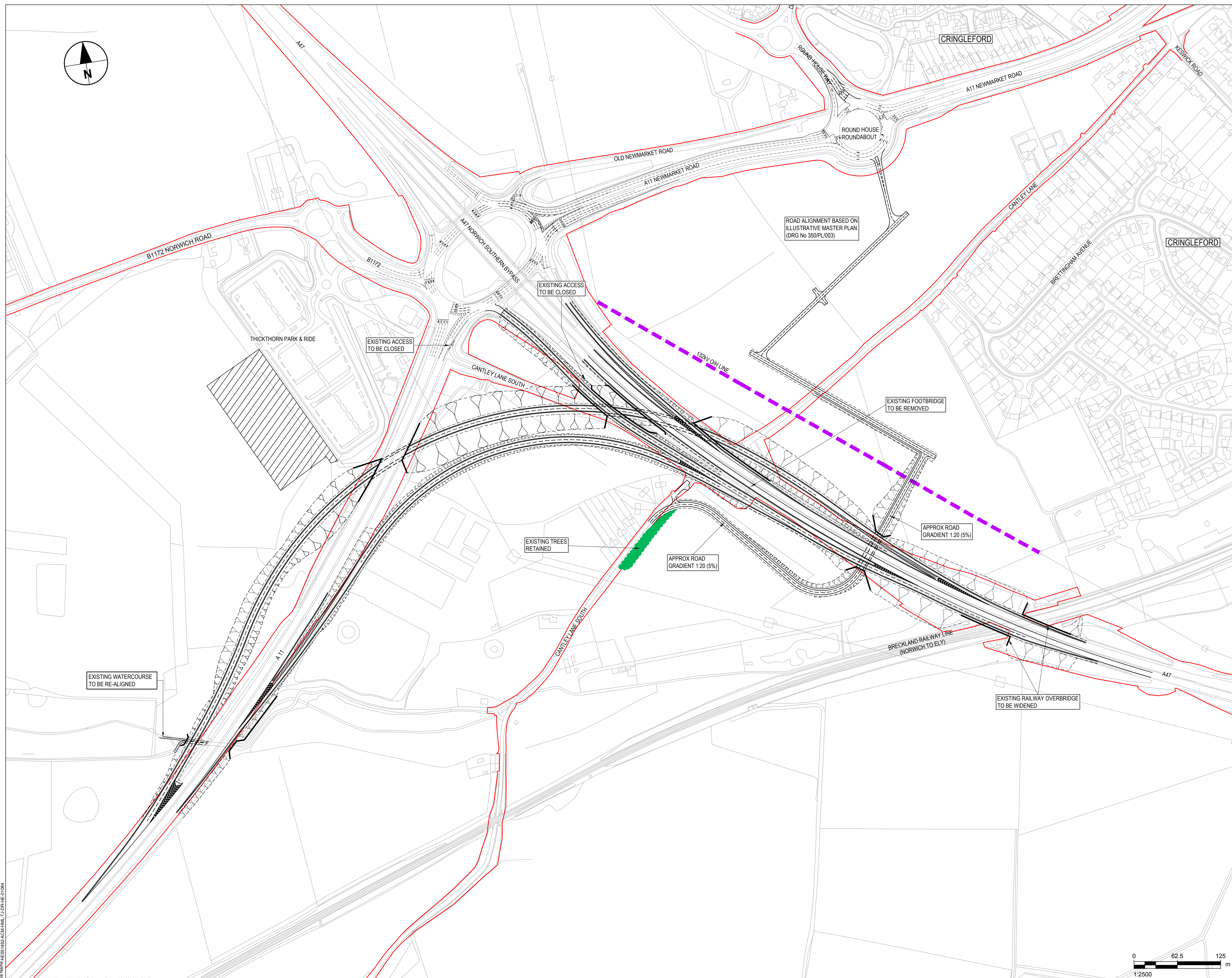
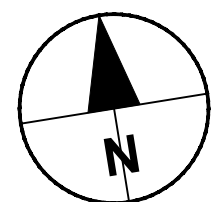
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- KEY
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 - EXISTING HIGHWAY BOUNDARY

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Drawing Title
CANTLEY LANE OPTION 3

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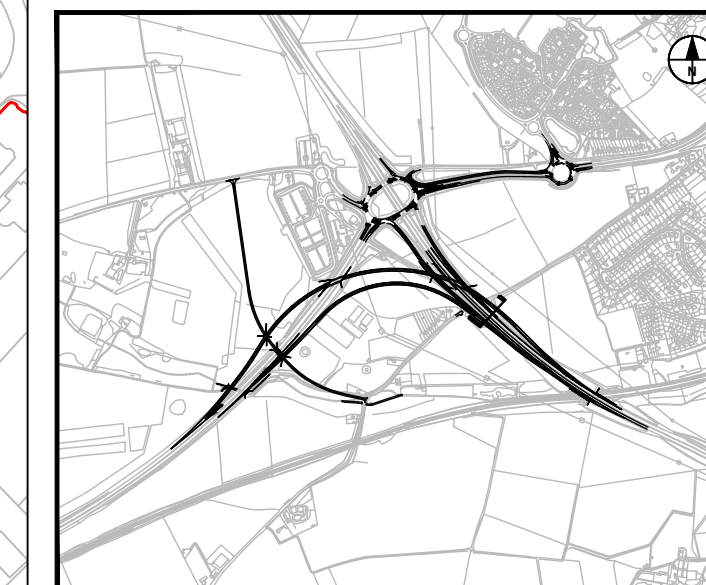
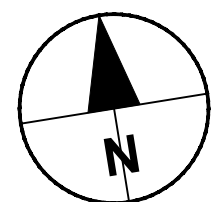
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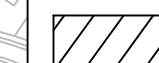




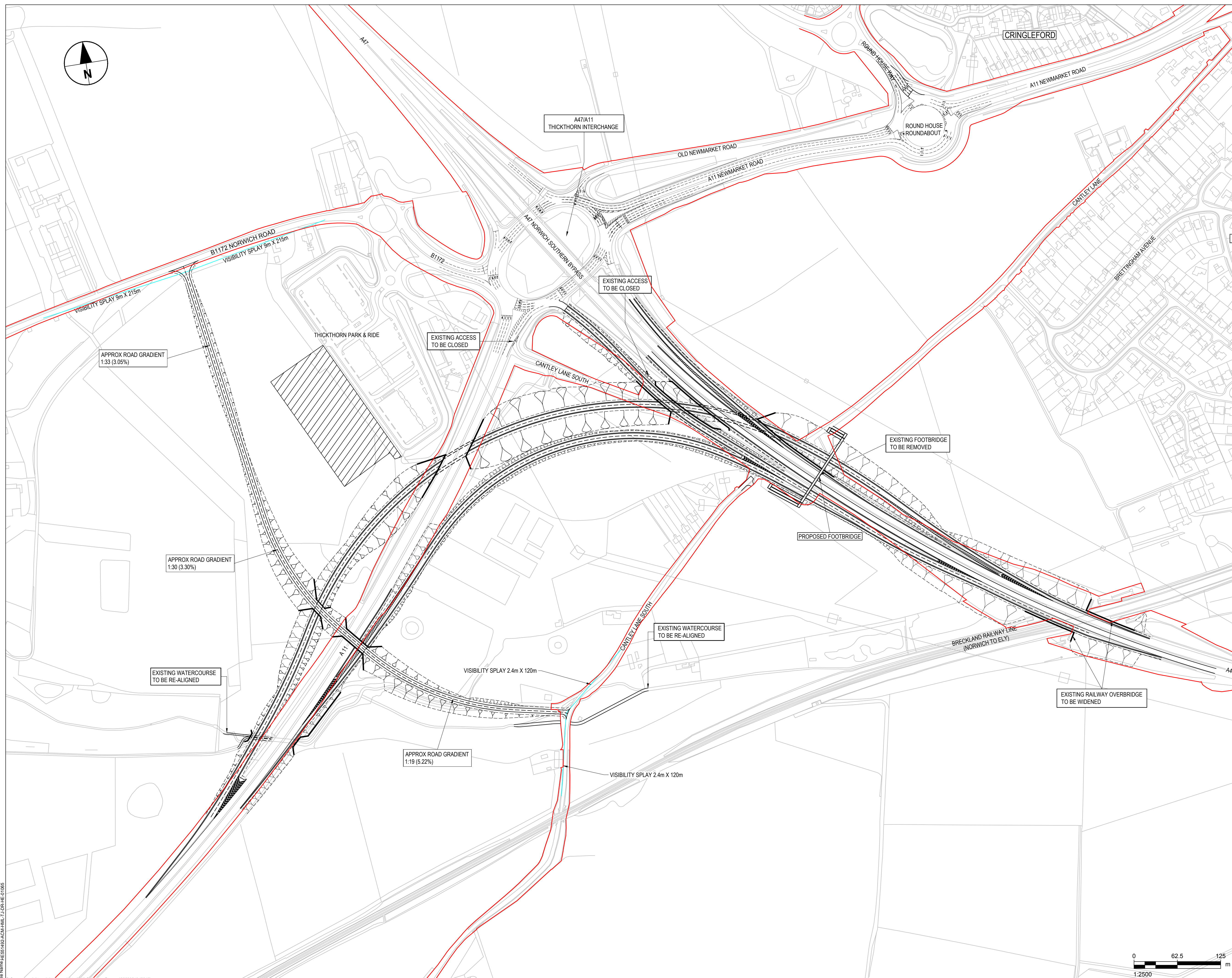
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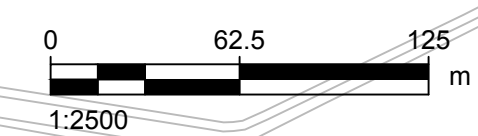
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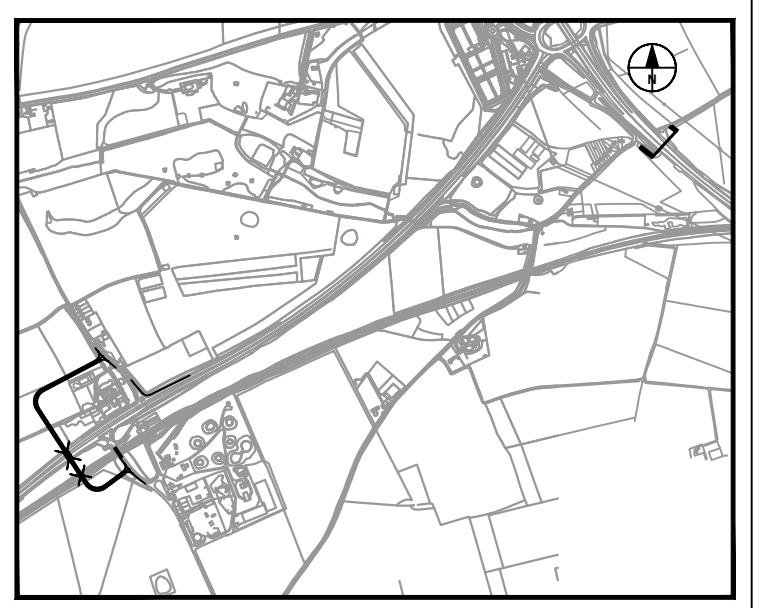
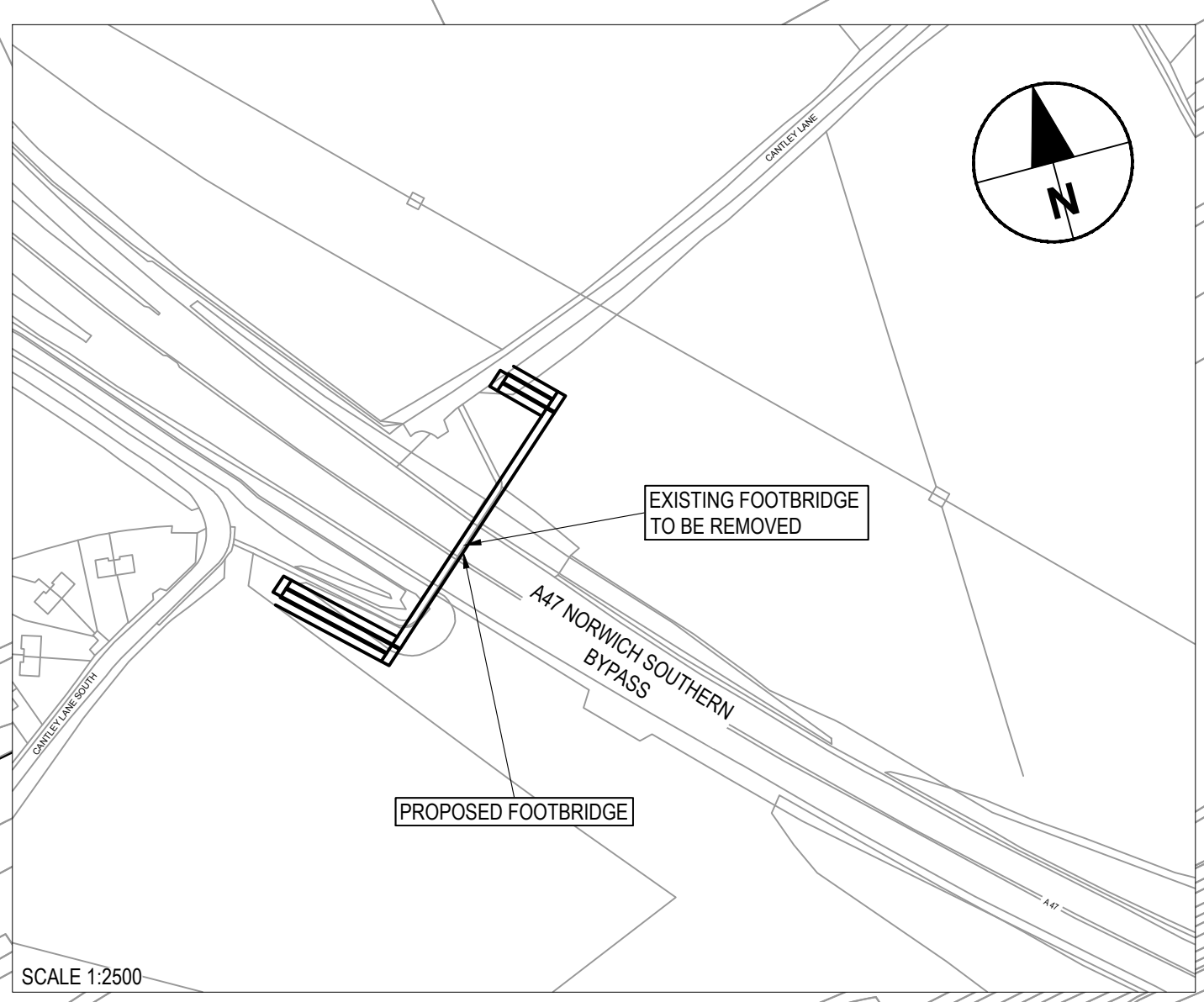
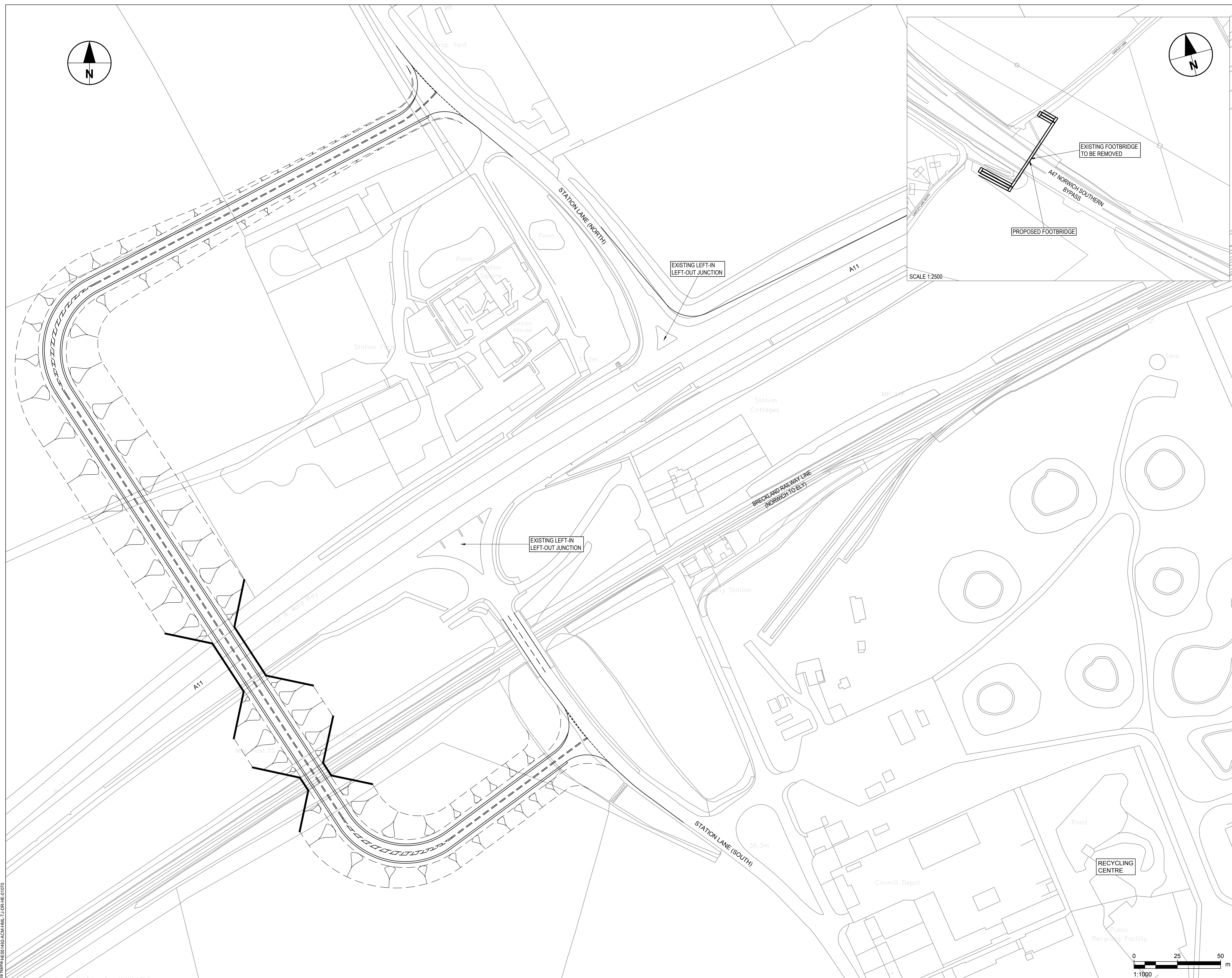
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STATION LANE COMPACT GRADE SEPARATED JUNCTION OPTION 5

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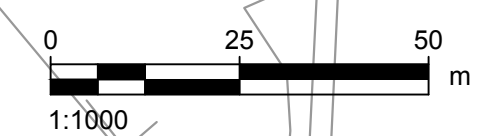
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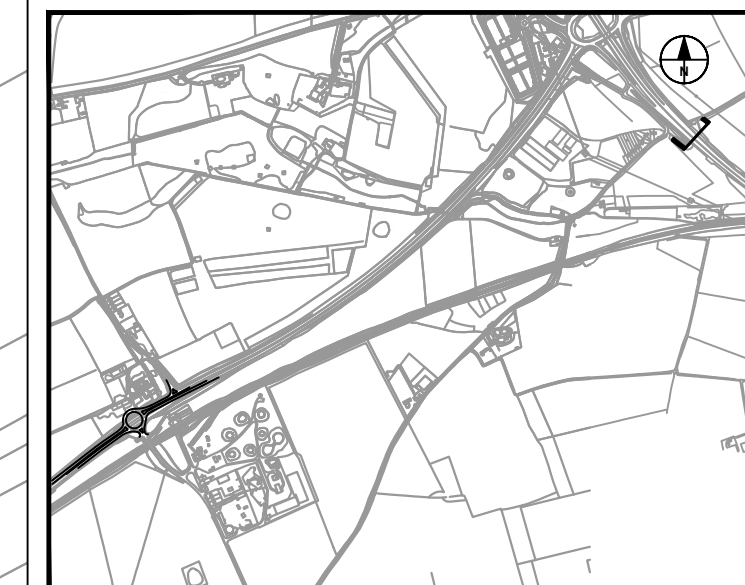
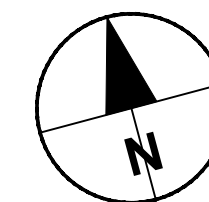
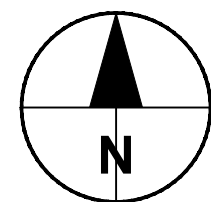
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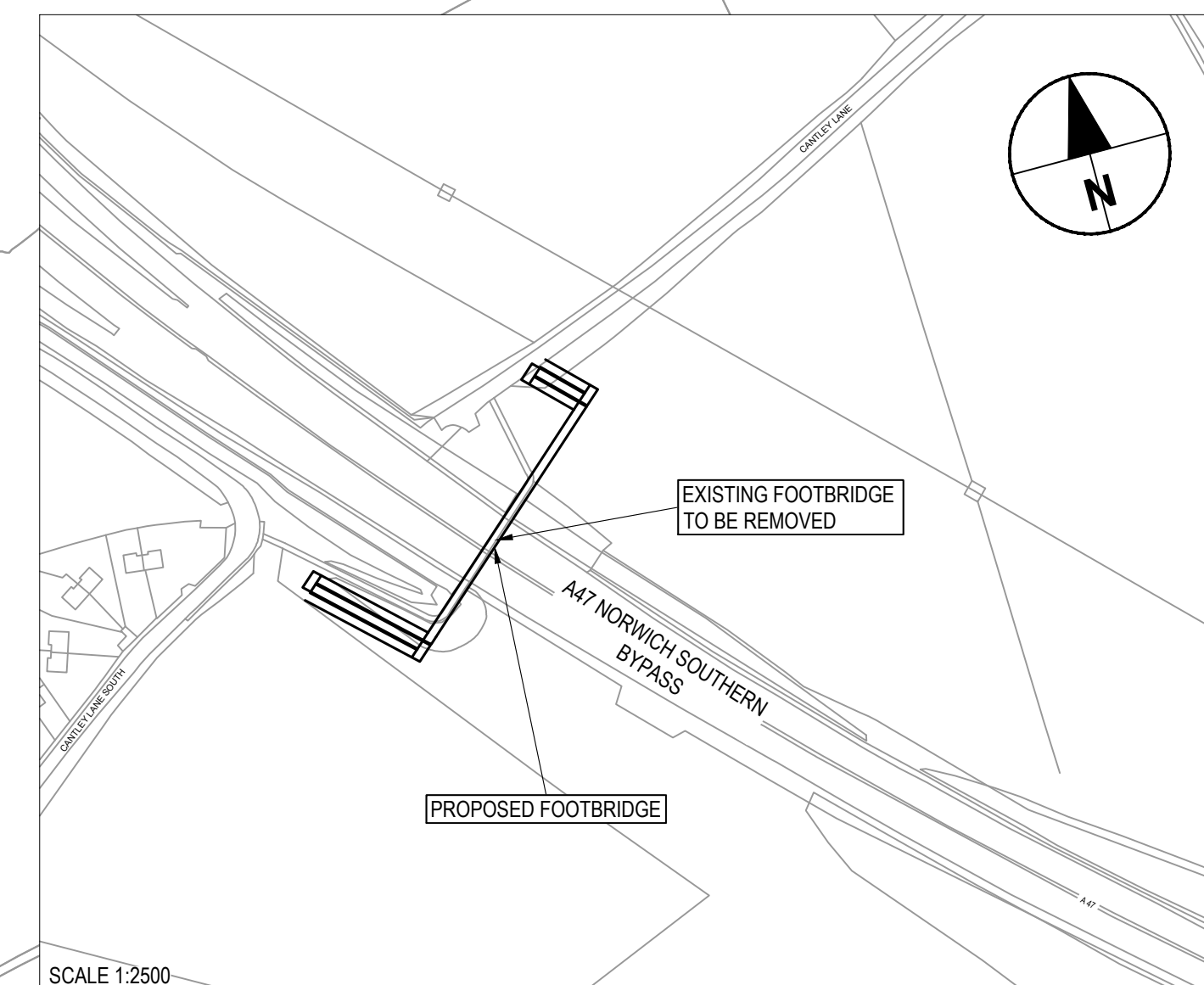
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STATION LANE ROUNDABOUT OPTION 6

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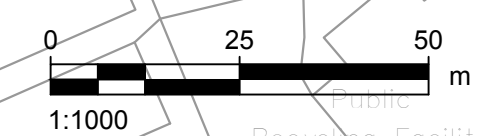
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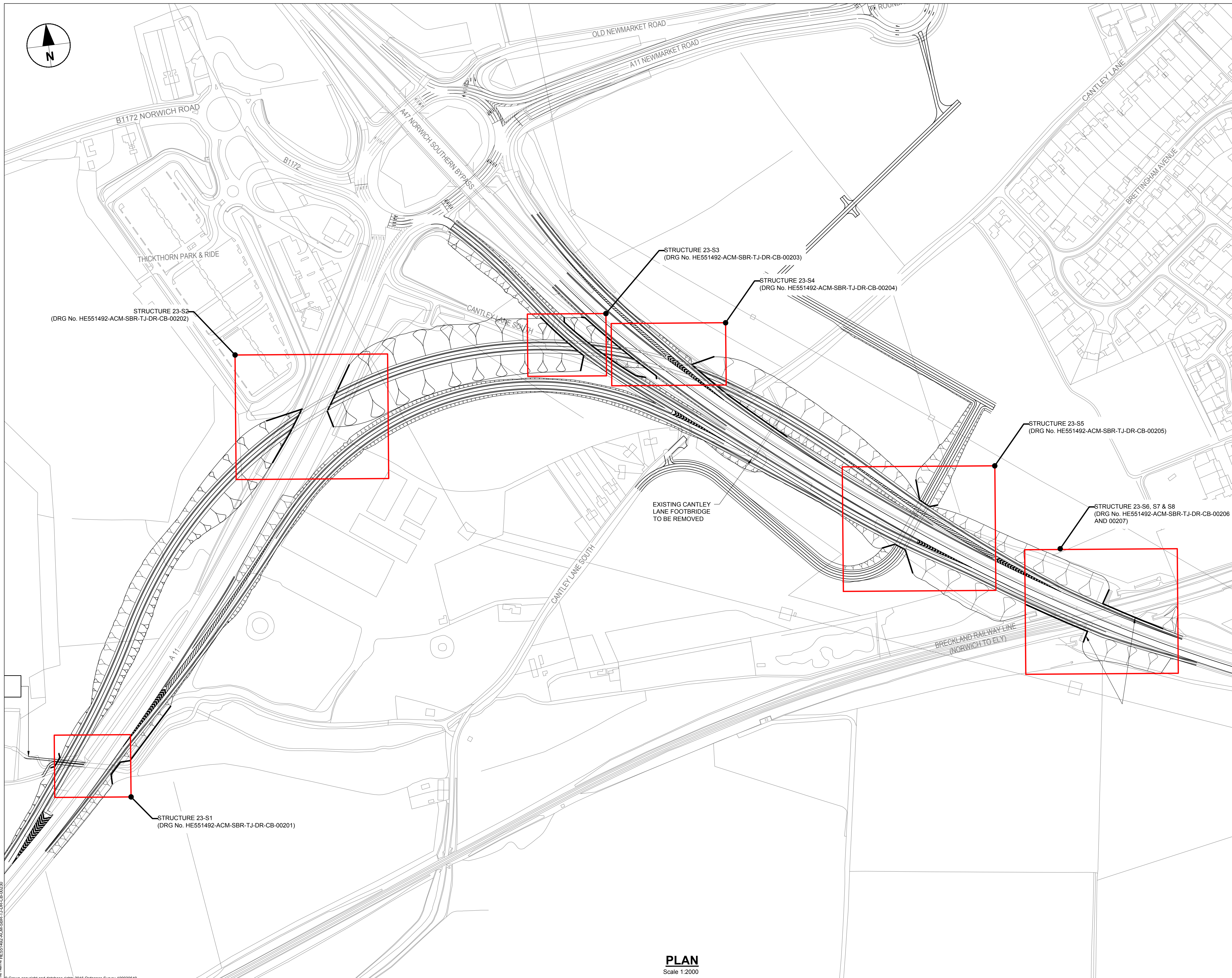
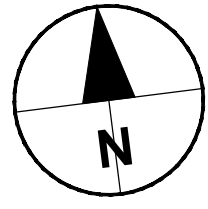
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Appendix O – Structures for Local Road Options 3 and 4





