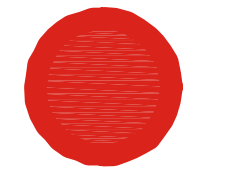


ES Scoping Appendices

ES Scoping Appendix I – Location Plans



Rev. Date By Description