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FOR INFORMATION	LJP	23/06/17	P01
Revision Details	By	Date	Suffix
	Check		

Purpose of issue
FOR INFORMATION

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
**A47 CORRIDOR SCHEMES
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN
OPTION 3
STRUCTURES NUMBERING**

Designed	Drawn	Checked	Approved	Date
SLS	LJP	AK	JN	23/06/2017

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AS SHOWN

Suitability
S2

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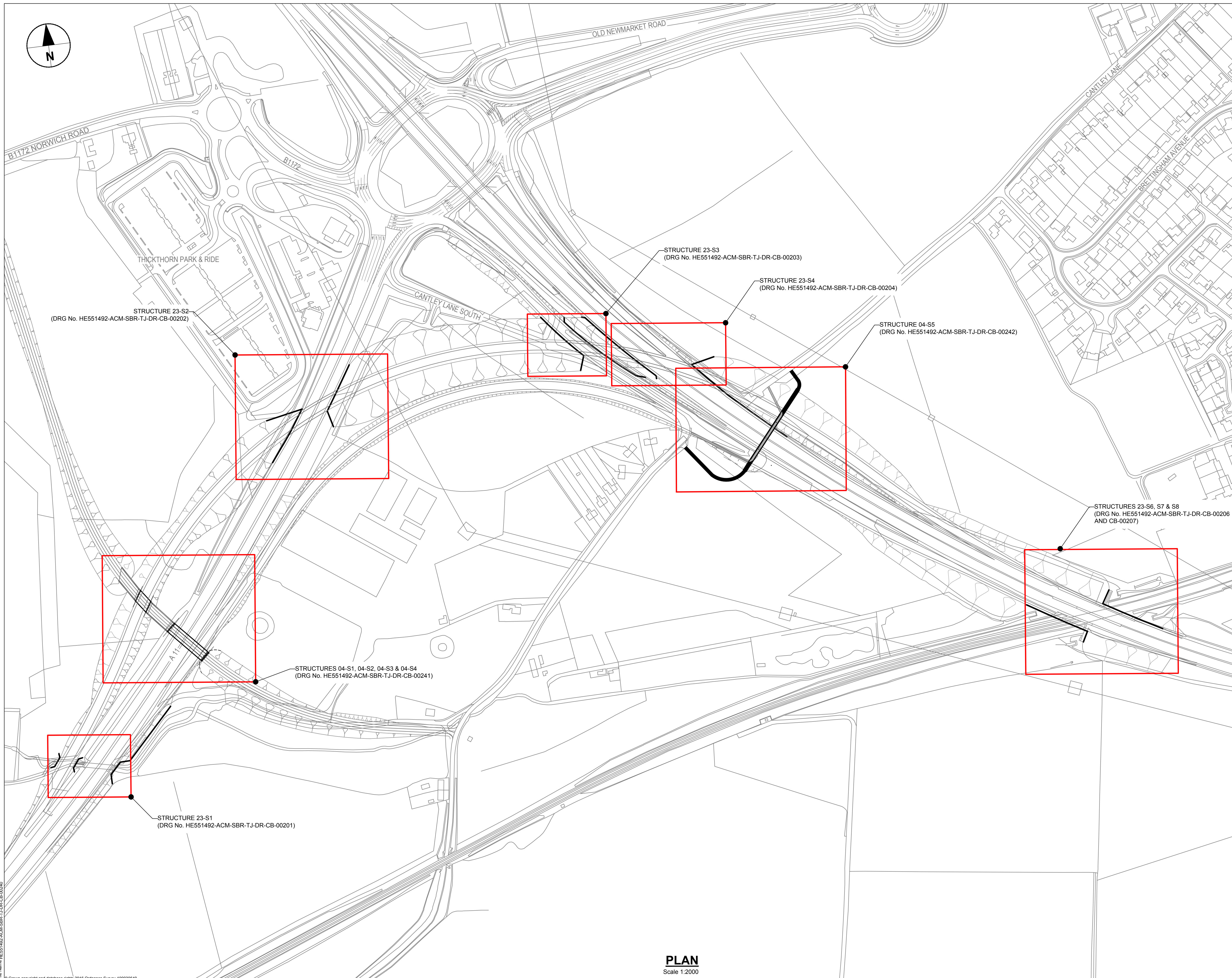
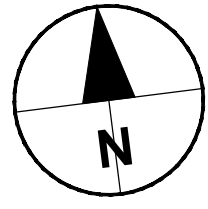
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FOR INFORMATION

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Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
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Project Title
**A47 CORRIDOR SCHEMES
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN
OPTION 4
STRUCTURES NUMBERING**

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AMW	LJP	AK	JN	20/06/2017
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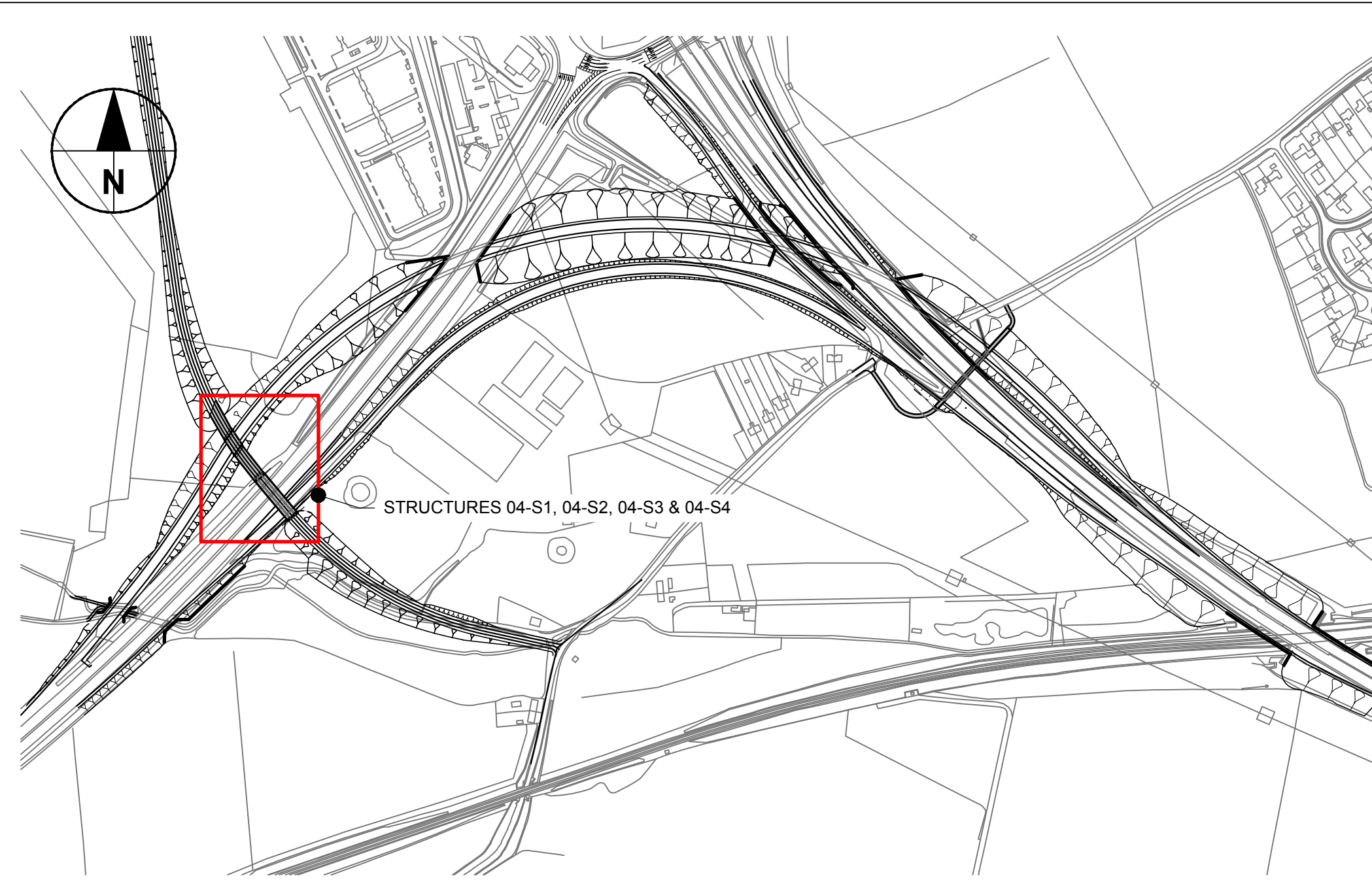
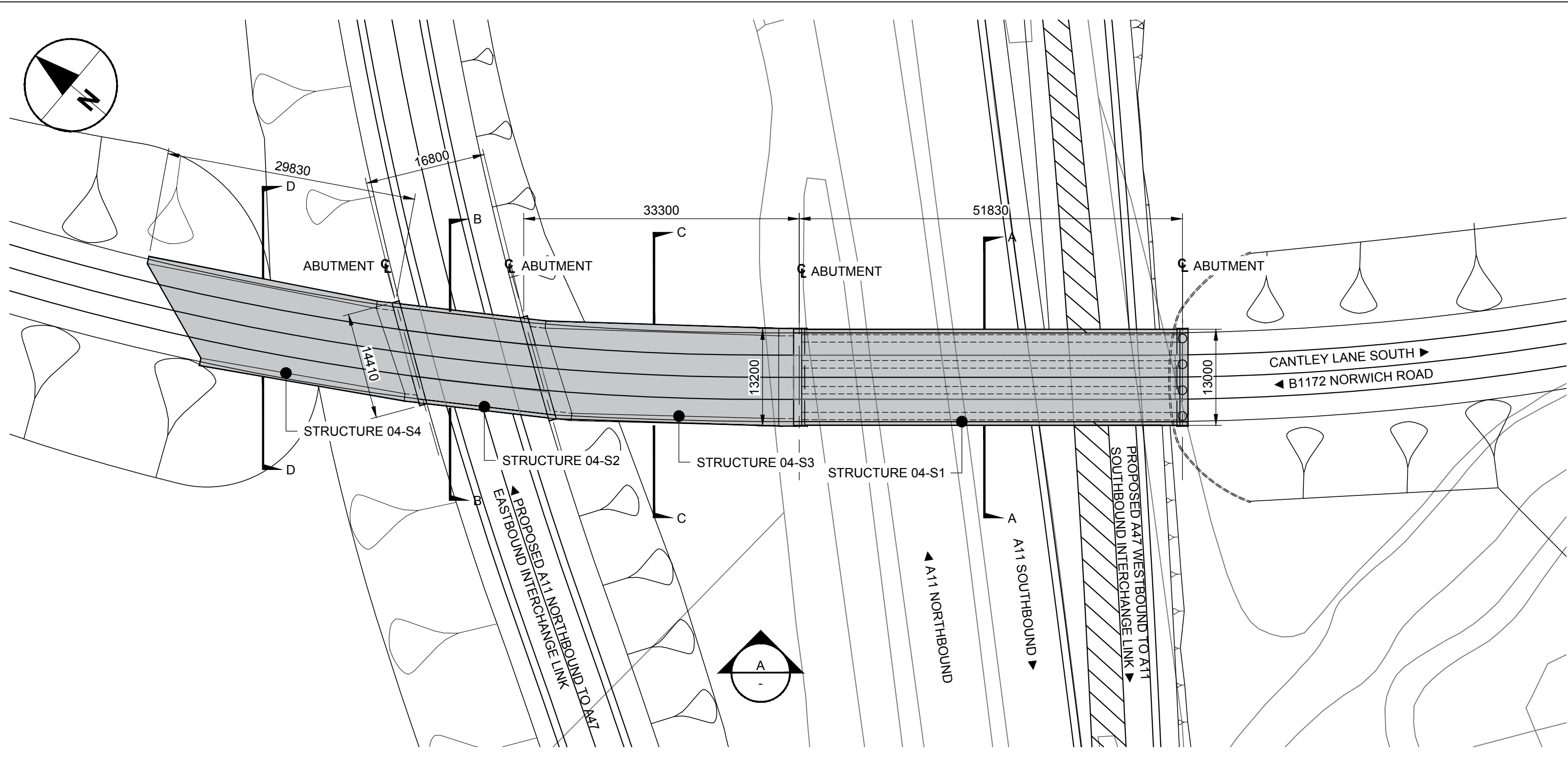
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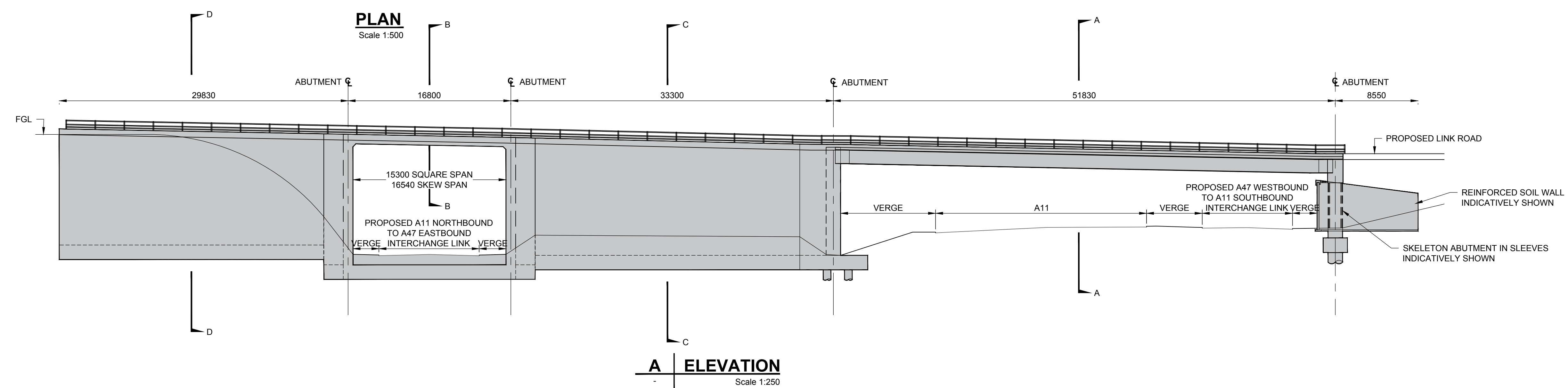
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PLAN
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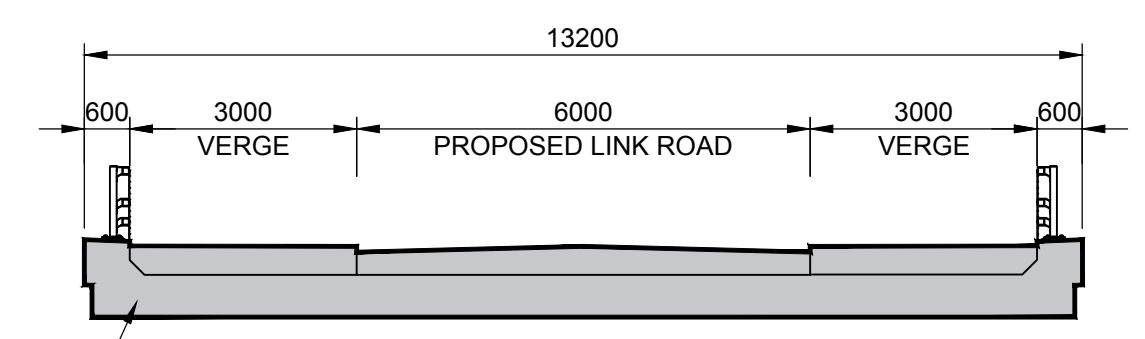
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LOCATION PLAN
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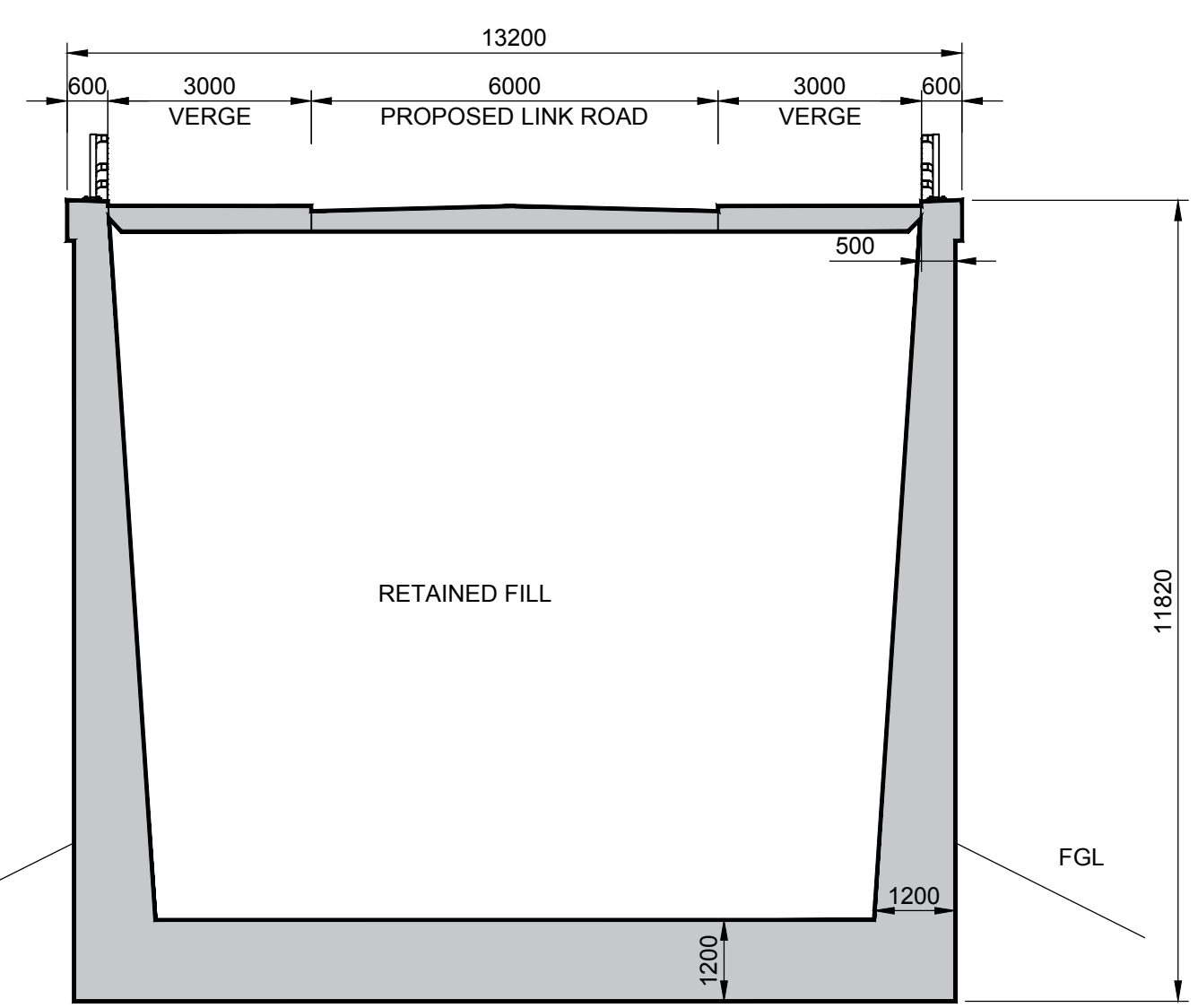


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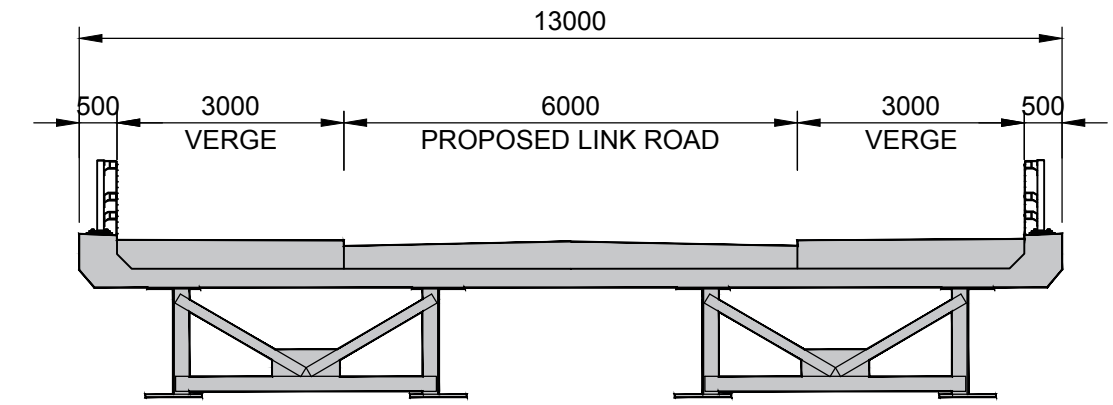
B SECTION
Scale 1:100
(STRUCTURE 04-S2)

RC DECK SLAB (SOLID OR VOIDED)



C SECTION
Scale 1:100

SECTION D-D SIMILAR
(STRUCTURE 04-S3 & 04-S4)



A SECTION
Scale 1:100
(STRUCTURE 04-S1)

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 - SURCHARGE IN THE AREA OF THE APPROACH EMBANKMENTS AND THE U-SHAPE STRUCTURE MIGHT BE REQUIRED PRIOR TO CONSTRUCTION OF THE STRUCTURES.

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- LEGEND
- PROPOSED ROAD LEVEL
 - ▒ PROPOSED STRUCTURE

FOR INFORMATION	LJP	20/06/17	P01
Revision Details	By JN	Date	Suffix
Purpose of issue	Check		

FOR INFORMATION

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Working on behalf of **highways england**

Project Title

A47 CORRIDOR SCHEMES PCF STAGE 2

Drawing Title

A47/A11 THICKTHORN OPTION 4 STRUCTURES 04-S1, 04-S2, 04-S3 & 04-S4

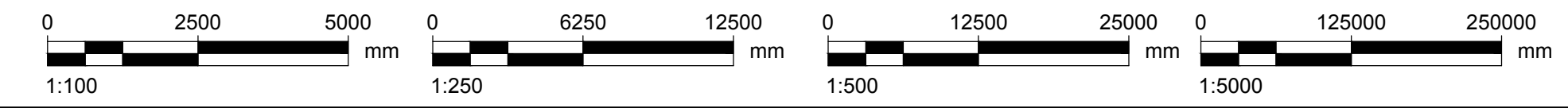
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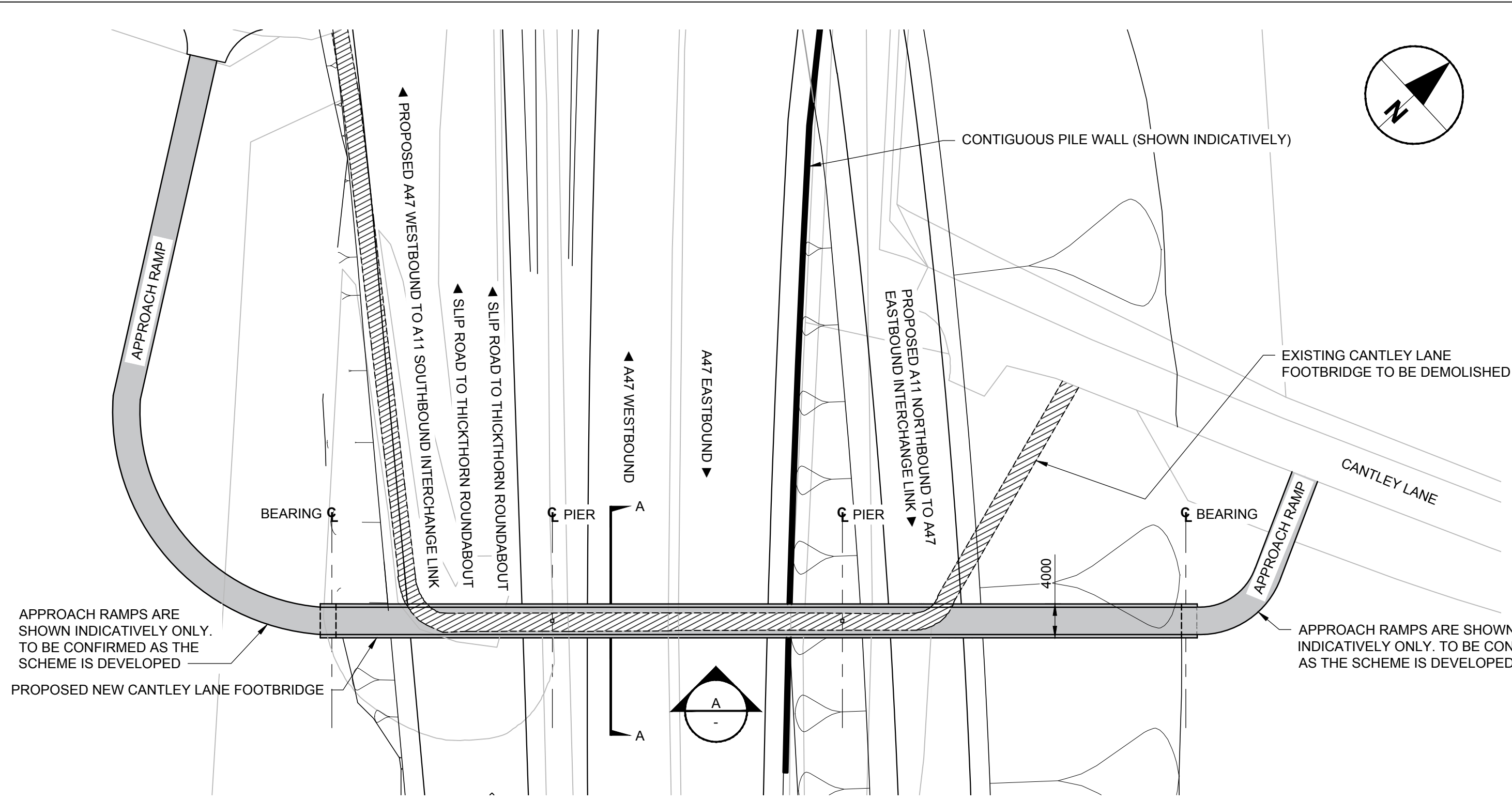
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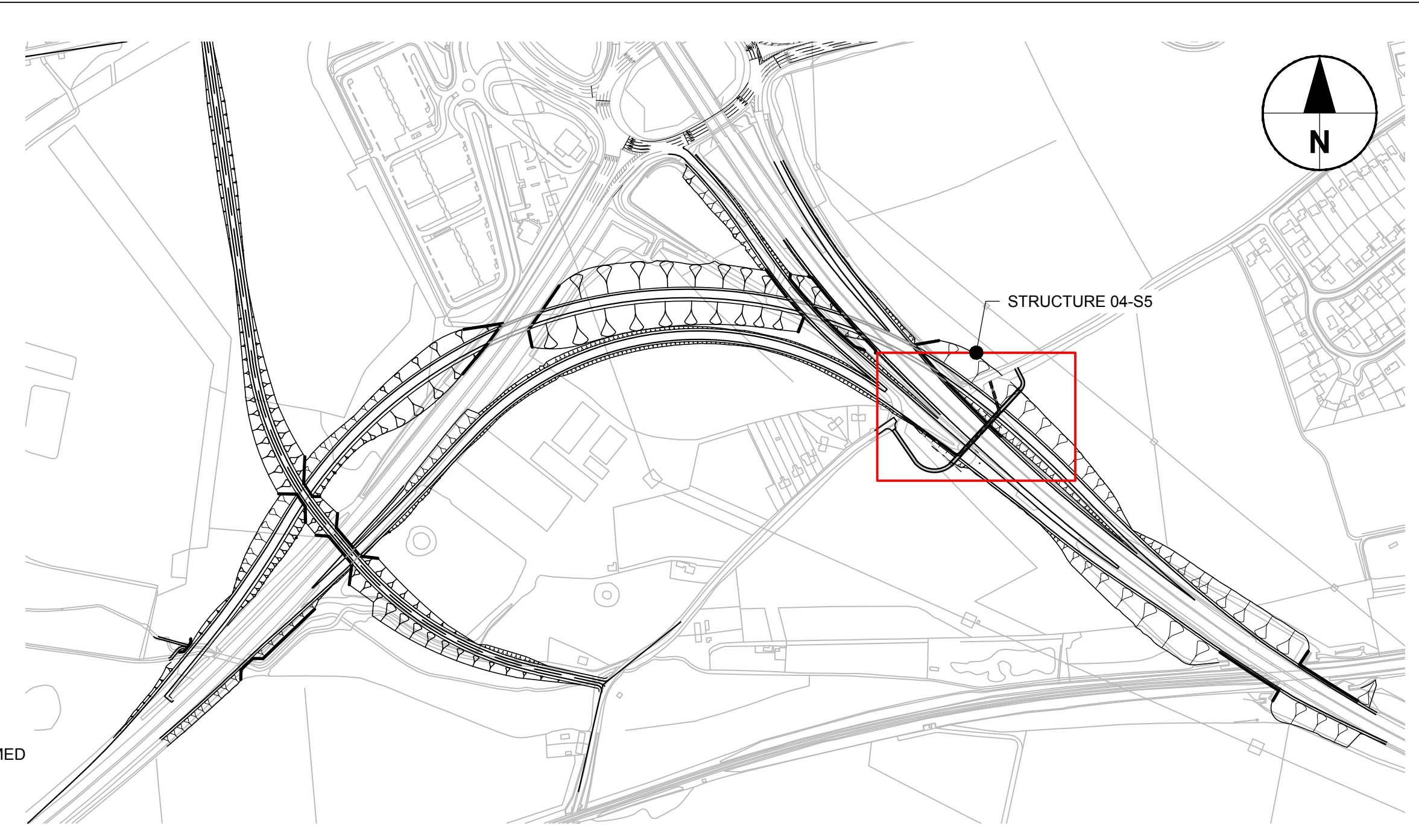
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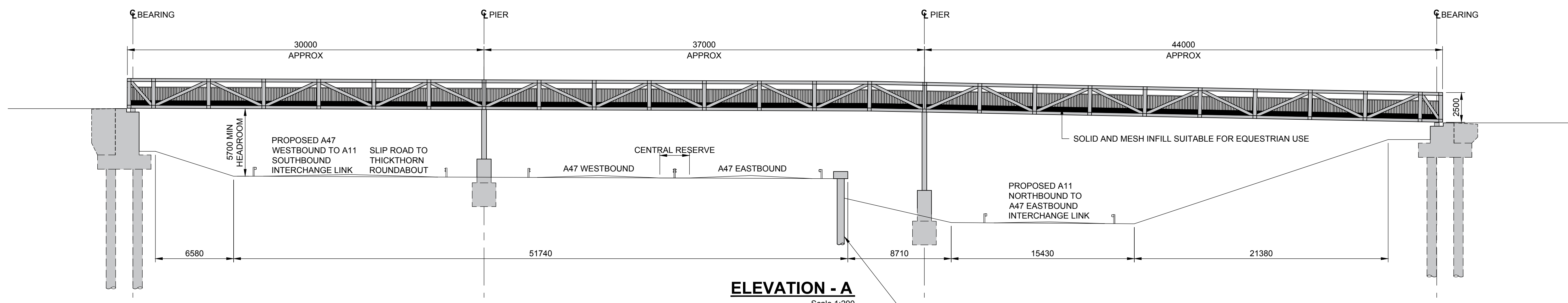


PLAN
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WINGWALLS OMITTED FOR CLARITY.

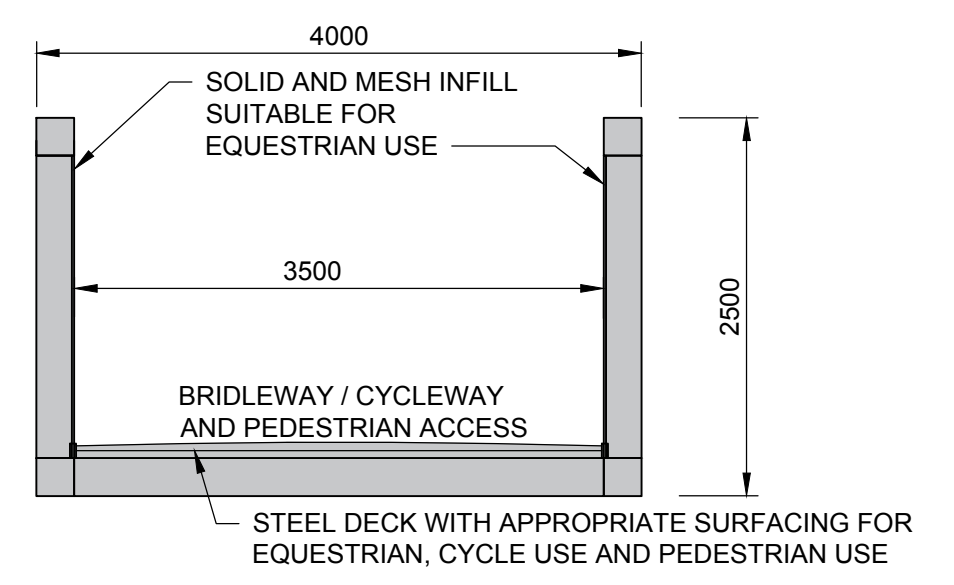


KEY PLAN
Scale 1:5000

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ELEVATION - A
Scale 1:200
CONTIGUOUS PILE WALL INDICATIVELY SHOWN, TO BE CONFIRMED AS THE SCHEME IS DEVELOPED



A SECTION
Scale 1:50

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- LEGEND**
- PROPOSED ROAD LINE
 - ▬ PROPOSED STRUCTURE EXTENSION
 - ▨ PROPOSED DEMOLITIONS

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FOR INFORMATION

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Working on behalf of
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Project Title
**A47 CORRIDOR SCHEMES
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN
OPTION 4
STRUCTURE 04-S5**

Designed	Drawn	Checked	Approved	Date
AMW	LJP	AK	JN	20/06/2017

Scale @ A1
AS SHOWN

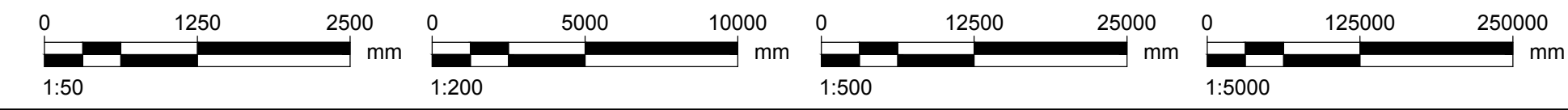
Suitability
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Appendix P – Public Proposal Option 7



A proposal to link Station Lane Ketteringham to the Norwich-bound carriageway of A11

(6 April 2017)

Background

In March, Highways England issued a public consultation document containing proposals to improve the A47/A11 junction.

New roads linking the A11 to the A47 Southern Bypass directly (avoiding the Thickthorn roundabout) will require closure of the current access from Cantley Lane South to and from the Thickthorn roundabout.

A new road has been proposed running easterly from Cantley Lane South, across open farmland, through a new underpass beneath the A47, onto a further stretch of new road before joining with Cantley Lane in Cringleford (currently a cul de sac). As described in the proposal, this reconnects Cantley Lane with Cantley Lane South.

Current situation

There has been a considerable increase in traffic along Cantley Lane South, since the closure of the A11 central reservation at the junction with Station Lane Ketteringham. This change was clearly needed as this was a dangerous junction. The result, however, was that nearly all Norwich-bound traffic from Ketteringham and East Carleton must now use Cantley Lane South in order to access the Thickthorn junction. As well as residents this also includes employees at the Council Depot, Whites Paper and NR Asphalt. Cantley Lane South is narrow and winding, especially near the low railway bridge where there are blind bends and very narrow sections where 2 vehicles cannot pass. This has significantly increased the risk of accidents to motorists, cyclists, pedestrians and horseriders.

Linking Cantley Lane South directly with Cantley Lane is likely to further increase traffic volumes on Cantley Lane South, and also on Cantley Lane in Cringleford.

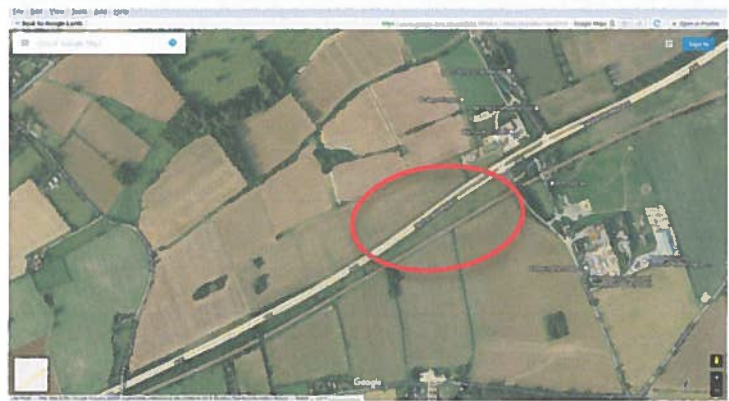
Alternative proposal (see attached)

- 1) Close Cantley Lane South at Thickthorn end (forming a cul de sac)
- 2) Create a new road from Station Lane Ketteringham, to a new underpass beneath the A11, to a new roundabout on the north side of the A11, safely allowing slip road access from Ketteringham / East Carleton to the A11, and from the A11 into Ketteringham / East Carleton.
- 3) No underpass would be needed linking Cantley Lane South with Cantley Lane in Cringleford.
- 4) There would be a large drop in traffic along Cantley Lane South, which would become significantly safer. There would be no through traffic from Cantley Lane South into Cringleford and vice versa.

Existing junction at A11/Station Lane, Ketteringham.
(Note: central reservation pictured in the top right corner is now closed).



Area of proposed changes circled in red.



Suggested access to A11 Norwich-bound carriageway to and from Station Lane (Ketteringham).



Proposed link between Station Lane (Ketteringham) and Norwich-bound carriageway of A11.

New roundabout system.

New underpass structure.



Appendix Q – Environmental Figures



Road Investment Strategy

East Area 6

Environmental Assessment Report A47 Thickthorn Interchange Improvements

HE551492-ACM-EGN-TJ-RP-LE-00001

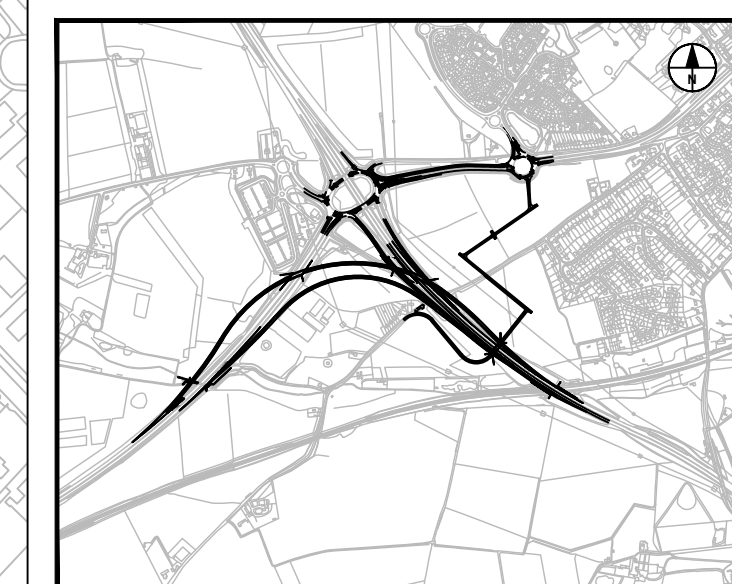
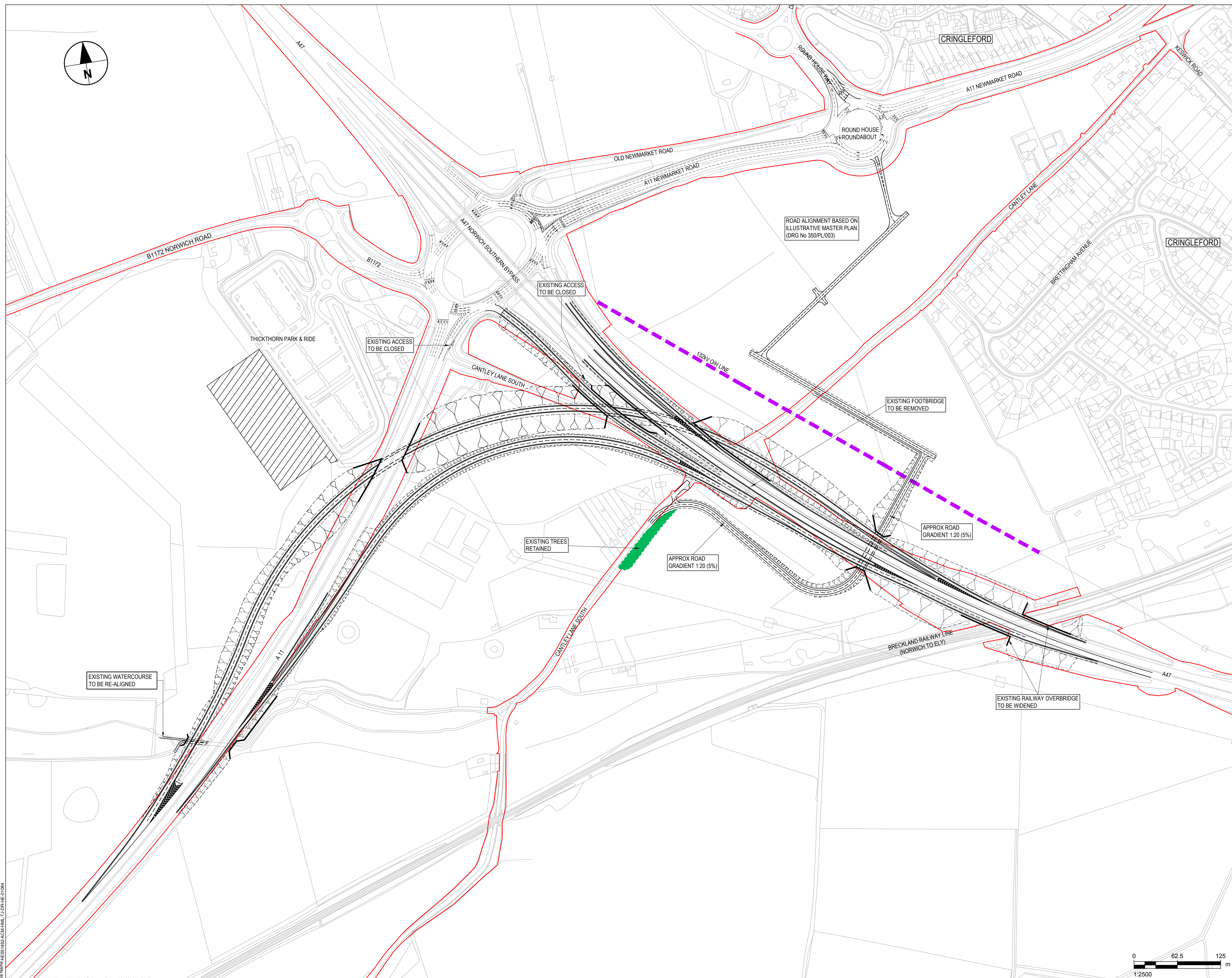
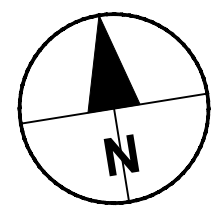
Volume 2: Figures

A47/A11 Thickthorn Interchange Stage 2 Environmental Appraisal Report

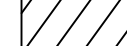

Volume 2: FIGURES Index of Figures

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HE551492-ACM-HML-TJ-DR-HE-01064	Figure 2.1 Cantley Lane Option 3
HE551492-ACM-HML-TJ-DR-HE-01065	Figure 2.2 Cantley Lane Option 4
HE551492-ACM-EAQ-TJ-DR-GI-00001	Figure 5.1 Air Quality Study Area
HE551492-ACM-EHR-TJ-DR-GI-00001	Figure 6.1 Known Heritage Assets
HE551492-ACM-ELS-TJ-DR-GI-00001	Figure 7.1 Existing Landscape Features
HE551492-ACM-ELS-TJ-DR-GI-00002	Figure 7.2 Landscape Designations and Character Areas
HE551492-ACM-ELS-TJ-DR-GI-00003	Figure 7.3 Visual Receptors
HE551492-ACM-ELS-TJ-DR-GI-00004	Figure 7.4 Viewpoint 1 - Round House Park, Fern Drive
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HE551492-ACM-EBD-TJ-DR-GI-00002	Figure 8.2b Phase 1 Habitat Survey
HE551492-ACM-EBD-TJ-DR-GI-00002	Figure 8.2c Phase 1 Habitat Survey
HE551492-ACM-EBD-TJ-DR-GI-00002	Figure 8.2d Phase 1 Habitat Survey

Drawing Number	Drawing Title
HE551492-ACM-EBD-TJ-DR-GI-00003	Figure 8.3a Phase 1 Habitat Survey Photographs
HE551492-ACM-EBD-TJ-DR-GI-00003	Figure 8.3b Phase 1 Habitat Survey Photographs
HE551492-ACM-EBD-TJ-DR-GI-00003	Figure 8.3c Phase 1 Habitat Survey Photographs
HE551492-ACM-EBD-TJ-DR-GI-00003	Figure 8.3d Phase 1 Habitat Survey Photographs
HE551492-ACM-EBD-TJ-DR-GI-00003	Figure 8.3 Phase 1 Habitat Survey - Photo Locations
HE551492-ACM-EBD-TJ-DR-GI-00004	Figure 8.4 Protected & Notable Species Records
HE551492-ACM-EBD-TJ-DR-GI-00005	Figure 8.5 GCN Ponds Habitat Suitability Index Results Plan
HE551492-ACM-ENV-TJ-DR-GI-00001	Figure 9.1 Noise Location Plan
HE551492-ACM-EWE-TJ-DR-GI-00001	Figure 10.1 Surface Water Environment
HE551492-ACM-EWE-TJ-DR-GI-00002	Figure 10.2 Groundwater Environment
HE551492-ACM-EWE-TJ-DR-GI-00003	Figure 10.3 Flood Risk
HE551492-ACM-ENM-TJ-DR-GI-00001	Figure 11.1 Community Facilities
HE551492-ACM-EGT-TJ-DR-GI-00001	Figure 12.1 Solid Geology
HE551492-ACM-EGT-TJ-DR-GI-00002	Figure 12.2 Superficial Geology
HE551492-ACM-EGT-TJ-DR-GI-00003	Figure 12.3 Soil Classification
HE551492-ACM-EGT-TJ-DR-GI-00004	Figure 12.4 Agricultural Land Classification



KEY LOCATION PLAN
SCALE 1:25000

- KEY
-  POTENTIAL FUTURE PARK & RIDE EXPANSION
 -  EXISTING HIGHWAY BOUNDARY

Revision Details	By	Date	Suffix

Purpose of Issue
INFORMATION

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of


Project Title
A47/A11 THICKTHORN INTERCHANGE IMPROVEMENTS PCF STAGE 2

Drawing Title
FIGURE 2.1 CANTLEY LANE OPTION 3

Designed	Drawn	Checked	Approved	Date
KN	MCJ	PRB	JN	Jun 2017

Scale @ A1
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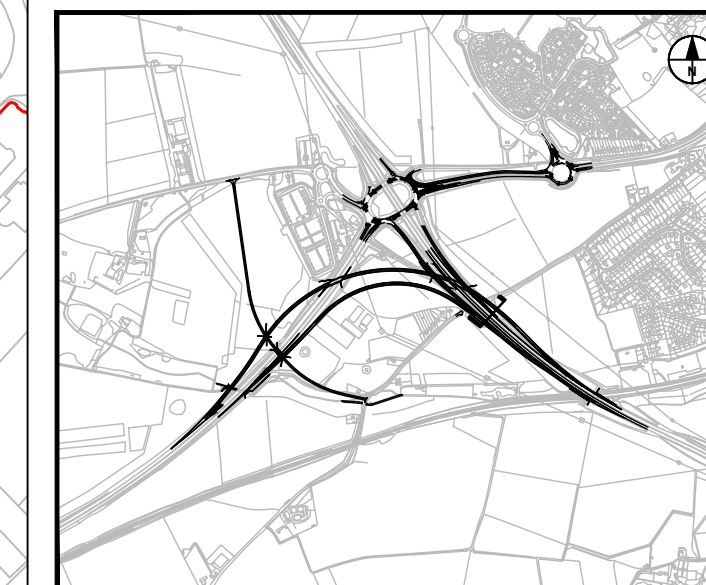
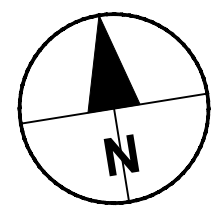
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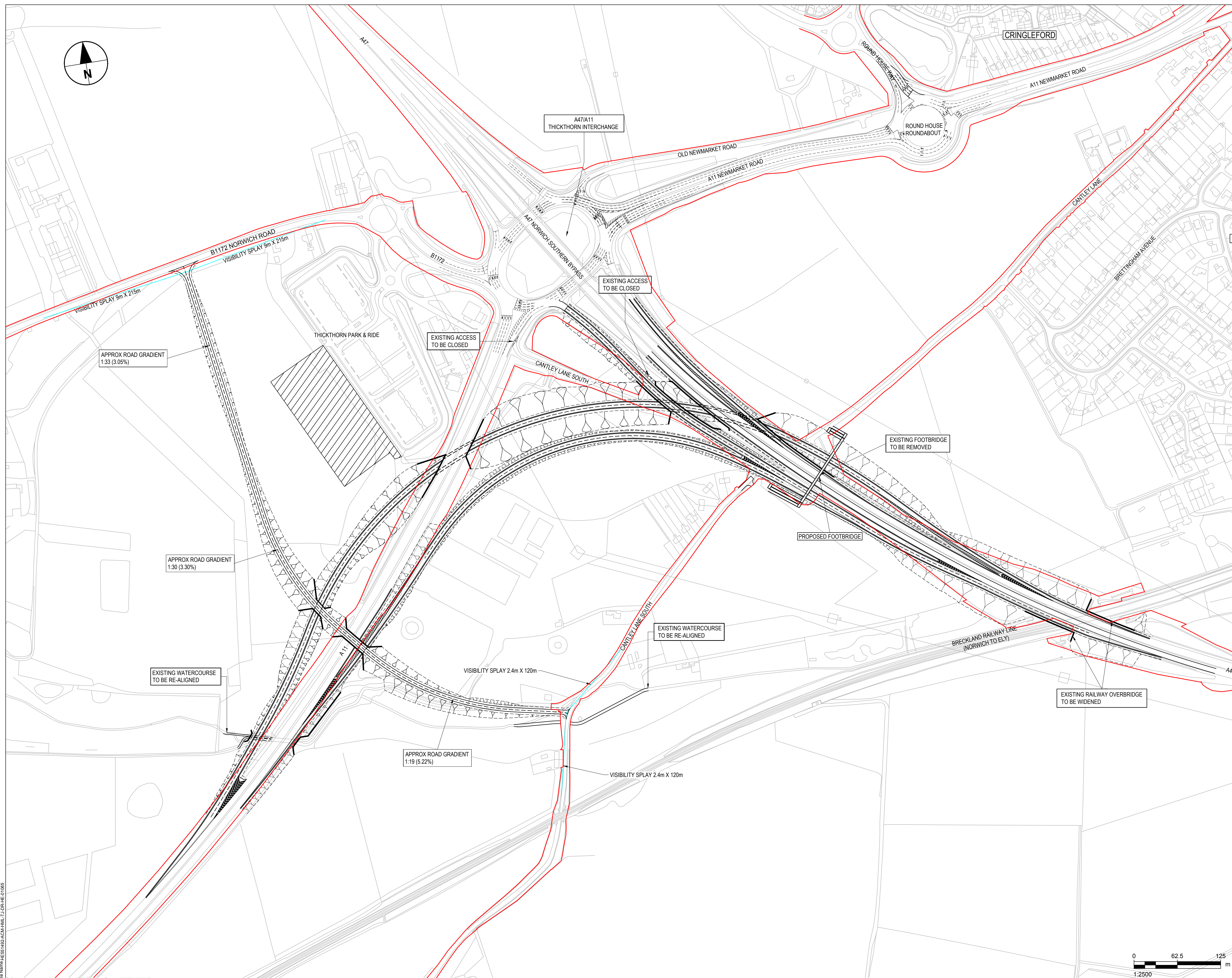
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KEY LOCATION PLAN
SCALE 1:25000

KEY

- POTENTIAL FUTURE PARK & RIDE EXPANSION
- EXISTING HIGHWAY BOUNDARY
- PROPOSED VISIBILITY SPLAY 9m X 215m



Revision Details	By	Date	Suffix

Purpose of issue: **INFORMATION**

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Project Title: **A47/A11 THICKTHORN INTERCHANGE IMPROVEMENTS PCF STAGE 2**

Drawing Title: **FIGURE 2.2 CANTLEY LANE OPTION 4**

Designed	Drawn	Checked	Approved	Date
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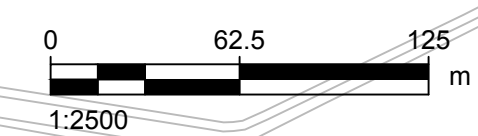
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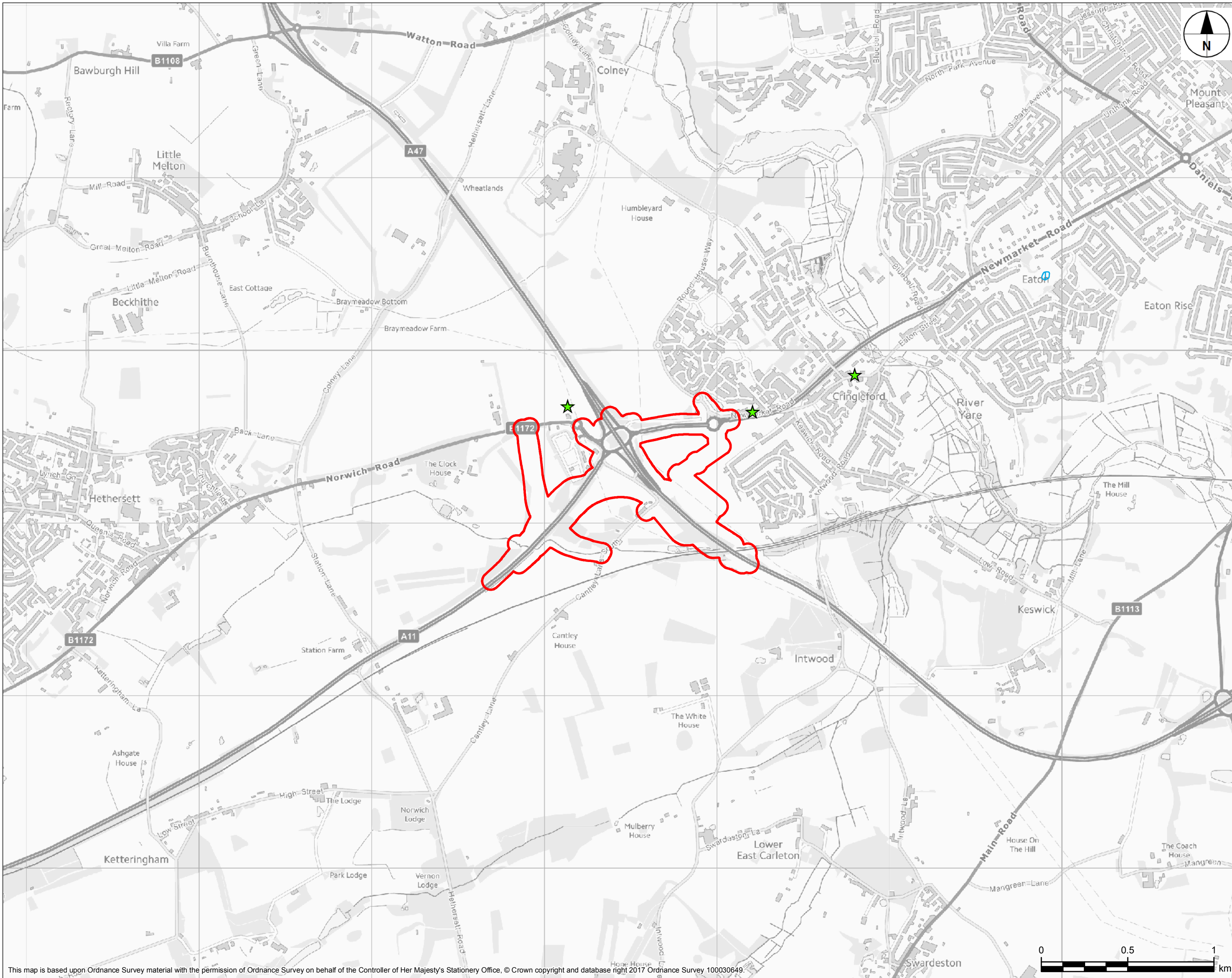
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- LEGEND
- Scheme Boundary
 - ★ Local Authority Diffusion Tube Monitors
 - Site of Special Scientific Interest (SSSI)

DRAFT ISSUE FOR COMMENT	GB	AS	08/06/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION AIR QUALITY STUDY AREA

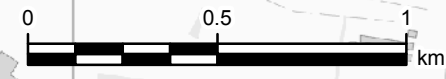
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Scale @ A3 1:20,000	Suitability S0	Page PAGE 1 of 1		

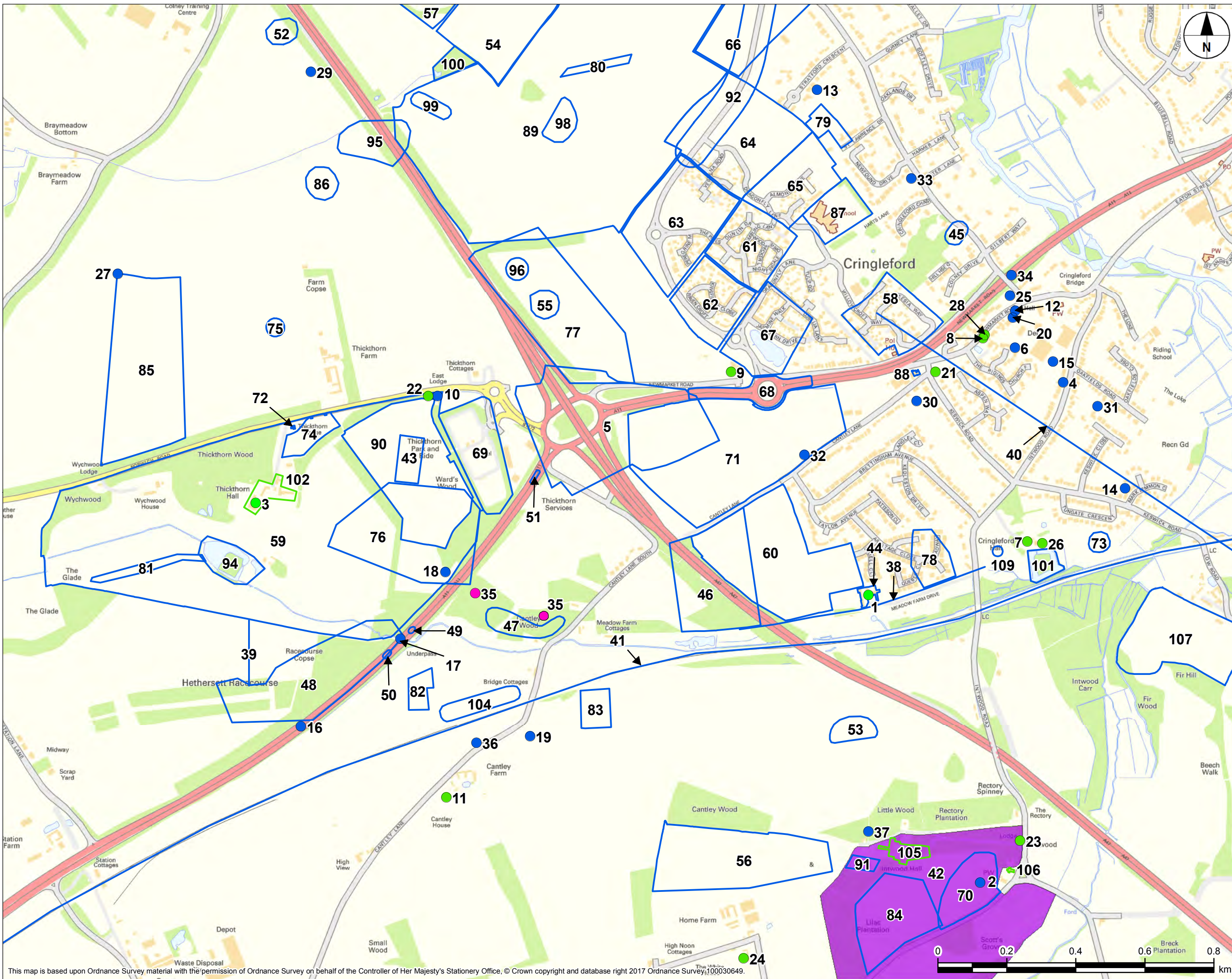
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Figure Number
Figure 5.1

Drawing Number HE551492-ACM-EAQ-TJ-DR-GI-00001	Rev P01
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- LEGEND
- Scheduled Monument
 - Listed Building
 - Known Archaeology
 - Registered Garden
 - Listed Building
 - Known Archaeology

Revision	By	Date	Check	Suffix
MINOR REVISIONS TO KNOWN HERITAGE ASSETS	GB	04/07/17	HM	P02
DRAFT ISSUE FOR COMMENT	GB	14/06/17	HM	P01

Purpose of issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION KNOWN HERITAGE ASSETS

Designed	Drawn	Checked	Approved	Date
HM	GB	HM	FL	04/07/2017

Scale @ A3
1:10,000

Suitability
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Page
PAGE 1 of 1

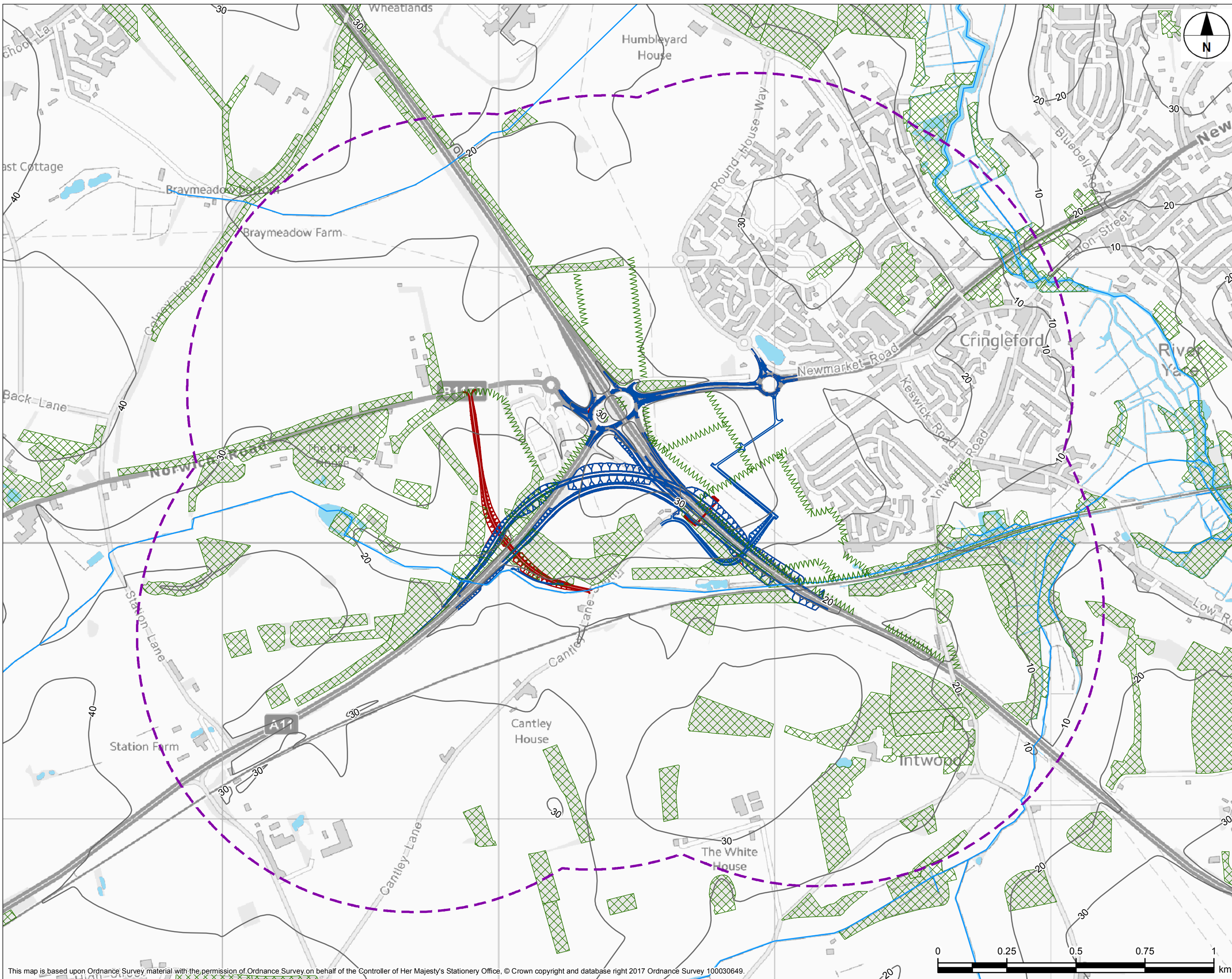
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Figure Number
Figure 6.1

Drawing Number
HE551492-ACM-EHR-TJ-DR-GI-00001

Rev
P02

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- LEGEND
- Study Area (1km Buffer)
 - Scheme Option 3
 - Scheme Option 4
 - Tree Belt
 - Woodland Block
 - 10m Contour Line
 - Watercourse
 - Waterbody

DRAFT ISSUE FOR COMMENT	GB	31/05/17	P01
Revision Details	By	Date	Suffix
	CR		

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
EXISTING LANDSCAPE FEATURES**

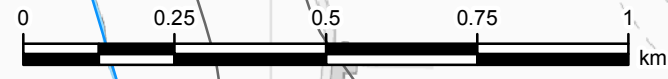
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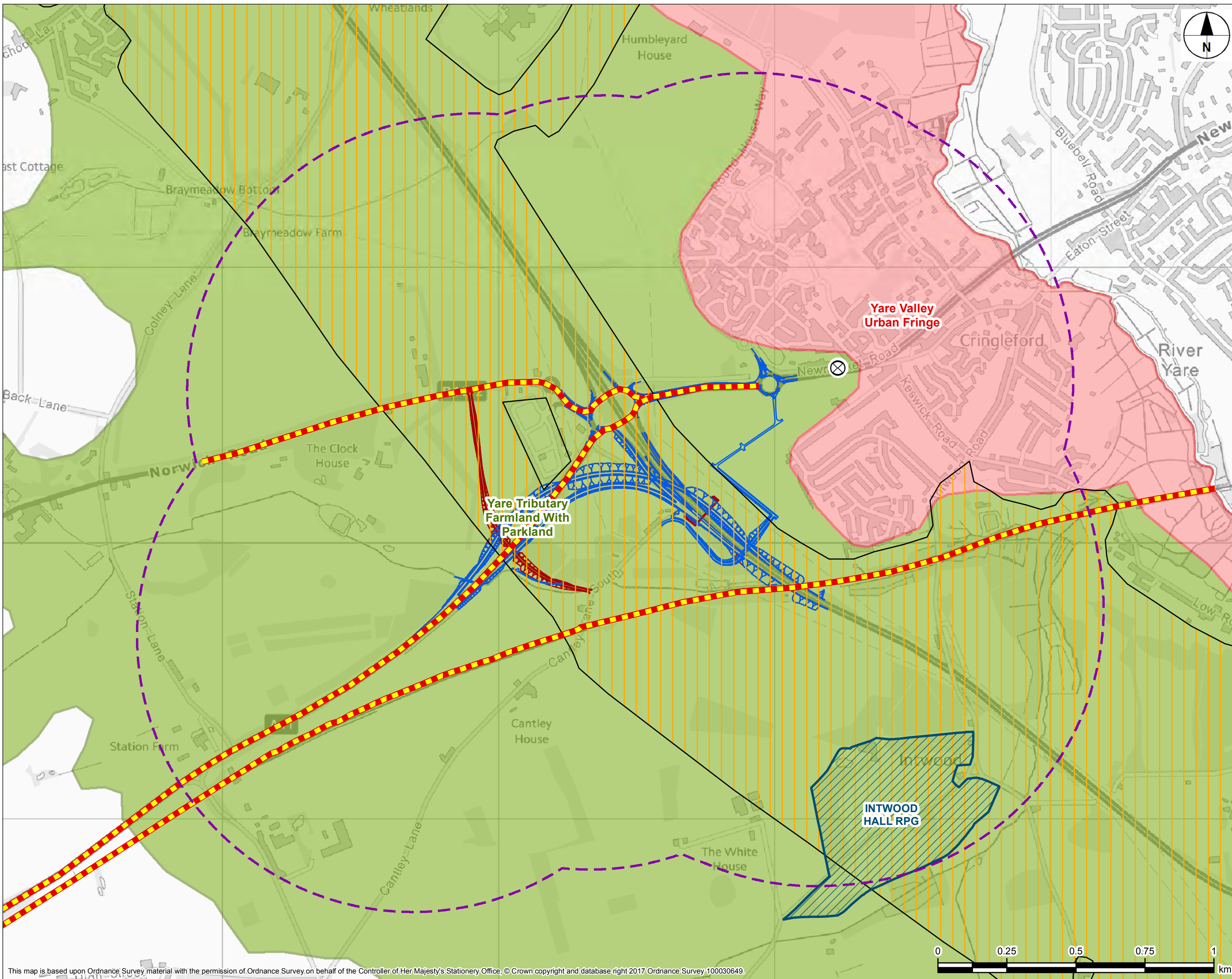
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Figure Number
Figure 7.1

Drawing Number HE551492-ACM-ELS-TJ-DR-GI-00001	Rev P01
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- LEGEND**
- Study Area (1km Buffer)
 - Scheme Option 3
 - Scheme Option 4
 - Registered Park and Garden
- Landscape Character Areas**
- Yare Tributary Farmland With Parkland
 - Yare Valley Urban Fringe
- Landscape Setting of Norwich**
- Norwich Southern Bypass Protection Zone (NSBPZ)
 - Undeveloped Approach
 - Gateway Into Norwich

DRAFT ISSUE FOR COMMENT	GB	31/05/17	P01
Revision Details	By	Date	Suffix
	Check		

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of

Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
LANDSCAPE DESIGNATIONS
AND CHARACTER AREAS**

Designed CS	Drawn MLS	Checked RH	Approved FL	Date 23/05/2017
Scale @ A3 1:12,500	Suitability S0	Page PAGE 1 of 1		

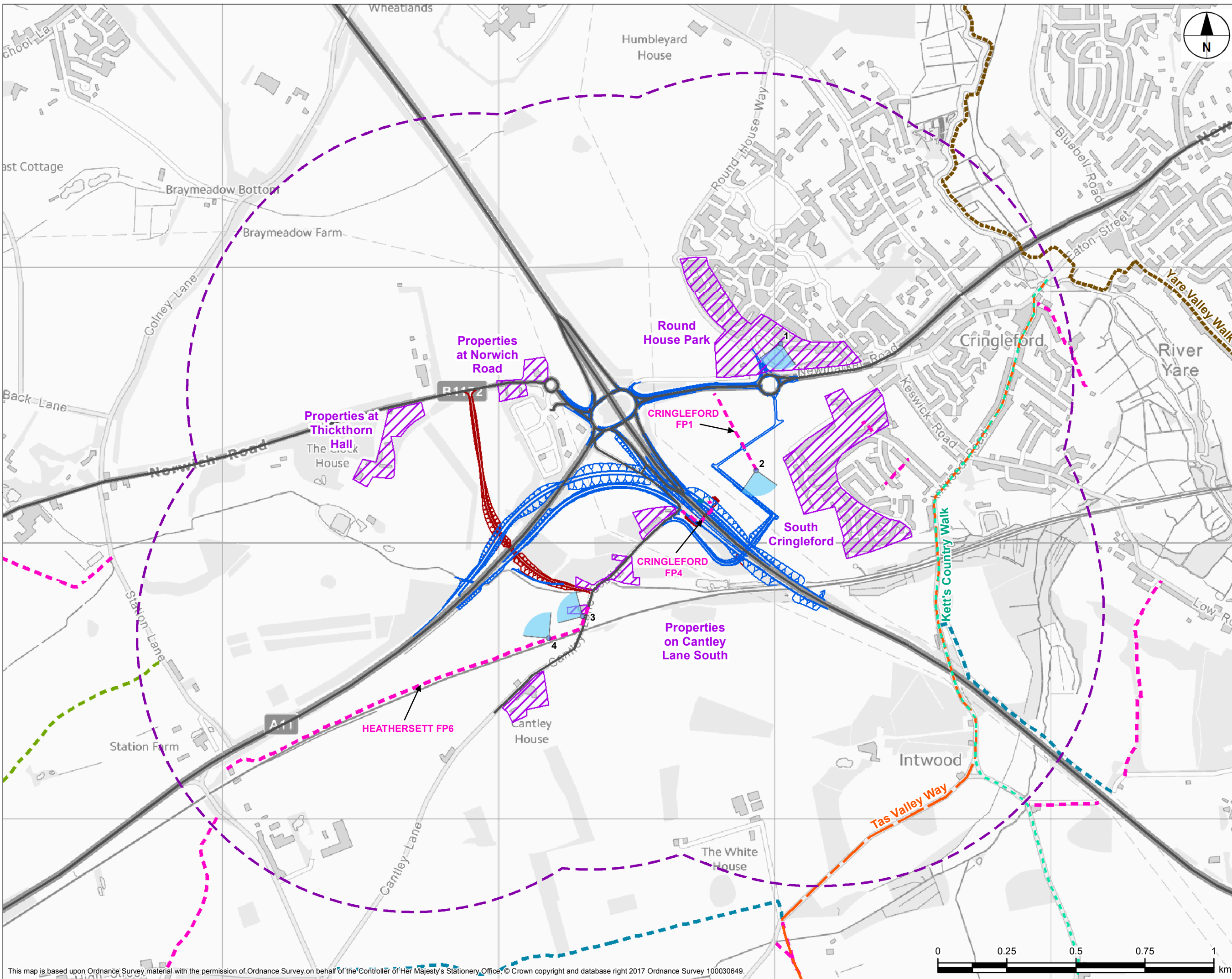
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Figure Number
Figure 7.2

Drawing Number HE551492-ACM-ELS-TJ-DR-GI-00002	Rev P01
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- LEGEND**
- Study Area (1km Buffer)
 - Scheme Option 3
 - Scheme Option 4
 - Settlement Group Identified As Potential Visual Receptor
 - Typical View
 - Road
 - Walking Trail
 - Tas Valley Way
 - Kett's Country Walk
 - Yare Valley Walk
 - Public Right of Way
 - Bridleway
 - Byway Open to All Traffic
 - Footpath

Typical Views:

ID	Name
1	Round House Park - Fern Drive
2	PROW, Cringleford FP1
3	PROW, Heathersett FP6 (a)
4	PROW, Heathersett FP6 (b)

DRAFT ISSUE FOR COMMENT	GB	31/05/17	P01
Revision Details	By	Date	Suffix
	Check		

Purpose of Issue
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Bedford
MK41 7LW

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Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION VISUAL RECEPTORS

Designed CS	Drawn MLS	Checked RH	Approved FL	Date 23/05/2017
Scale @ A3 1:12,500	Suitability S0	Page PAGE 1 of 1		

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Figure Number
Figure 7.3

Drawing Number
HE551492-ACM-ELS-TJ-DR-GI-00003

Rev
P01





Existing view

This image provides landscape and visual context only

PROJECT: A47 Thickthorn Junction
PCF Stage 2 Options Identification EAR



OS reference: 619021, 305724
Camera: Canon EOS 5D Mk2

Lens: 50mm (Canon EF 50mm f/1.8)
Date: 10.04.2017
Paper size: A3



PROJECT NO: 60530521
DRAWING NO: HE551492-ACM-ELS-TJ-DR-GI-0004

TITLE: Viewpoint 1- Round House Park, Fern Drive

FIGURE: 7.4



Existing view

This image provides landscape and visual context only

PROJECT: A47 Thickthorn Junction
PCF Stage 2 Options Identification EAR



OS reference: 618933, 305263
Camera: Canon EOS 5D Mk2

Lens: 50mm (Canon EF 50mm f/1.8)
Date: 12.04.2017
Paper size: A3



PROJECT NO: 60530521
DRAWING NO: HE551492-ACM-ELS-TJ-DR-GI-0005
TITLE: Viewpoint 2 -PRoW- Cringleford FP1
FIGURE: 7.5



Existing view

This image provides landscape and visual context only

PROJECT: A47 Thickthorn Junction
PCF Stage 2 Options Identification EAR



OS reference: 618303, 304734
Camera: Canon EOS 5D Mk2

Lens: 50mm (Canon EF 50mm f/1.8)
Date: 12.04.2017
Paper size: A3



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PROJECT NO: 60530521
DRAWING NO: HE551492-ACM-ELS-TJ-DR-GI-0006

TITLE: Viewpoint 3- PRoW - Hethersett FP6 (a)

FIGURE: 7.6



Existing view

This image provides landscape and visual context only

PROJECT: A47 Thickthorn Junction
PCF Stage 2 Options Identification EAR

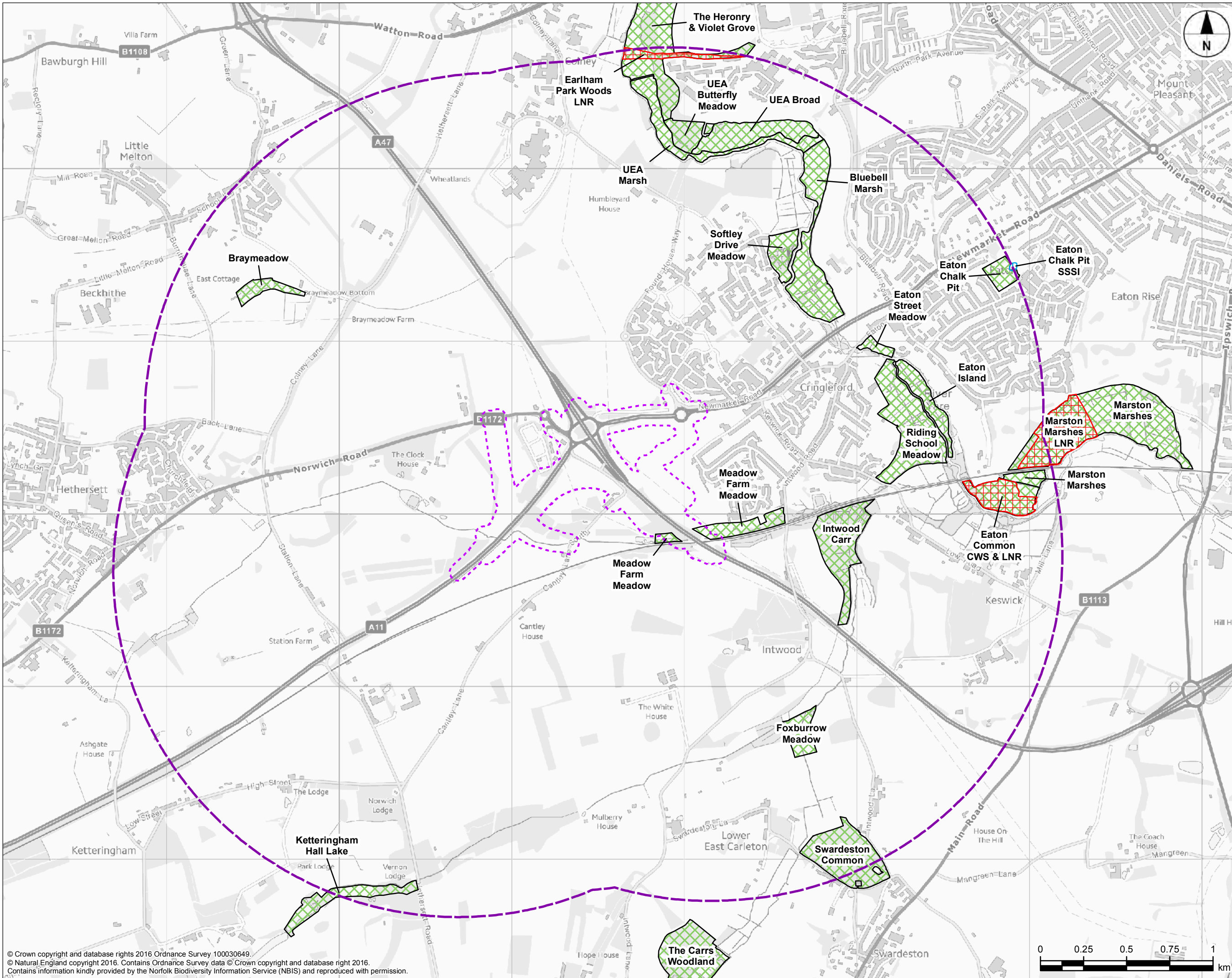


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Camera: Canon EOS 5D Mk2

Lens: 50mm (Canon EF 50mm f/1.8)
Date: 12.04.2017
Paper size: A3



PROJECT NO: 60530521
DRAWING NO: HE551492-ACM-ELS-TJ-DR-GI-0007
TITLE: Viewpoint 4- PRoW - Hethersett FP6 (b)
FIGURE: 7.7



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- LEGEND
- Scheme Boundary
 - 2km Buffer From Scheme Boundary
 - Site of Special Scientific Interest (SSSI)
 - Local Nature Reserve (LNR)
 - County Wildlife Site (CWS)

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Revision Details	By	Date	Suffix
	MP		
	Checkd		

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of

Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
NATURE CONSERVATION
DESIGNATIONS**

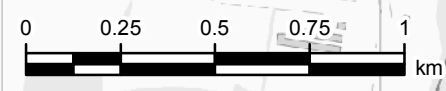
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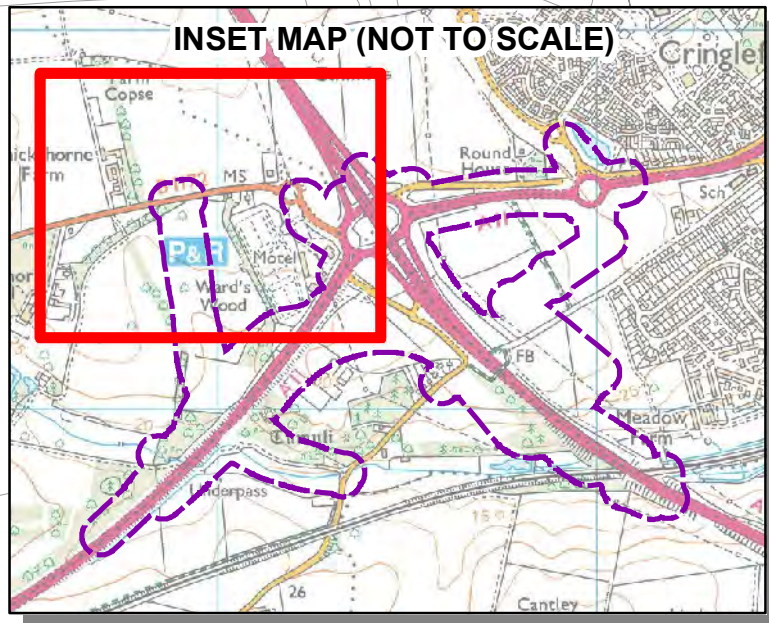
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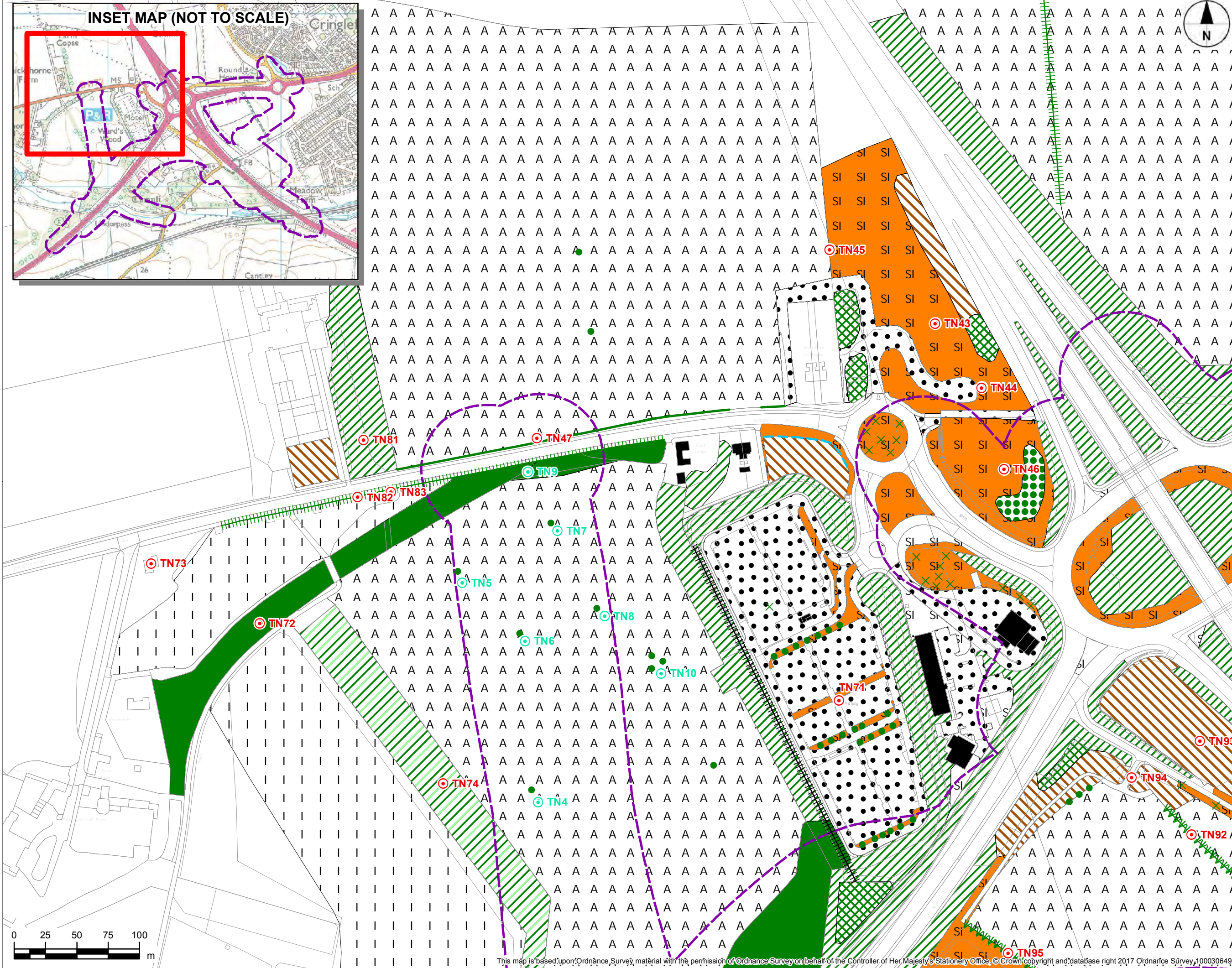
Figure Number
Figure 8.1

Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00001	Rev P01
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- LEGEND**
- Study Area Boundary
 - Target Note (2016)
 - Target Note (2017)
- Phase 1 Habitat Features - Points**
- × A2.2 - Scrub - Scattered
 - A3.1 - Parkland/Scattered Trees - Broadleaved
- Phase 1 Habitat Features - Linear**
- A3.1 - Broadleaved Parkland/Scattered Trees
 - J2.1.2 - Intact Hedge - Species-Poor
 - J2.3.1 - Hedge with Trees - Native Species-Rich
 - J2.3.2 - Hedge with Trees - Species-Poor
 - J2.4 - Fence
 - J2.6 - Dry Ditch
- Phase 1 Habitat Features - Areas**
- A1.1.1 - Broadleaved Woodland - Semi-Natural
 - A1.1.2 - Broadleaved Woodland - Plantation
 - A1.3.2 - Mixed Woodland - Plantation
 - A2.1 - Scrub - Dense/Continuous
 - A3.1 - Broadleaved Parkland/Scattered Trees
 - B2.2 - Neutral Grassland - Semi-Improved
 - B4 - Improved Grassland
 - B6 - Poor Semi-Improved Grassland
 - C3.1 - Tall Ruderal
 - J1.1 - Arable
 - J3.6 - Building
 - J4 - Bare Ground (Hard-Standing)



DRAFT ISSUE FOR COMMENT	GB	MP	31/05/17	P01
Revision Details	By	Check	Date	Suffix

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Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title: **A47 CORRIDOR PCF STAGE 2**

Drawing Title: **A47/A11 THICKTHORN JUNCTION PHASE 1 HABITAT SURVEY**

Designed	Drawn	Checked	Approved	Date
GB	GB	MP	FL	17/05/2017

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Sustainability: SO
Page: PAGE 1 of 4

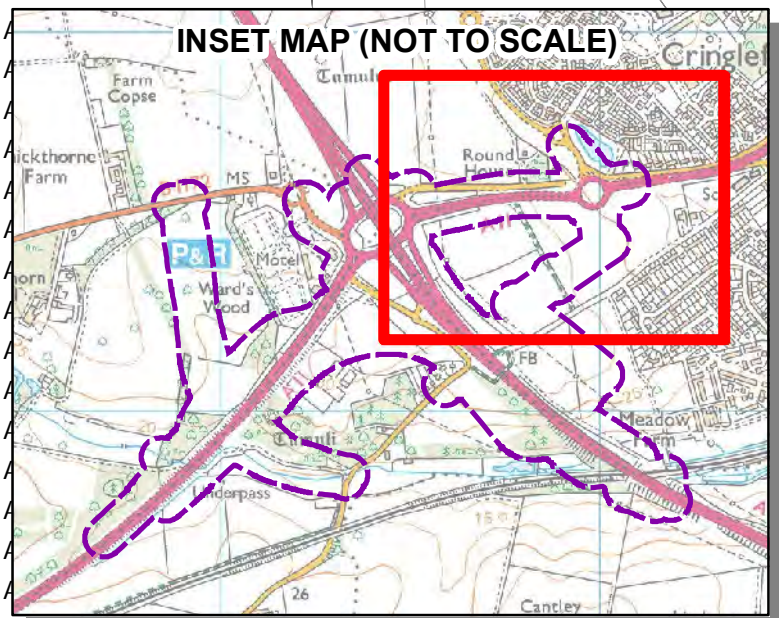
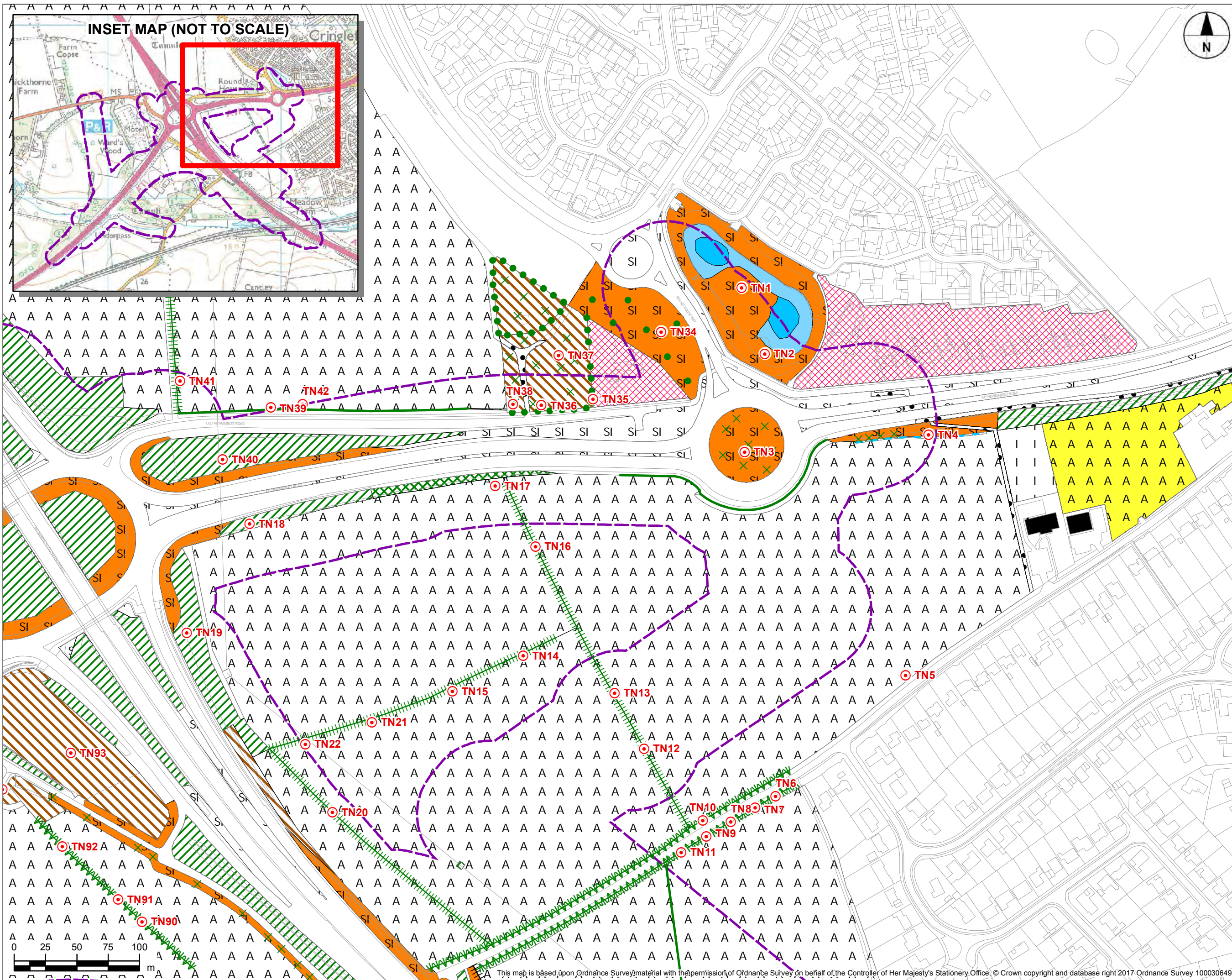


Figure Number: **Figure 8.2a**

Drawing Number: HE551492-ACM-EBD-TJ-DR-GI-00002	Rev: P01
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LEGEND

- Study Area
- Target Note (2016)

Phase 1 Habitat Features - Points

- A2.2 - Scrub - Scattered
- A3.1 - Parkland/Scattered Trees - Broadleaved

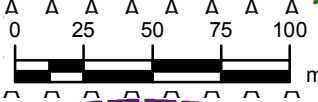
Phase 1 Habitat Features - Linear

- A3.1 - Broadleaved Parkland/Scattered Trees
- J2.1.2 - Intact Hedge - Species-Poor
- J2.3.1 - Hedge with Trees - Native Species-Rich
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- J2.4 - Fence
- J2.6 - Dry Ditch

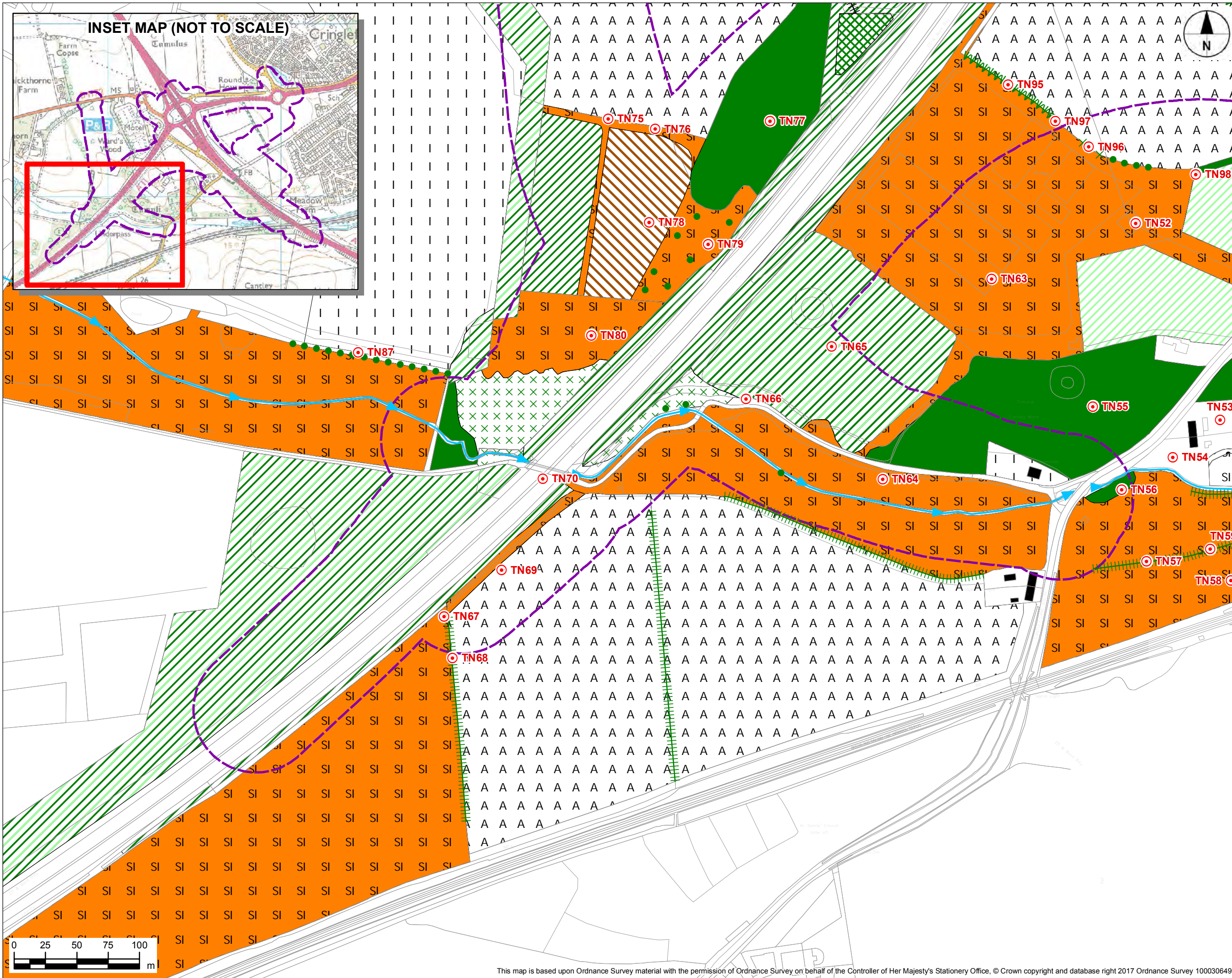
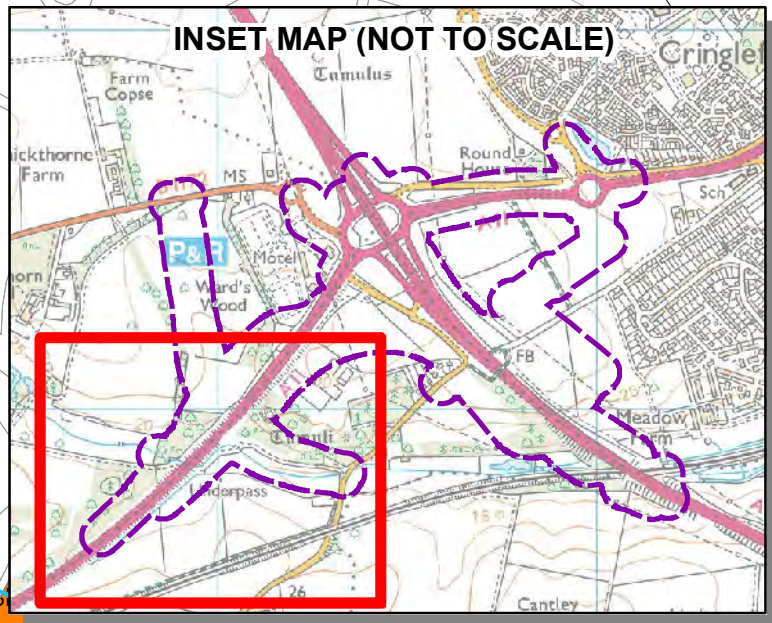
Phase 1 Habitat Features - Areas

- A1.1.2 - Broadleaved Woodland - Plantation
- A2.1 - Scrub - Dense/Continuous
- B2.2 - Neutral Grassland - Semi-Improved
- B4 - Improved Grassland
- B6 - Poor Semi-Improved Grassland
- C3.1 - Tall Ruderal
- F1 - Swamp
- G1 - Standing Water
- J1.1 - Arable
- J1.2 - Amenity
- J3.6 - Building
- J4 - Bare Ground (Hard-Standing)
- NA - Land Inaccessible/Not Surveyed

DRAFT ISSUE FOR COMMENT		GB	MP	31/05/17	P01
Revision Details		By	Check	Date	Suffix
Purpose of Issue					
DRAFT FOR COMMENT					
Client					
Highways England Woodlands Manton Lane Bedford MK41 7LW					
Project Title					
A47 CORRIDOR PCF STAGE 2					
Drawing Title					
A47/A11 THICKTHORN JUNCTION PHASE 1 HABITAT SURVEY					
Designed	Drawn	Checked	Approved	Date	
GB	GB	MP	FL	17/05/2017	
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Figure Number					
Figure 8.2b					
Drawing Number					Rev
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- LEGEND**
- Study Area Boundary
 - Target Note (2016)
 - Phase 1 Habitat Features - Points**
 - A2.2 - Scrub - Scattered
 - A3.1 - Parkland/Scattered Trees - Broadleaved
 - Phase 1 Habitat Features - Linear**
 - A3.1 - Broadleaved Parkland/Scattered Trees
 - G2 - Running Water
 - J2.3.1 - Hedge with Trees - Native Species-Rich
 - J2.3.2 - Hedge with Trees - Species-Poor
 - J2.4 - Fence
 - Phase 1 Habitat Features - Areas**
 - A1.1.1 - Broadleaved Woodland - Semi-Natural
 - A1.1.2 - Broadleaved Woodland - Plantation
 - A1.2.2 - Coniferous Woodland - Plantation
 - A1.3.2 - Mixed Woodland - Plantation
 - A2.1 - Scrub - Dense/Continuous
 - A2.2 - Scrub - Scattered
 - B2.2 - Neutral Grassland - Semi-Improved
 - B4 - Improved Grassland
 - B6 - Poor Semi-Improved Grassland
 - C3.1 - Tall Ruderal
 - J1.1 - Arable
 - J3.6 - Building
 - J4 - Bare Ground (Hard-Standing)

DRAFT ISSUE FOR COMMENT	GB	MP	17/05/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION PHASE 1 HABITAT SURVEY

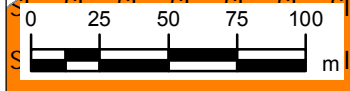
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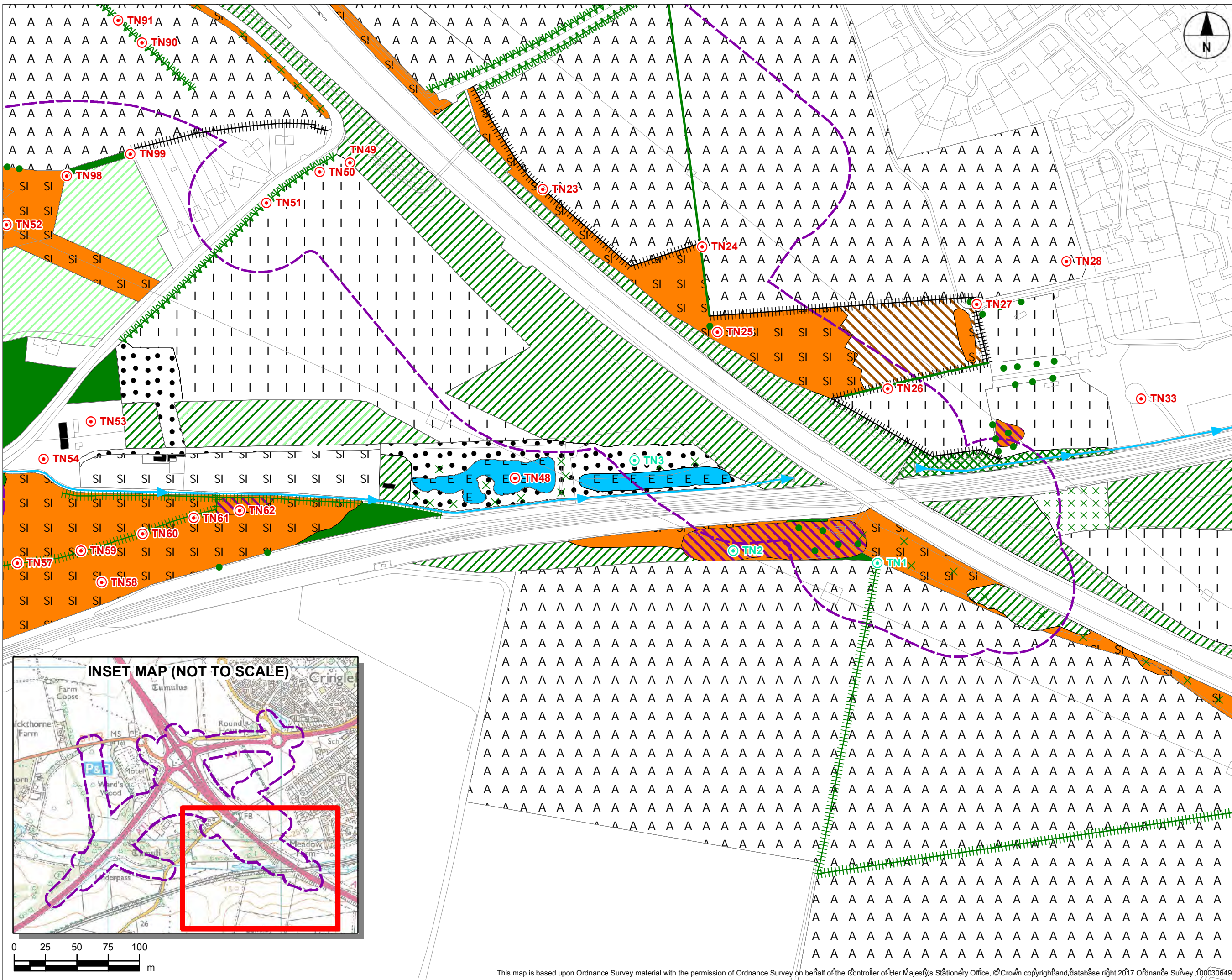
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Figure Number
Figure 8.2c

Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00002	Rev P01
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- LEGEND**
- Study Area Boundary
 - Target Note (2016)
 - Target Note (2017)
- Phase 1 Habitat Features - Points**
- × A2.2 - Scrub - Scattered
 - A3.1 - Parkland/Scattered Trees - Broadleaved
- Phase 1 Habitat Features - Linear**
- A3.1 - Broadleaved Parkland/Scattered Trees
 - ▶ G2 - Running Water
 - J2.1.2 - Intact Hedge - Species-Poor
 - ~ J2.3.1 - Hedge with Trees - Native Species-Rich
 - | | | J2.3.2 - Hedge with Trees - Species-Poor
 - + + + J2.4 - Fence
- Phase 1 Habitat Features - Areas**
- A1.1.1 - Broadleaved Woodland - Semi-Natural
 - A1.1.2 - Broadleaved Woodland - Plantation
 - A1.2.2 - Coniferous Woodland - Plantation
 - A1.3.2 - Mixed Woodland - Plantation
 - A2.1 - Scrub - Dense/Continuous
 - × A2.2 - Scrub - Scattered
 - B2.2 - Neutral Grassland - Semi-Improved
 - B4 - Improved Grassland
 - B5 - Marsh/Marshy Grassland
 - B6 - Poor Semi-Improved Grassland
 - C3.1 - Tall Ruderal
 - G1.1 - Standing Water - Eutrophic
 - J1.1 - Arable
 - J3.6 - Building
 - J4 - Bare Ground (Hard-Standing)

DRAFT ISSUE FOR COMMENT	GB	MP	17/05/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue

DRAFT FOR COMMENT

Client
 Highways England
 Woodlands
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 Bedford
 MK41 7LW

Project Title
**A47 CORRIDOR
 PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
 PHASE 1 HABITAT SURVEY**

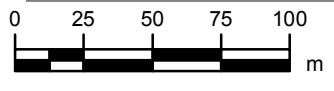
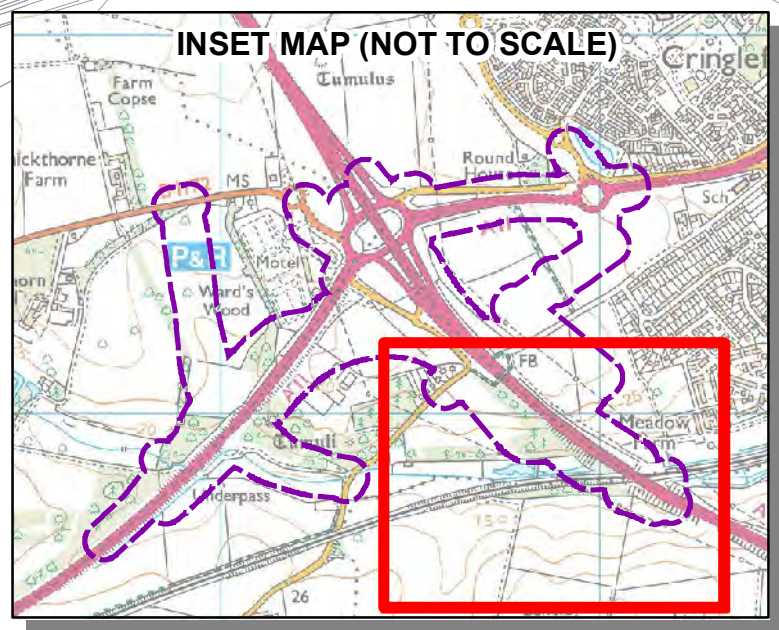
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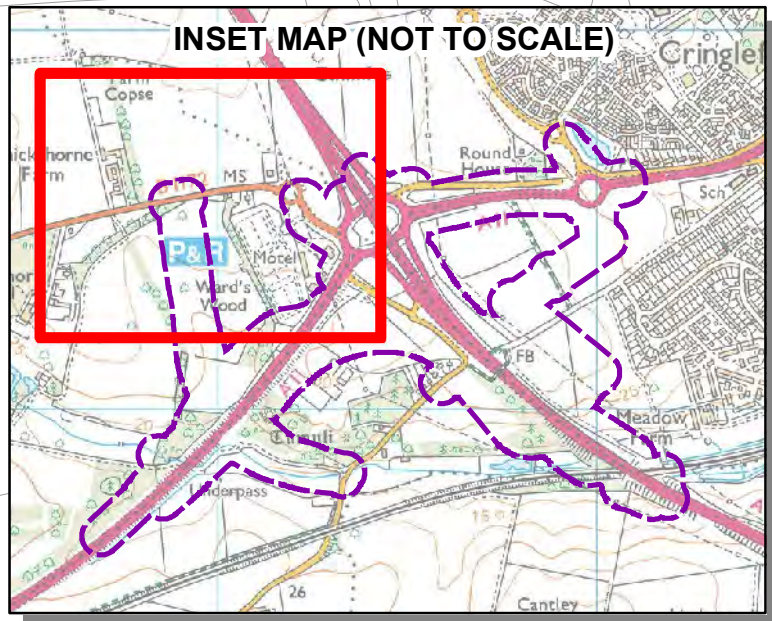
Scale @ A3
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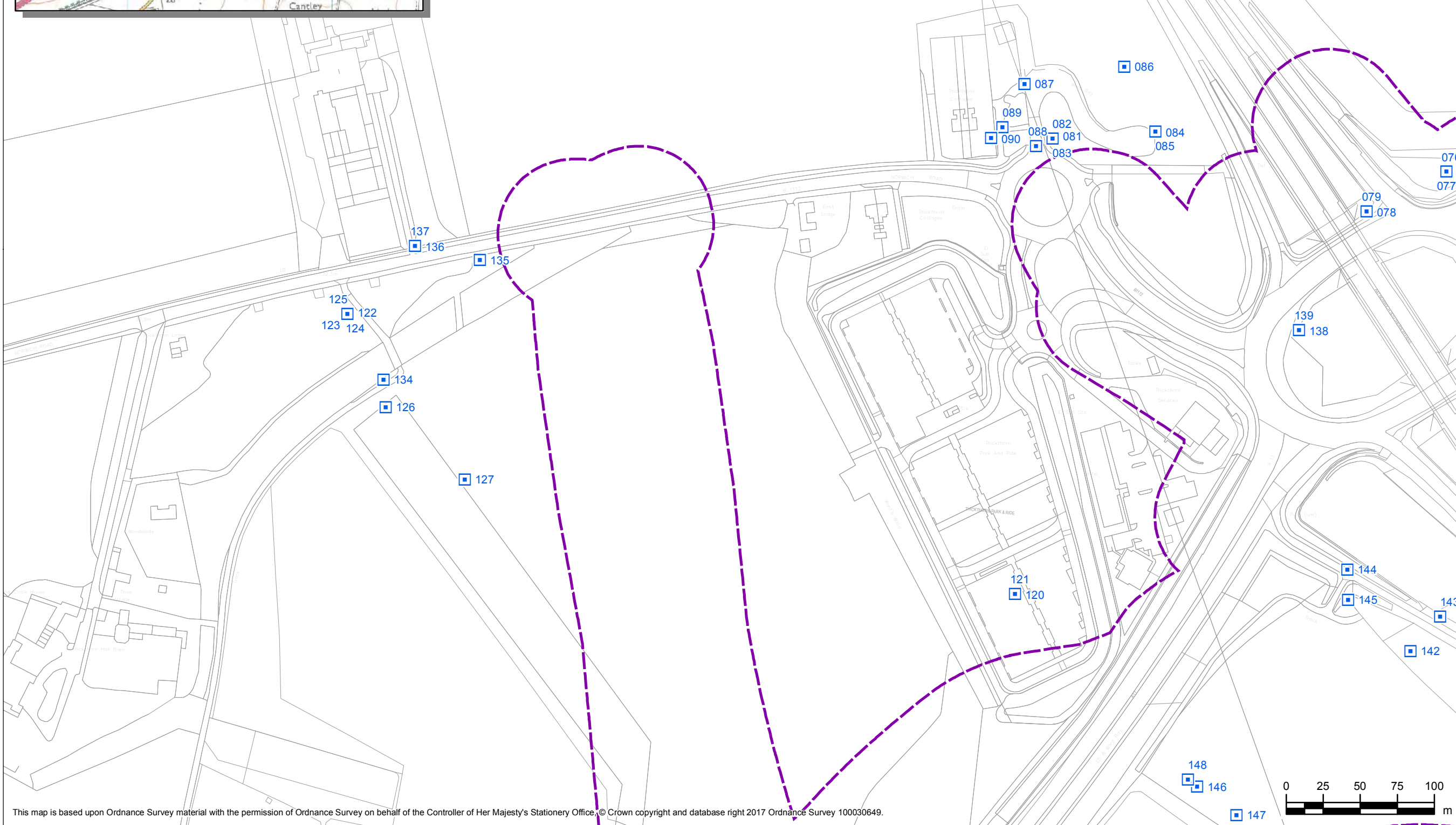
Figure Number
 Figure 8.2d





LEGEND

- Study Area Boundary
- Photograph Location



DRAFT ISSUE FOR COMMENT	GB	MP	31/05/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION PHASE 1 HABITAT SURVEY - PHOTOGRAPH LOCATIONS

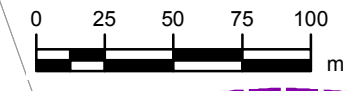
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Scale @ A3 NOT TO SCALE	Suitability S0	Page PAGE 1 of 4		

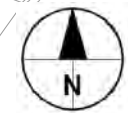
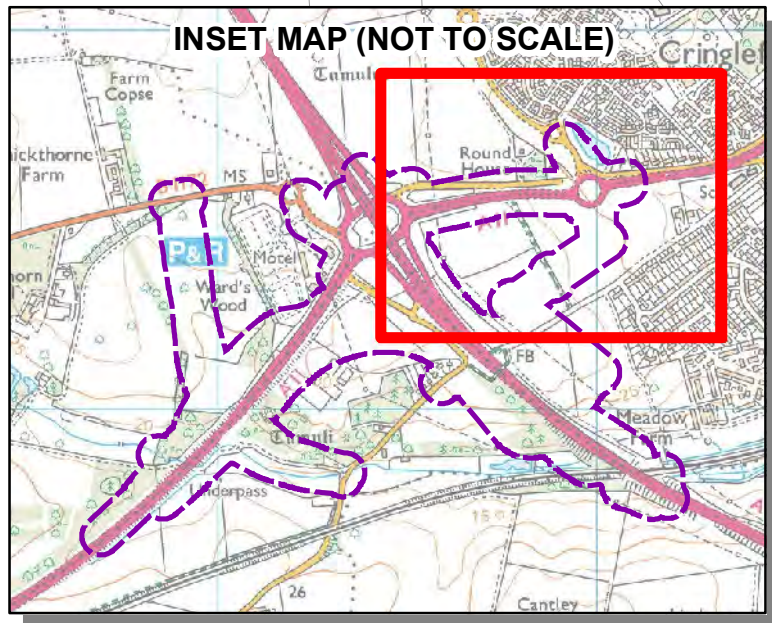
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Figure Number
Figure 8.3a

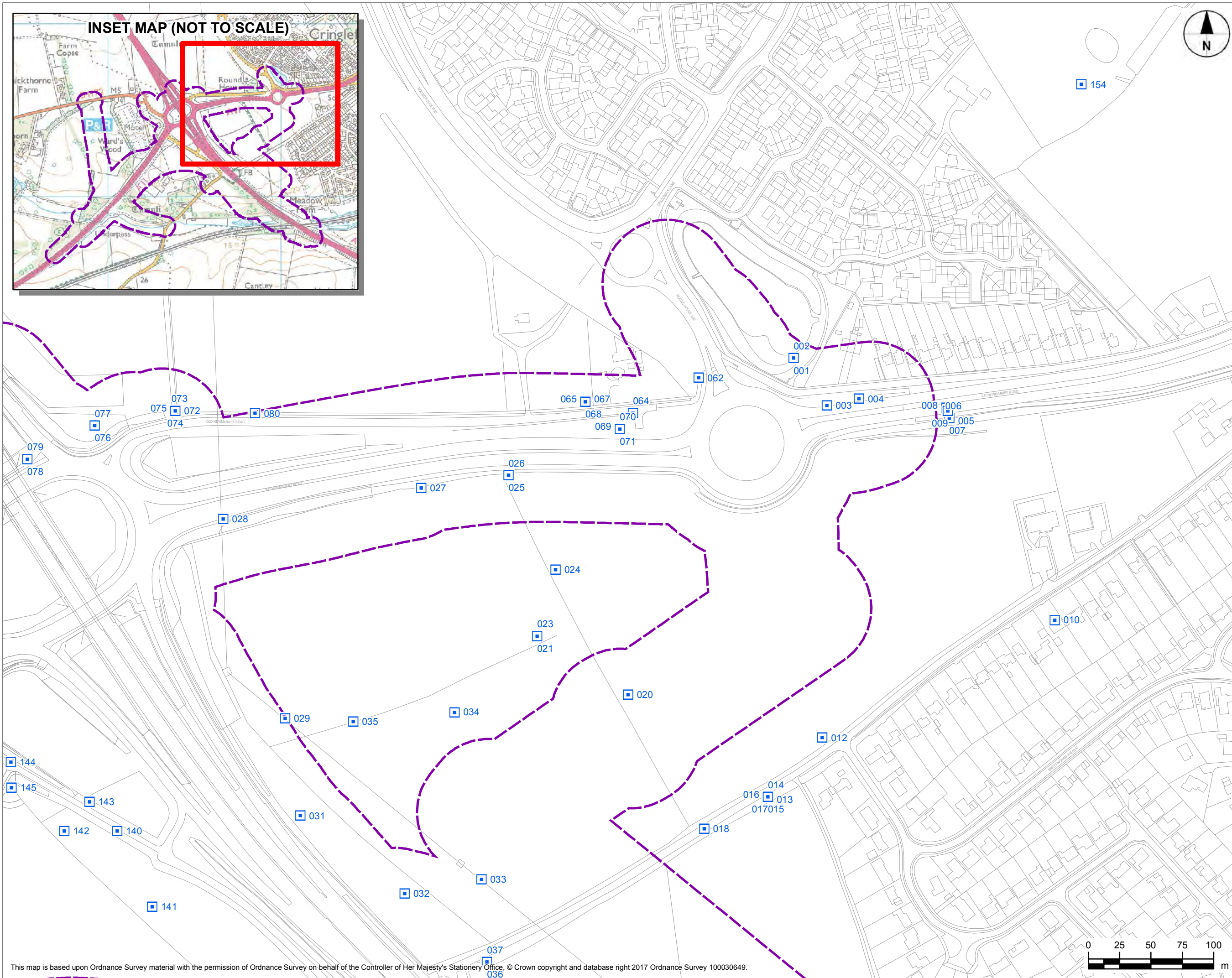
Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00003	Rev P01
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LEGEND

- Study Area
- Photograph Location



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Revision Details	By MP	Date	Suffix
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MK41 7LW

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Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
PHASE 1 HABITAT SURVEY -
PHOTOGRAPH LOCATIONS**

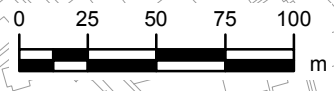
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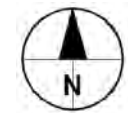
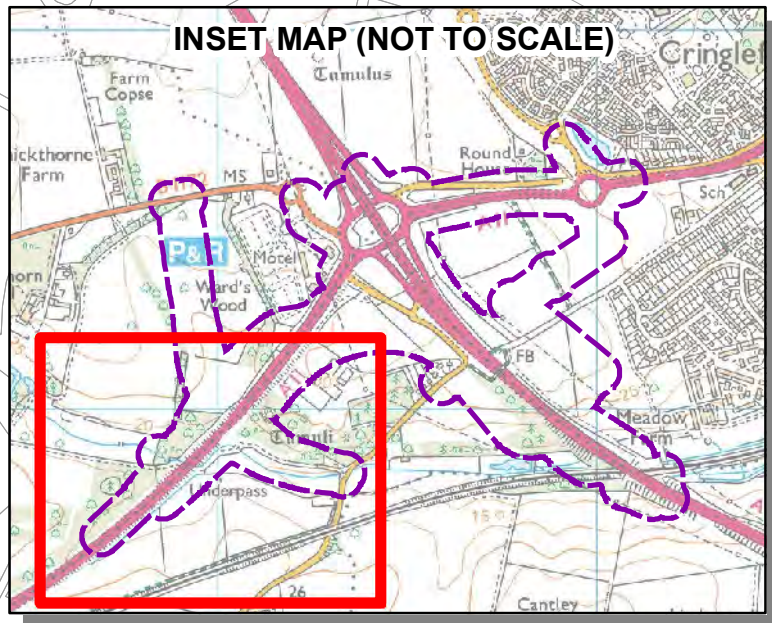
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Figure Number
Figure 8.3b

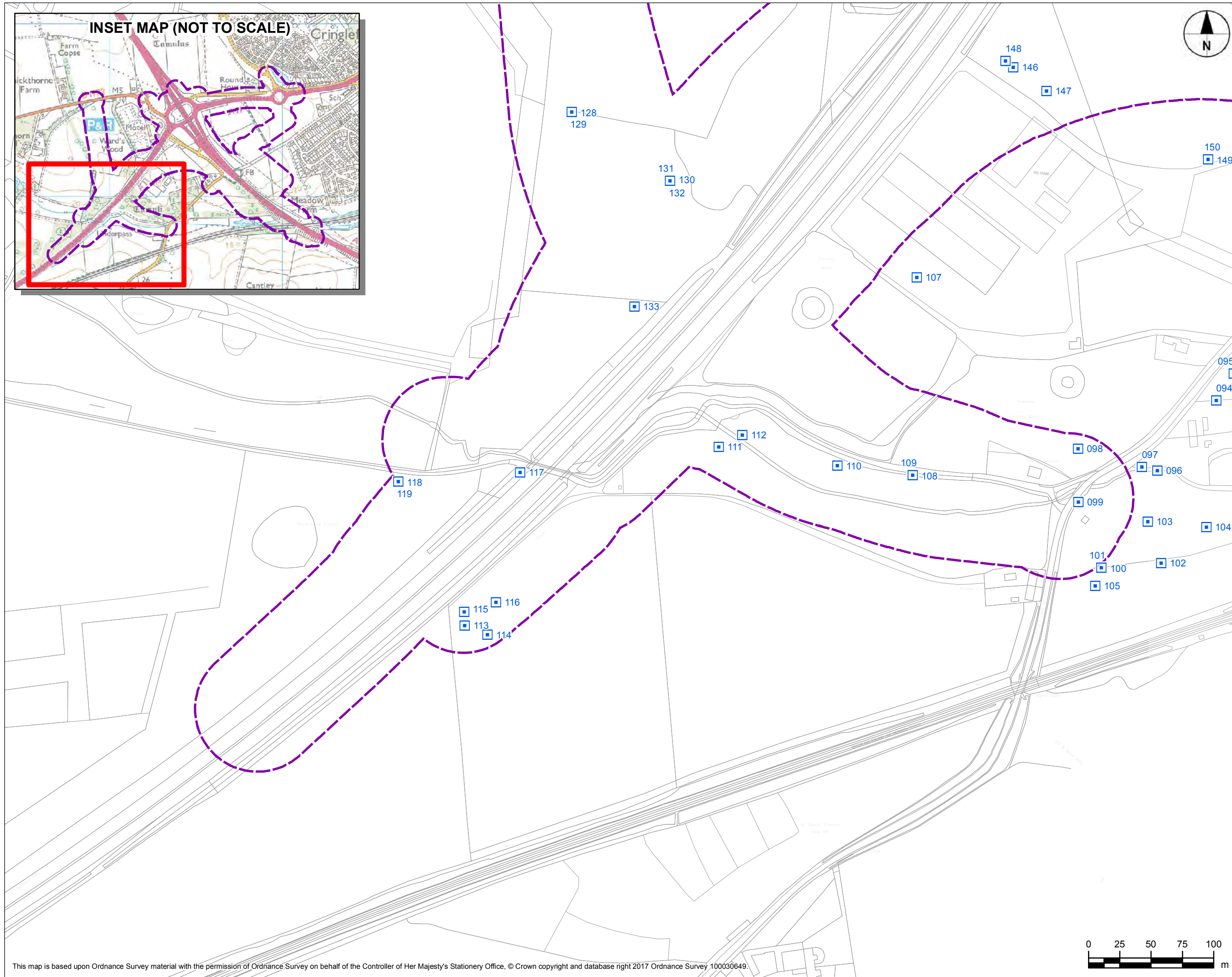
Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00003	Rev P01
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LEGEND

- Study Area
- Photograph Location



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Project Title
**A47 CORRIDOR
 PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
 PHASE 1 HABITAT SURVEY -
 PHOTOGRAPH LOCATIONS**

Designed GB	Drawn GB	Checked MP	Approved FL	Date 17/05/2017
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Scale @ A3
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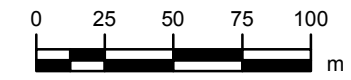
Suitability
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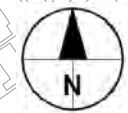
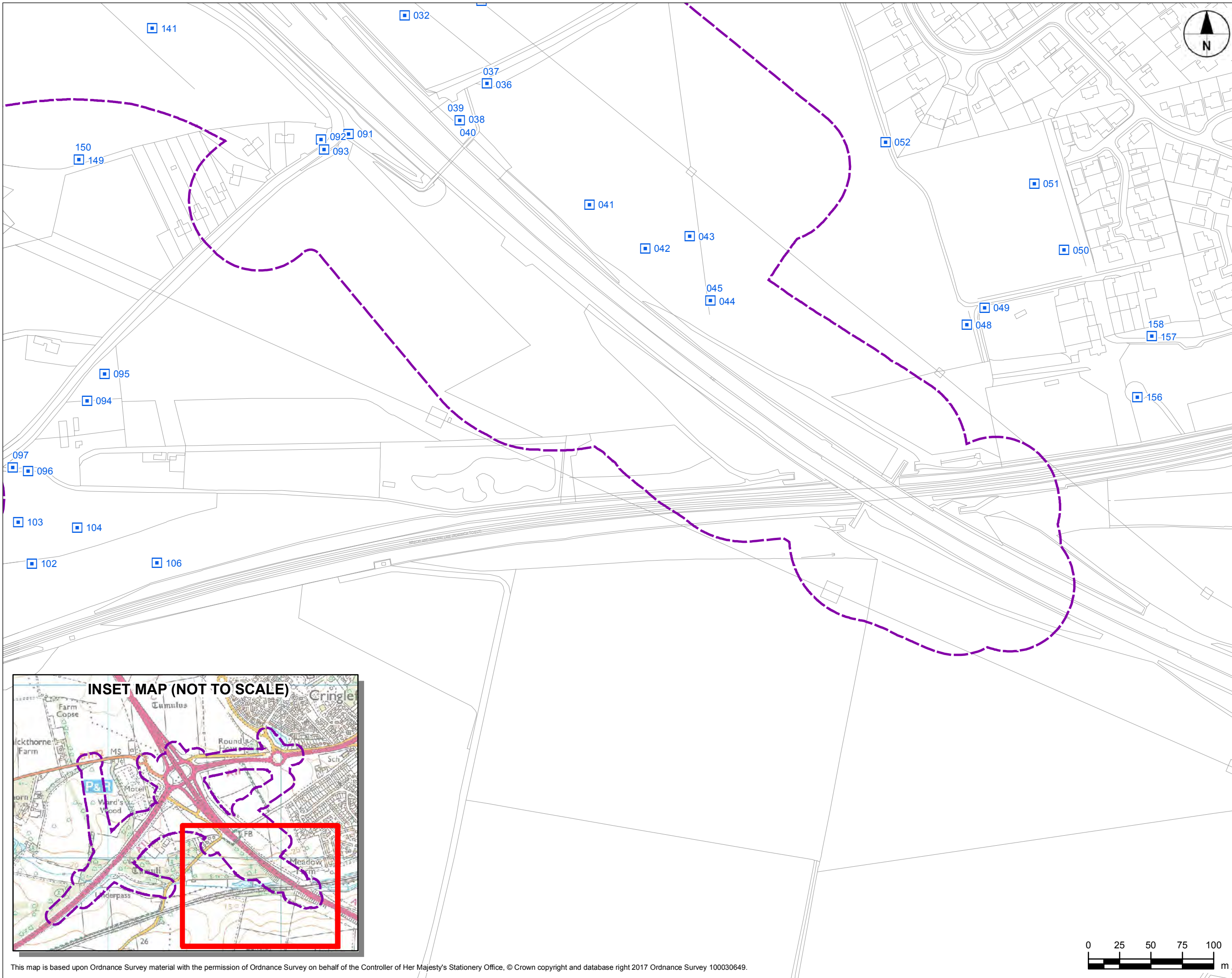
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 PAGE 3 of 4



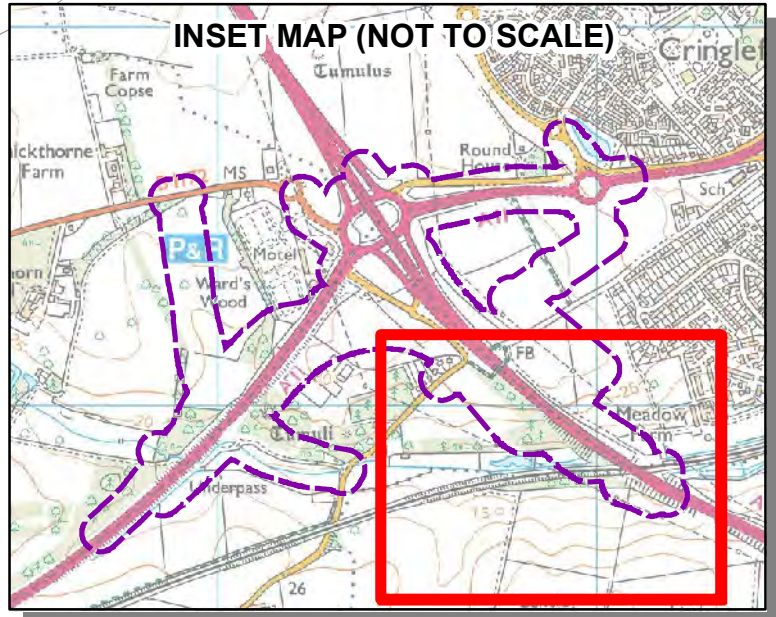
Figure Number
 Figure 8.3c

Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00003	Rev P01
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- LEGEND**
- Study Area
 - Photograph Location



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**A47 CORRIDOR
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Drawing Title
**A47/A11 THICKTHORN JUNCTION
PHASE 1 HABITAT SURVEY -
PHOTOGRAPH LOCATIONS**

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Figure Number
Figure 8.3d

Drawing Number
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Rev
P01



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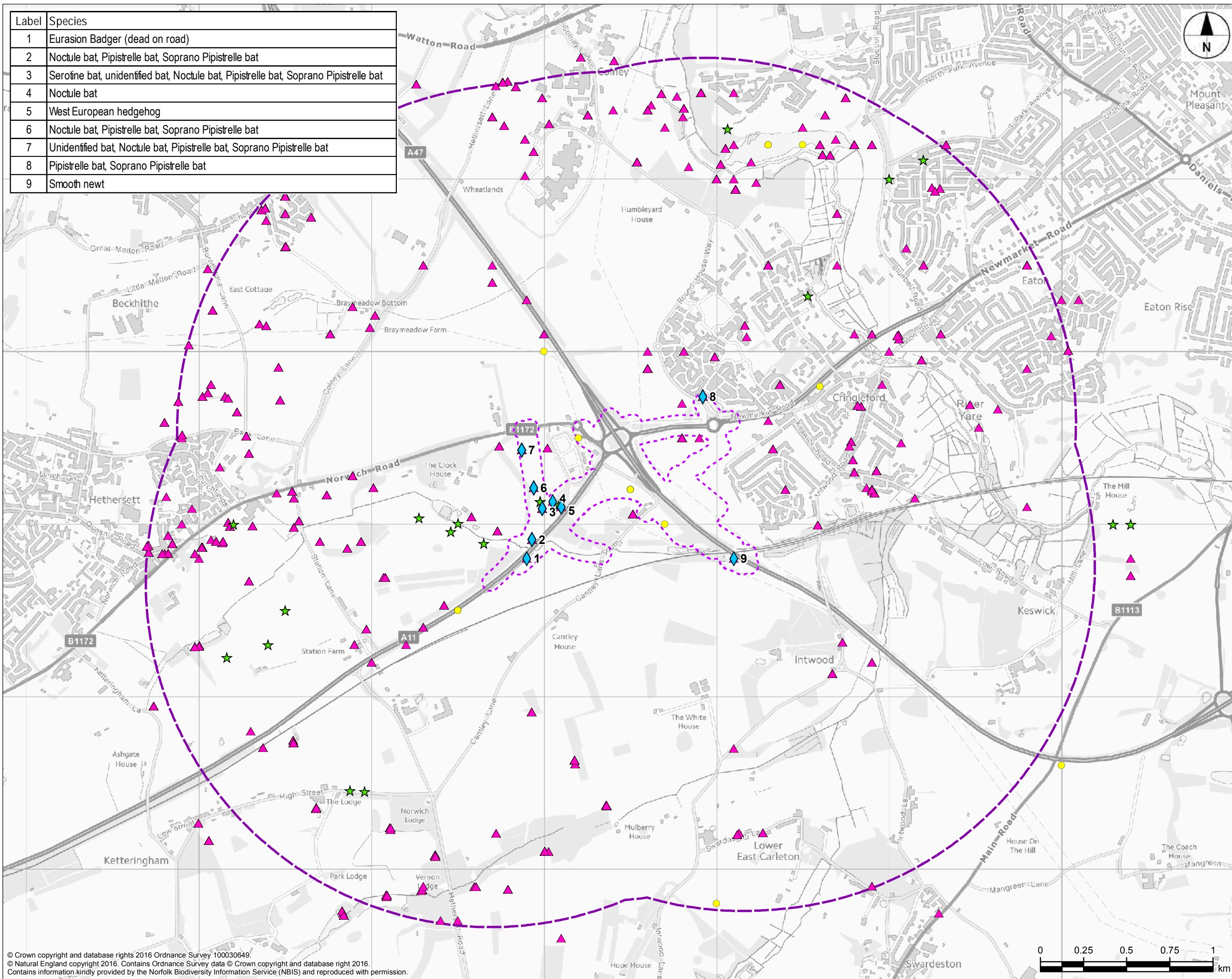
Label	Species
1	Eurasian Badger (dead on road)
2	Noctule bat, Pipistrelle bat, Soprano Pipistrelle bat
3	Serotine bat, unidentified bat, Noctule bat, Pipistrelle bat, Soprano Pipistrelle bat
4	Noctule bat
5	West European hedgehog
6	Noctule bat, Pipistrelle bat, Soprano Pipistrelle bat
7	Unidentified bat, Noctule bat, Pipistrelle bat, Soprano Pipistrelle bat
8	Pipistrelle bat, Soprano Pipistrelle bat
9	Smooth newt



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- LEGEND**
- Scheme Boundary
 - 2km Buffer From Scheme Boundary
 - Veteran Tree
 - Species of Conservation Concern Record
 - Non-Native Species Record
 - SoCC Record Within Scheme Boundary (Labelled)



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	Check		

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Project Title
**A47 CORRIDOR
PCF STAGE 2**

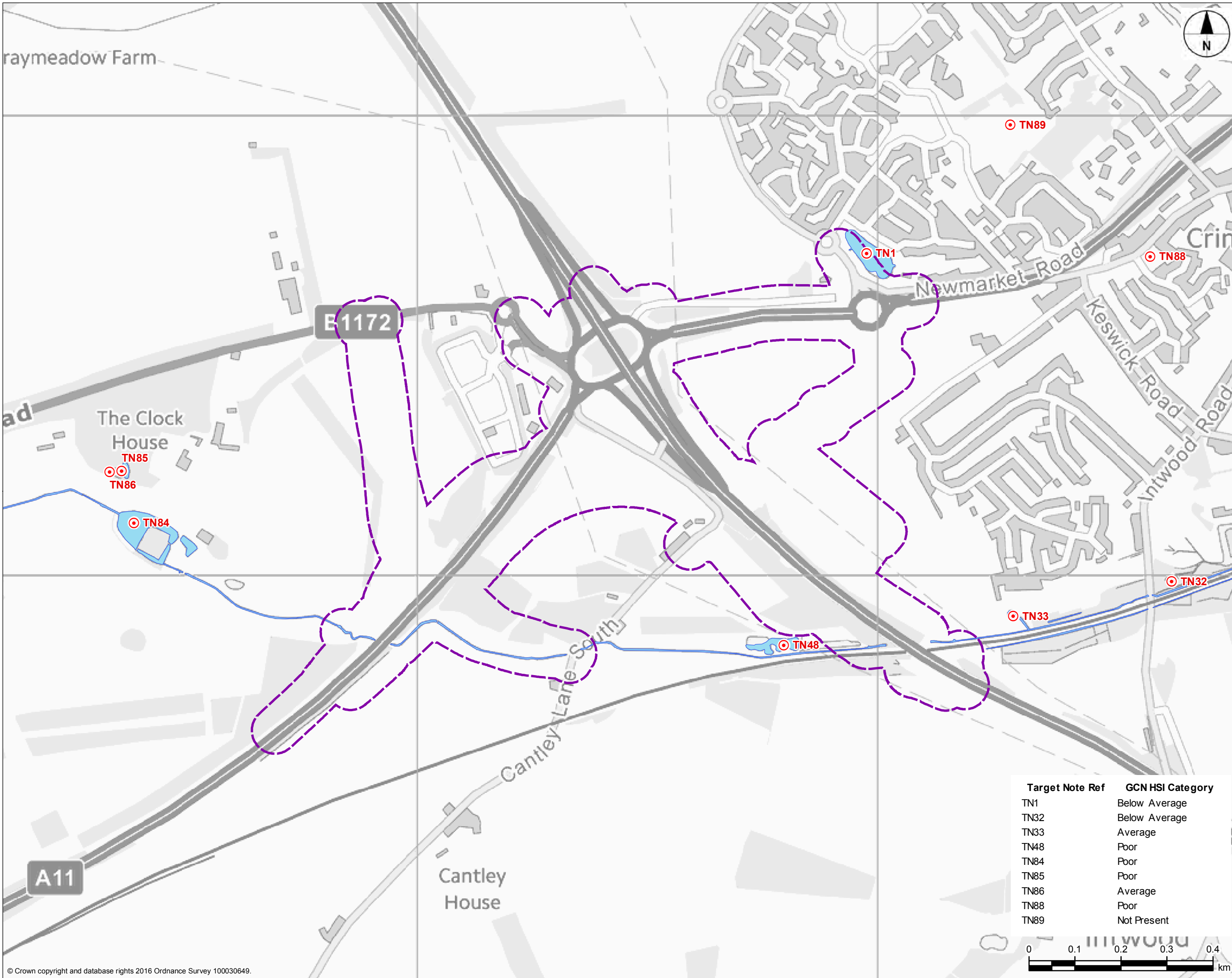
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**A47/A11 THICKTHORN JUNCTION
PROTECTED & NOTABLE SPECIES**

Designed HP	Drawn GB	Checked MP	Approved FL	Date 18/05/2017
Scale @ A3 1:20,000	Suitability SO	Page PAGE 1 of 1		

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Figure Number Figure 8.4	Rev P01
Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00004	



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- LEGEND
- Scheme Boundary
 - Waterbody
 - Target Note

Habitat Suitability Index (HSI) Categories:

Poor
Below Average
Average
Good
Excellent

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Revision Details	By	Check	Date	Suffix

Purpose of Issue
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Working on behalf of
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Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION GREAT CRESTED NEWT (GCN) HABITAT SUITABILITY INDEX (HSI) RESULTS PLAN

Designed HP	Drawn GB	Checked MP	Approved FL	Date 18/05/2017
Scale @ A3	Suitability	Page	PAGE 1 of 1	
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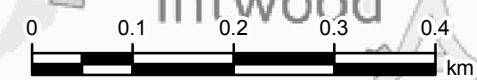
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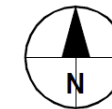


Figure Number
Figure 8.5

Drawing Number HE551492-ACM-EBD-TJ-DR-GI-00005	Rev P01
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Target Note Ref	GCN HSI Category
TN1	Below Average
TN32	Below Average
TN33	Average
TN48	Poor
TN84	Poor
TN85	Poor
TN86	Average
TN88	Poor
TN89	Not Present





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LEGEND

- 1km Noise Study Area
- ▲ Noise Monitoring Location
- Public Right of Way
- Noise Important Area
- Scheduled Monument
- Community Facility
- Place of Worship
- Medical Facility
- Educational Facility
- Residential



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Revision Details	By	Check	Date	Suffix

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Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
NOISE LOCATION PLAN**

Designed GB	Drawn AM	Checked SS	Approved FL	Date 30/05/2017
Scale @ A3 1:12,000	Suitability S0	Page PAGE 1 of 1		

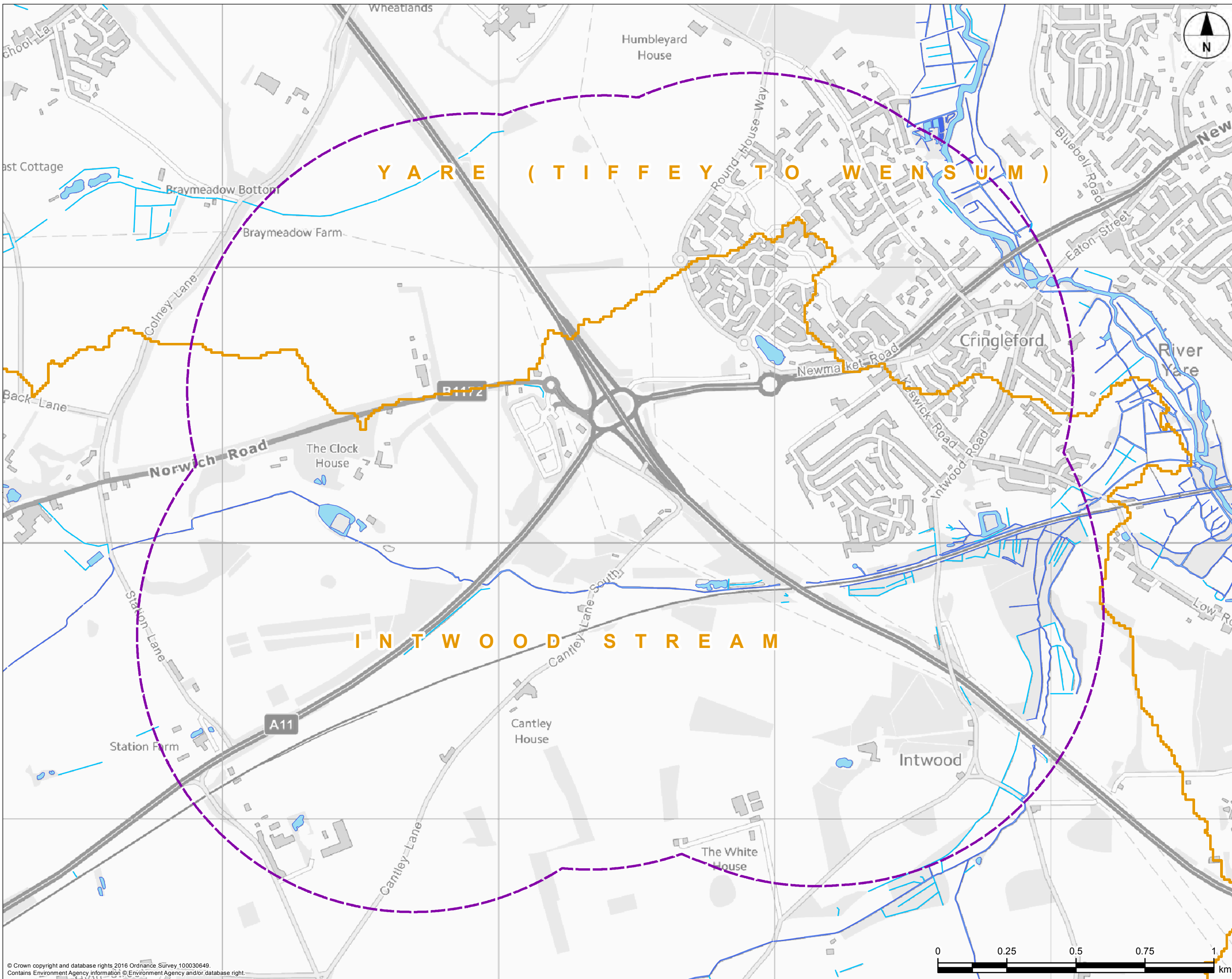
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Figure Number
Figure 9.1

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- LEGEND
- Study Area (1km Buffer)
 - WFD River Waterbody Catchment Boundary
 - Watercourse
 - Waterbody

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Revision Details	By	Check	Date	Suffix

Purpose of Issue
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Highways England
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MK41 7LW

Working on behalf of

Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
SURFACE WATER ENVIRONMENT**

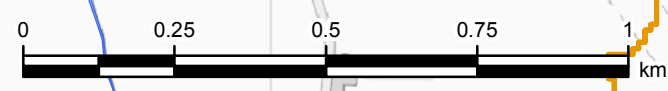
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Scale @ A3 1:12,500	Suitability S0	Page PAGE 1 of 1		

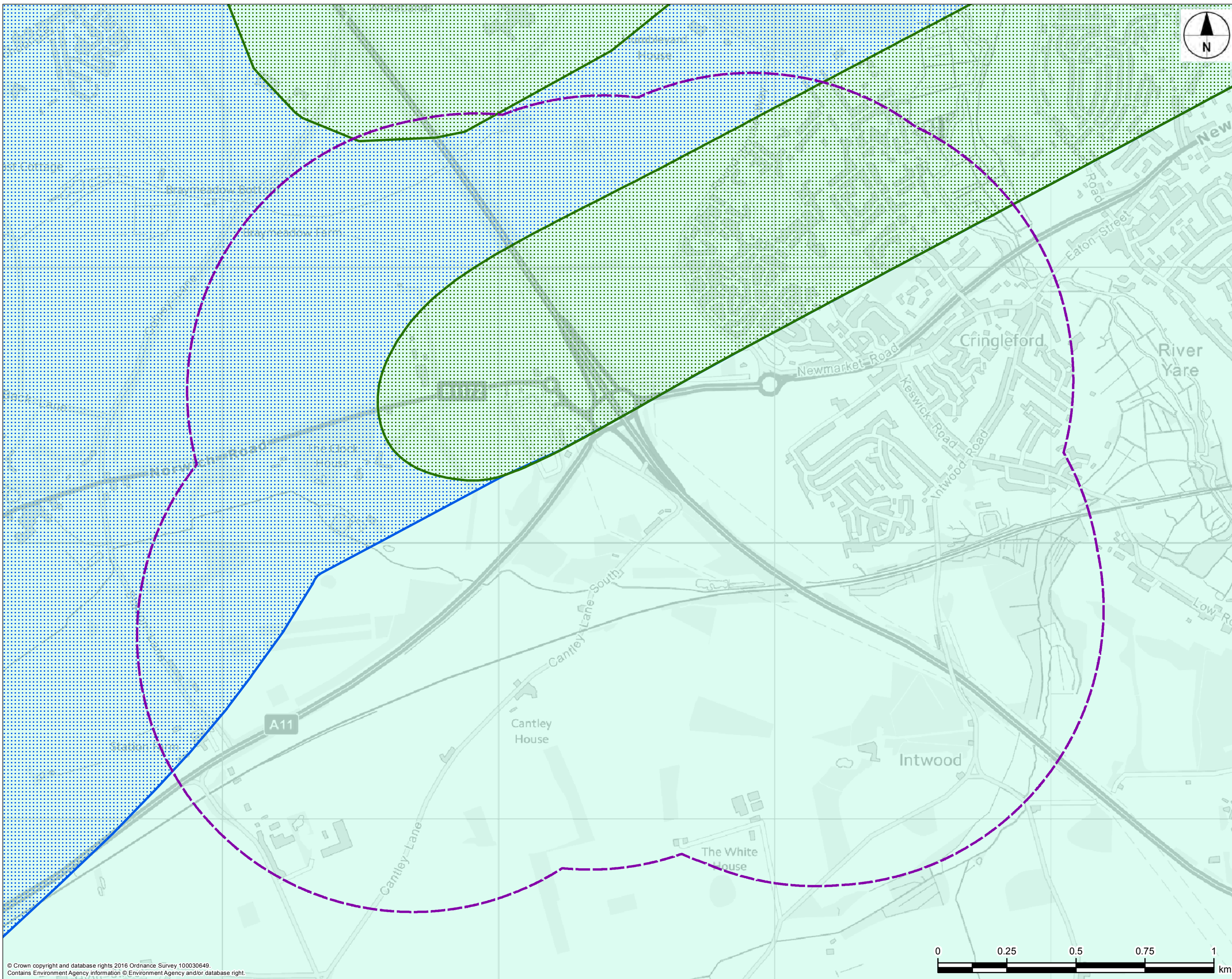
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Figure 10.1

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- LEGEND**
- Study Area (1km Buffer)
 - Principal Aquifer
 - Source Protection Zones (SPZ)**
 - Zone II - Outer Protection Zone
 - Zone III - Total Catchment

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Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
GROUNDWATER ENVIRONMENT**

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Scale @ A3 1:12,500	Suitability S0	Page PAGE 1 of 1		

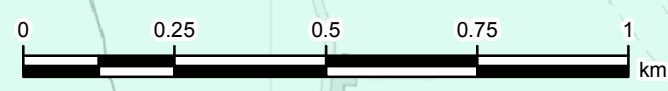
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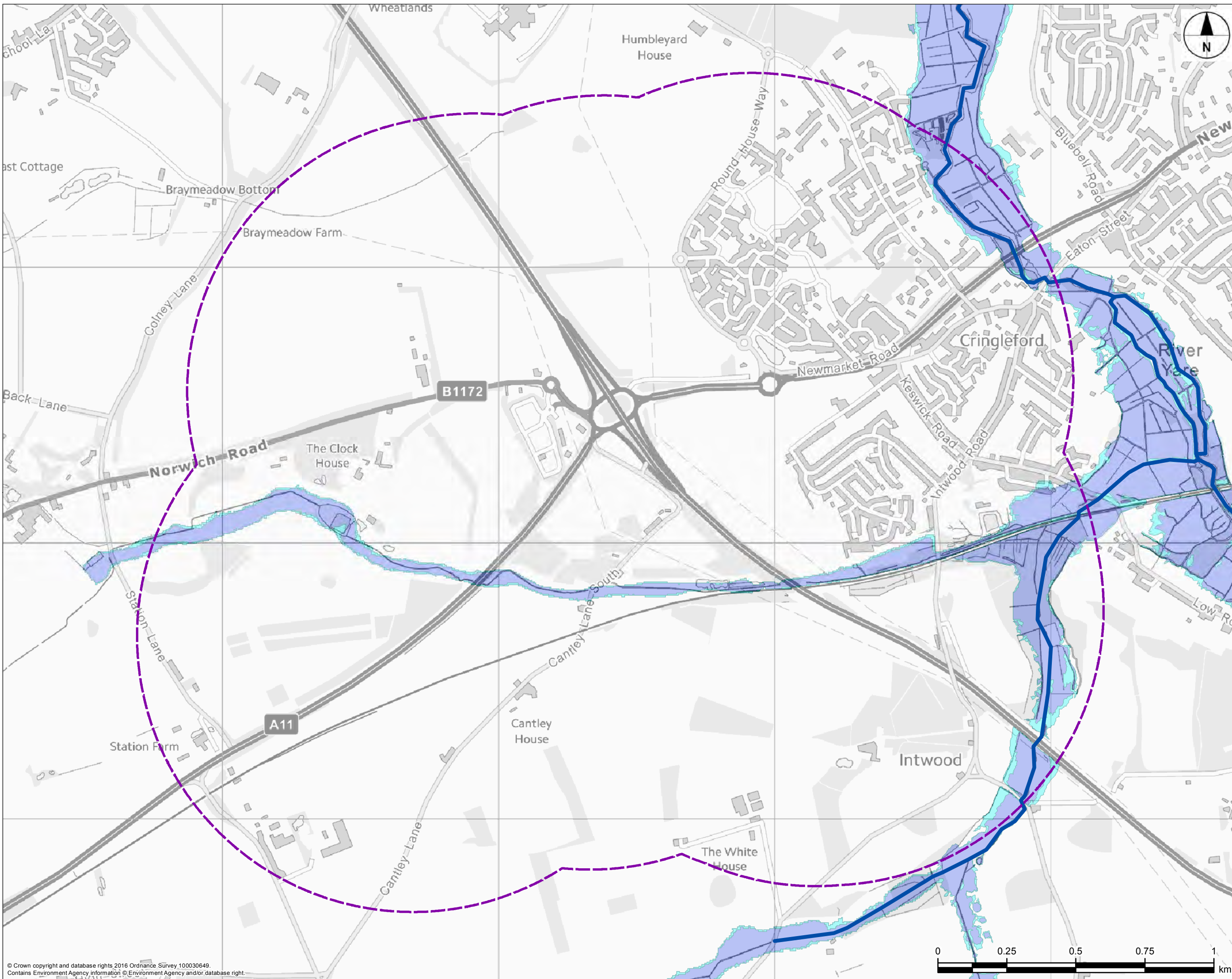
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Figure Number
Figure 10.2

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Rev
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LEGEND

- Study Area (1km Buffer)
- Main River Line
- Flood Zone 3
- Flood Zone 2

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A47/A11 THICKTHORN JUNCTION FLOOD RISK

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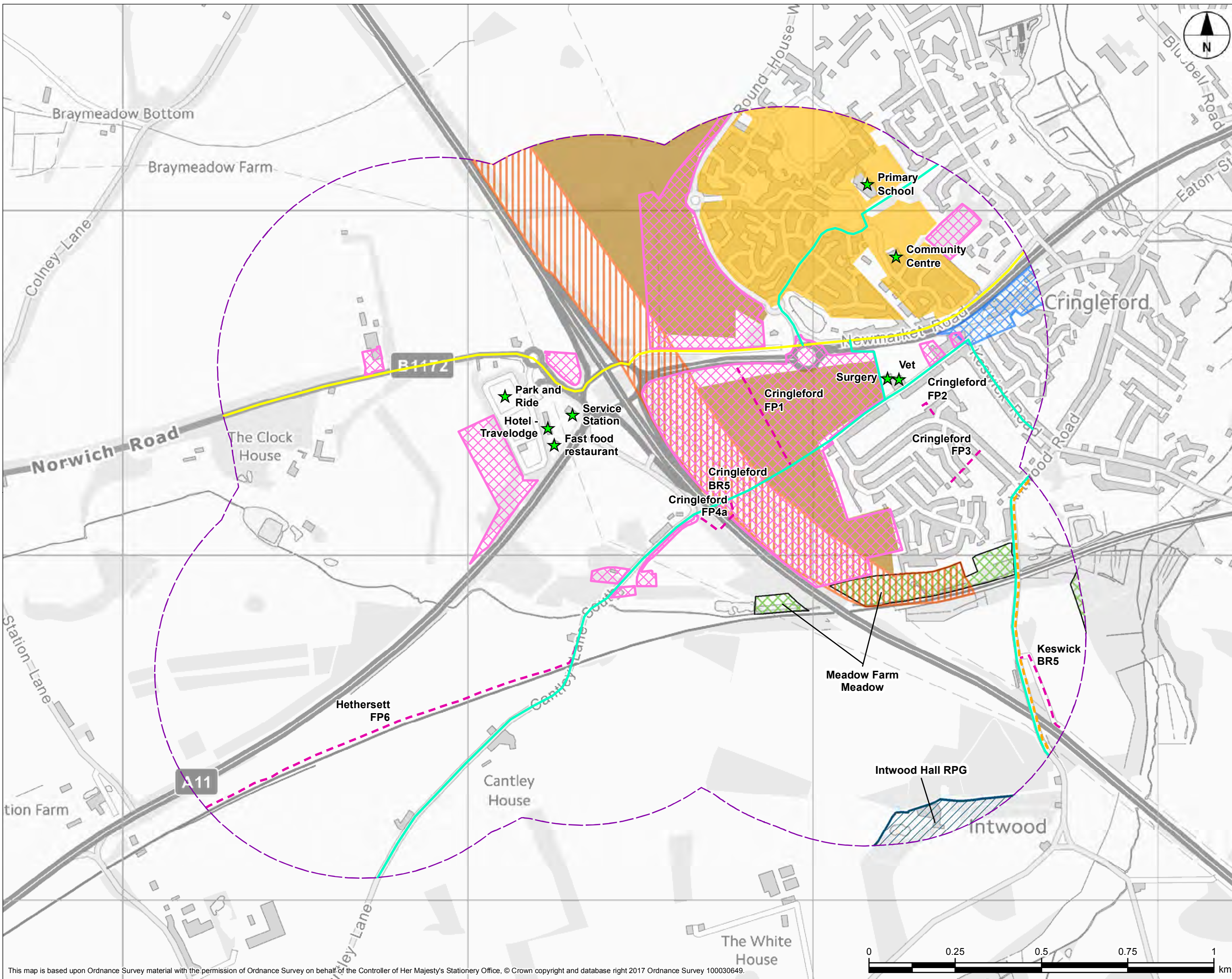
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Figure 10.3

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- LEGEND
- Scheme Boundary (600m Buffer)
 - Community Receptor
 - Public Right of Way
 - Walking Trail
 - Pedalway - Cringleford - Sprowston
 - Local Cycle Route
 - Area Under Development 2012 (Round House Park)
 - Housing Site Allocation
 - Conservation Area
 - Landscaped Protection Zone
 - Planning Application
 - Registered Park and Garden
 - Environmentally Sensitive Area

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Project Title
**A47 CORRIDOR
PCF STAGE 2**

Drawing Title
**A47/A11 THICKTHORN JUNCTION
COMMUNITY FACILITIES**

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Scale @ A3 1:10,000	Suitability SO	Page PAGE 1 of 1		

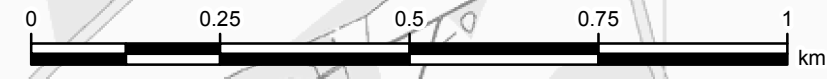
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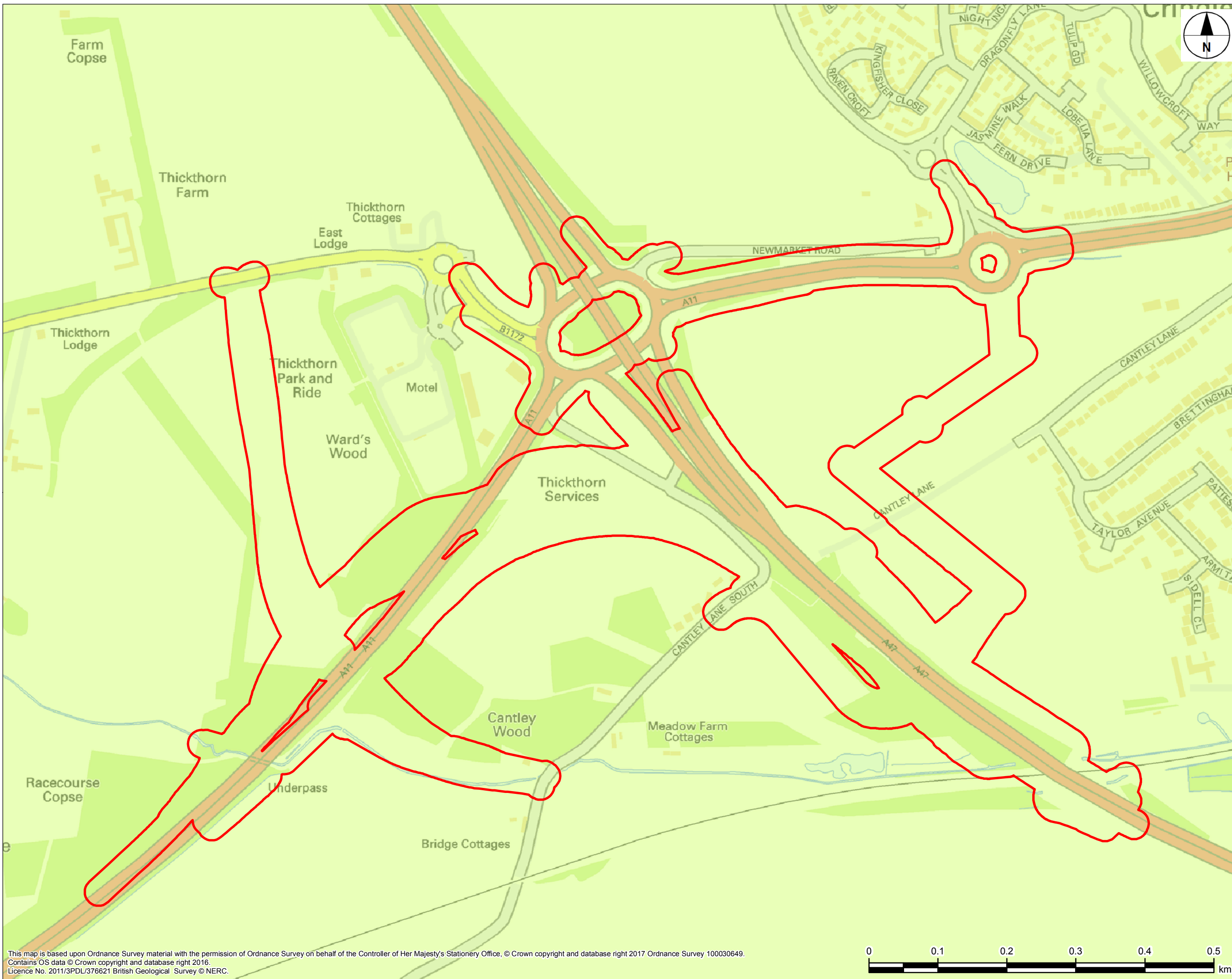


Figure Number
Figure 11.1

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- LEGEND**
- SCHEME BOUNDARY
 - LEWES NODULAR CHALK FORMATION, SEAFORD CHALK FORMATION, NEWHAVEN CHALK FORMATION, CULVER CHALK FORMATION AND PORTSDOWN CHALK FORMATION (UNDIFFERENTIATED) - CHALK

DRAFT ISSUE FOR COMMENT	ST	PS	30/05/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION SOLID GEOLOGY

Designed MB	Drawn SGH	Checked PS	Approved FL	Date 24/05/2017
Scale @ A3 1:5,000	Suitability S0	Page PAGE 1 of 1		

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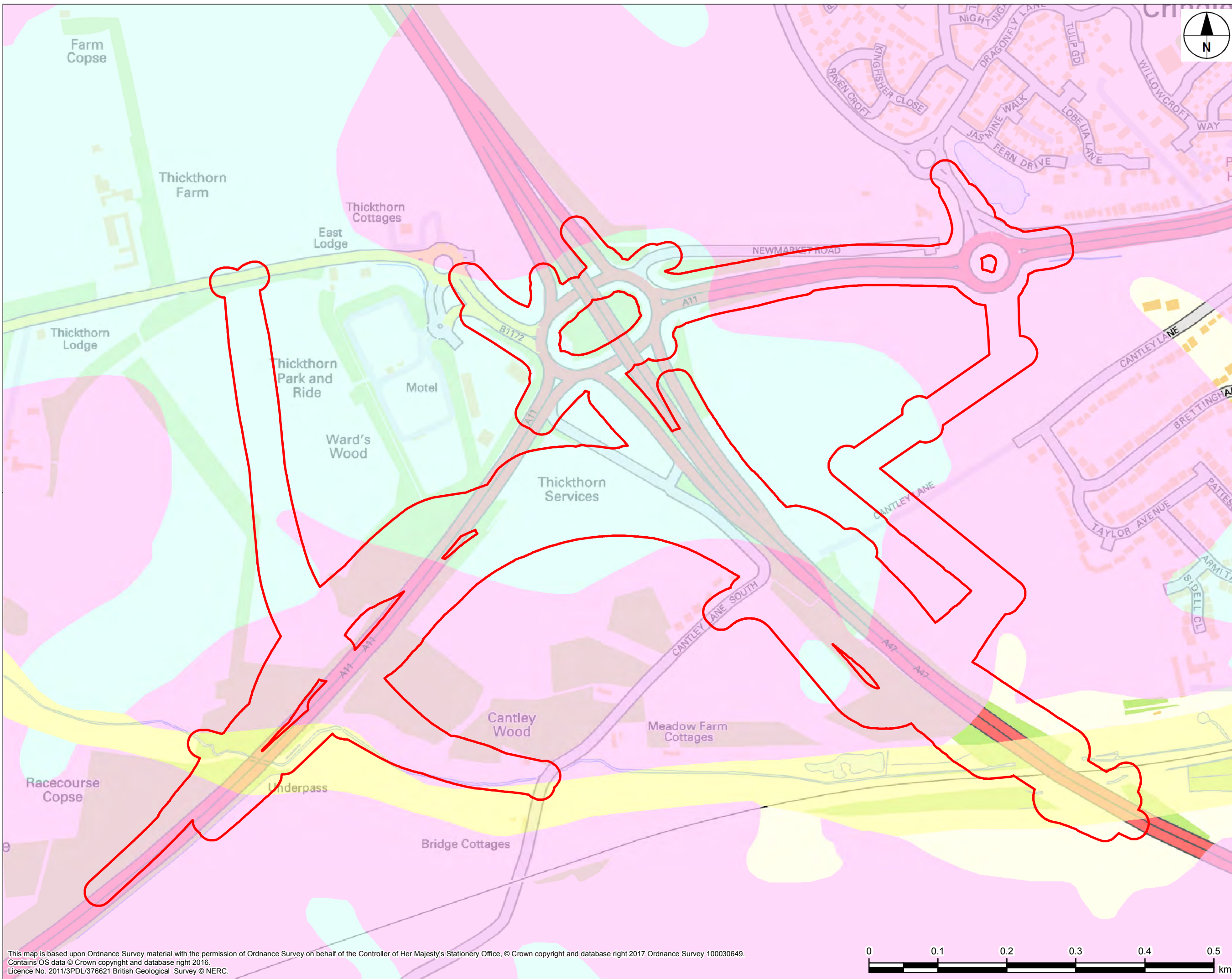
Figure Number
Figure 12.1

Drawing Number
HE551492-ACM-EGT-TJ-DR-GI-00001

Rev
P01

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LEGEND

- SCHEME BOUNDARY
- ALLUVIUM - CLAY, SILT, SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]
- LOWESTOFT FORMATION - DIAMICTON
- SHERINGHAM CLIFFS FORMATION - SAND AND GRAVEL [UNLITHIFIED DEPOSITS CODING SCHEME]

DRAFT ISSUE FOR COMMENT	ST	PS	30/05/17	P01
Revision Details	By	Check	Date	Suffix

Purpose of Issue
DRAFT FOR COMMENT

Client
Highways England
Woodlands
Manton Lane
Bedford
MK41 7LW

Working on behalf of
highways england

Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION SUPERFICIAL GEOLOGY

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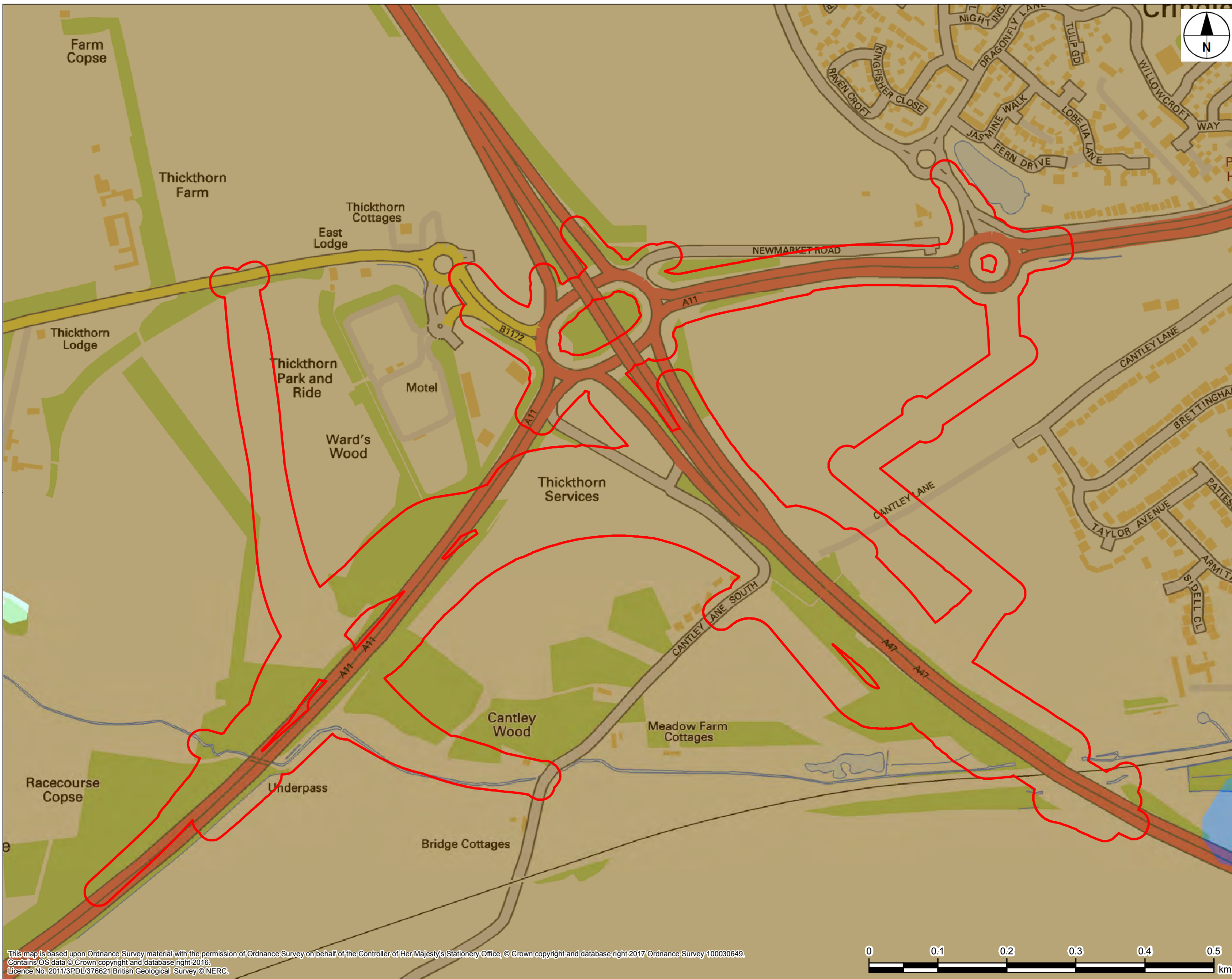
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Figure 12.2

Drawing Number
HE551492-ACM-EGT-TJ-DR-GI-00002

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- LEGEND
- SCHEME BOUNDARY
 - LOAMY AND SANDY SOILS WITH NATURALLY HIGH GROUNDWATER AND A PEATY SURFACE
 - SLIGHTLY ACID LOAMY AND CLAYEY SOILS WITH IMPEDED DRAINAGE

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Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION SOIL CLASSIFICATION

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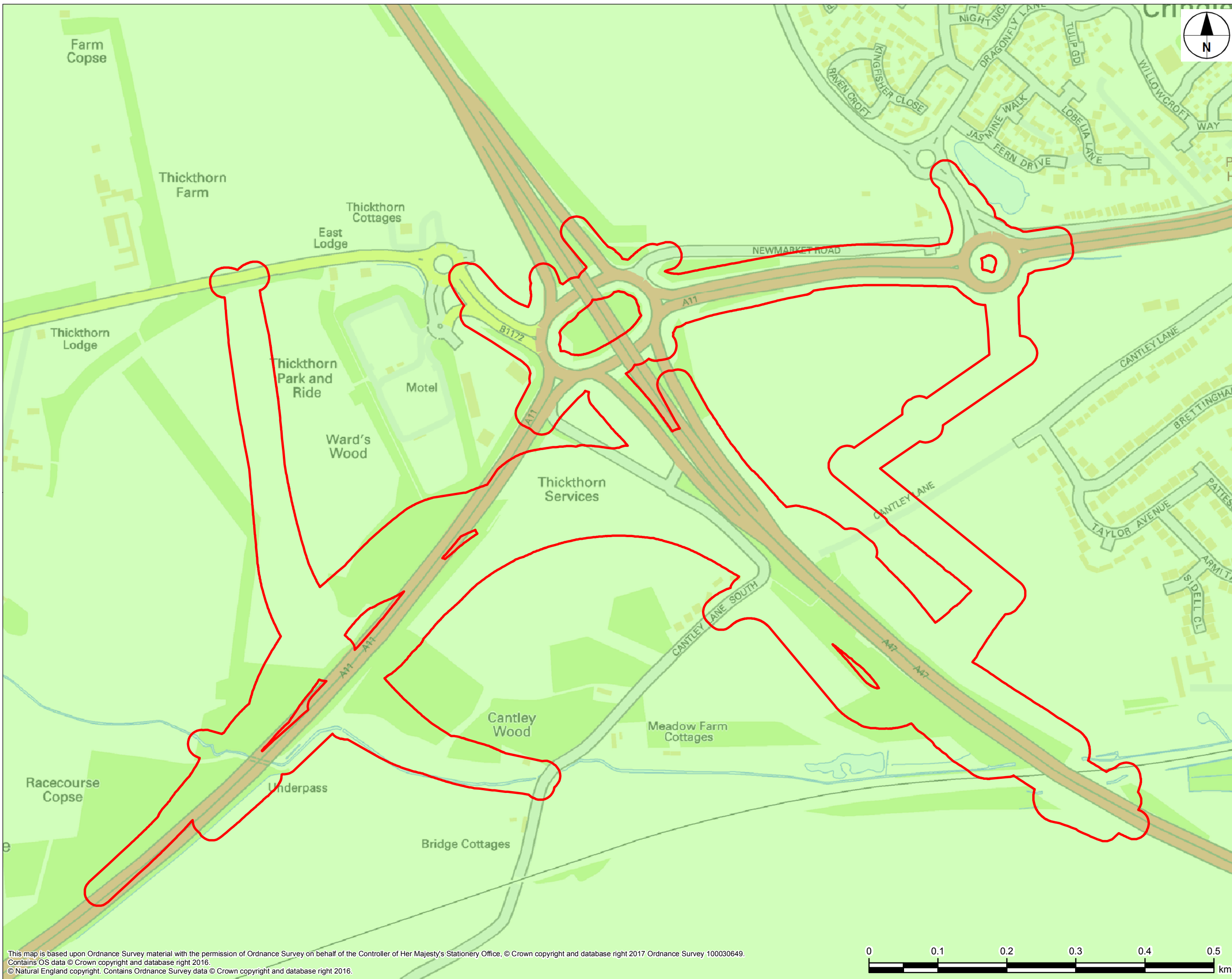
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Figure 12.3

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LEGEND

- SCHEME BOUNDARY
- GRADE 3

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Client
Highways England
Woodlands
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Project Title
A47 CORRIDOR PCF STAGE 2

Drawing Title
A47/A11 THICKTHORN JUNCTION AGRICULTURAL LAND CLASSIFICATION

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Figure Number Figure 12.4	Drawing Number HE551492-ACM-EGT-TJ-DR-GI-00004	Rev P01
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Appendix R – Appraisal Summary Table



Appraisal Summary Table					Contact:																		
Name of scheme:		Option 4: Offline A11 South - A47 East Bypass			Name	Romeu Rosa																	
Description of scheme:		A11 South - A47 East link roads (2 x uni-directional) providing bypass of Thickthorn for A11 South to A47 East, plus A47 East to A11 South movements. With A11(S) to A47(E) bypass movement passing beneath A11 and A47. Incorporates combined developer related Do Minimum improvements to Thickthorn Gyratory, A11 North and Roundhouse Way Roundabout. Due to time constraints not all required quantitative information is available at this time and hence some qualitative commentary is based upon limited information.			Organisation	Highways England																	
					Role	Project Manager																	
Impacts	Summary of key impacts	Assessment																					
		Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp																
Economy	Business users & transport providers	<table border="1"> <thead> <tr> <th colspan="3">Value of journey time changes(£)</th> <th>£37.1m</th> </tr> <tr> <th colspan="3">Net journey time changes (£)</th> <td></td> </tr> <tr> <th>0 to 2min</th> <th>2 to 5min</th> <th>> 5min</th> <td></td> </tr> </thead> <tbody> <tr> <td>£13.9m</td> <td>£22.2m</td> <td>£1m</td> <td></td> </tr> </tbody> </table>			Value of journey time changes(£)			£37.1m	Net journey time changes (£)				0 to 2min	2 to 5min	> 5min		£13.9m	£22.2m	£1m			£34.3m	
	Value of journey time changes(£)			£37.1m																			
	Net journey time changes (£)																						
	0 to 2min	2 to 5min	> 5min																				
£13.9m	£22.2m	£1m																					
Reliability impact on Business users	The scheme is expected to reduce journey times overall, journey time variability is also expected to decrease, albeit delays could still occur on some approaches at some times of the day.																						
Regeneration	Three regeneration areas are identified within Norwich. There are significant concentrations of deprivation in Norwich and surrounding villages. The A47 connects to Great Yarmouth and Lowestoft and both towns have significant regeneration needs. The expected journey time benefits for business users may help support planned residential and employment regeneration in these areas																						
Wider Impacts	The Scheme is located in the core area of the FUR of Norwich. The expected journey time benefits will help support existing and planned employment development in Norwich.																						
Environmental	Noise	Offline new link roads and lane adaptations at Thickthorn and Roundhouse roundabouts will significantly change the road network that will affect volume, speeds and flows and may impact upon residential properties at Newmarket Road, Cantley Lane and Cantley Lane South and will require further assessment.				Moderate Adverse																	
	Air Quality	Offline new link roads and lane adaptations at Thickthorn and Roundhouse roundabouts will significantly change the road network that will affect volume, speeds and flows and may impact upon residential properties at Newmarket Road, Cantley Lane and Cantley Lane South and will require further assessment.				Moderate Adverse																	
	Greenhouse gases	The scheme results in higher average traffic speeds and additional traffic which results in an increase in Greenhouse Gas emissions. The £5.5m cost of these additional emissions is taken directly from the TUBA output file as a detailed environmental assessment has not been undertaken as part of Stage 2. This value is therefore likely to be an understatement of external costs.				-£5.5m																	
	Landscape	The proposed works will involve major substantial earthworks for new link roads and will result in the removal of existing screening vegetation adjacent to Cantley Lane South, Cantley Lane. The works will be both elevated and in cut.				Slight Adverse																	
	Townscape	N/A				N/A																	
	Historic Environment	The setting of two scheduled monuments (tumuli) will be affected. Potential setting impacts to listed buildings.				Moderate Adverse																	
	Biodiversity	The proposed scheme will impact priority habitat and protected species. With mitigation measures, these impacts will be reduced.				Slight Adverse																	
Water Environment	This area is within a 1 in 100 year flood plain. Impacts from scheme embankments could affect flooding. Records of a historical landfill to the south of the A11.				Slight Adverse																		
Social	Commuting and Other users	<table border="1"> <thead> <tr> <th colspan="3">Value of journey time changes(£)</th> <th>£42.7m</th> </tr> <tr> <th colspan="3">Net journey time changes (£)</th> <td></td> </tr> <tr> <th>0 to 2min</th> <th>2 to 5min</th> <th>> 5min</th> <td></td> </tr> </thead> <tbody> <tr> <td>£14.8m</td> <td>£25.9m</td> <td>£2m</td> <td></td> </tr> </tbody> </table>			Value of journey time changes(£)			£42.7m	Net journey time changes (£)				0 to 2min	2 to 5min	> 5min		£14.8m	£25.9m	£2m			£29.5m	
	Value of journey time changes(£)			£42.7m																			
	Net journey time changes (£)																						
	0 to 2min	2 to 5min	> 5min																				
	£14.8m	£25.9m	£2m																				
	Reliability impact on Commuting and Other users	The scheme is expected to reduce journey times overall, and journey time variability is also expected to decrease, albeit delays could still occur on some approaches at some times of the day.																					
	Physical activity	No significant changes in physical activity are expected, existing users of Cantley Lane footbridge could have longer travelling distance.				Neutral																	
	Journey quality	Enhancements in capacity and additional links should improve resilience and reliability which directly affect journey quality, predominantly associated with traveller stress.																					
	Accidents	Potential that diverge lanes from the A47 do not resolve capacity issue and could have queuing onto A47. Slip lanes need departures. An assessment of changes in accidents has been undertaken using COBALT although this has been limited to the parts of the traffic model network where link type can be identified although this excludes most of the Norwich urban area. It is noted that the outcome from CoBALT differs significantly between using 'Junction only' for Thickthorn and 'Combined Link & Junction' specification.	Total Accidents saved by Scheme: 147			£5.67m																	
	Security	No changes in security are expected.				Neutral																	
Access to services	Removal of significant proportion of traffic from Thickthorn Gyratory could improve reliability of Thickthorn Park&Ride services. Therefore access to Norwich town centre, and all the services located there, will benefit from the capacity enhancements.																						
Affordability	Greater fuel efficiencies expected from increase in journey time reliability.																						
Severance	Severance to Cantley Lane South, replacement alternative expected result in longer distance and less attractive route.																						
Option and non-use values	Removal of significant proportion of traffic from Thickthorn Gyratory could improve reliability of Thickthorn Park&Ride services. Therefore access to Norwich town centre, and all the services located there, will benefit from the capacity enhancements.																						
Public Accounts	Cost to Broad Transport Budget	Represents June 2017 HECSD estimate but excluding additional maintenance and operating costs that the with scheme scenario may result in.				-£55.0m																	
	Indirect Tax Revenues	Data extracted from TUBA.				£11.9m																	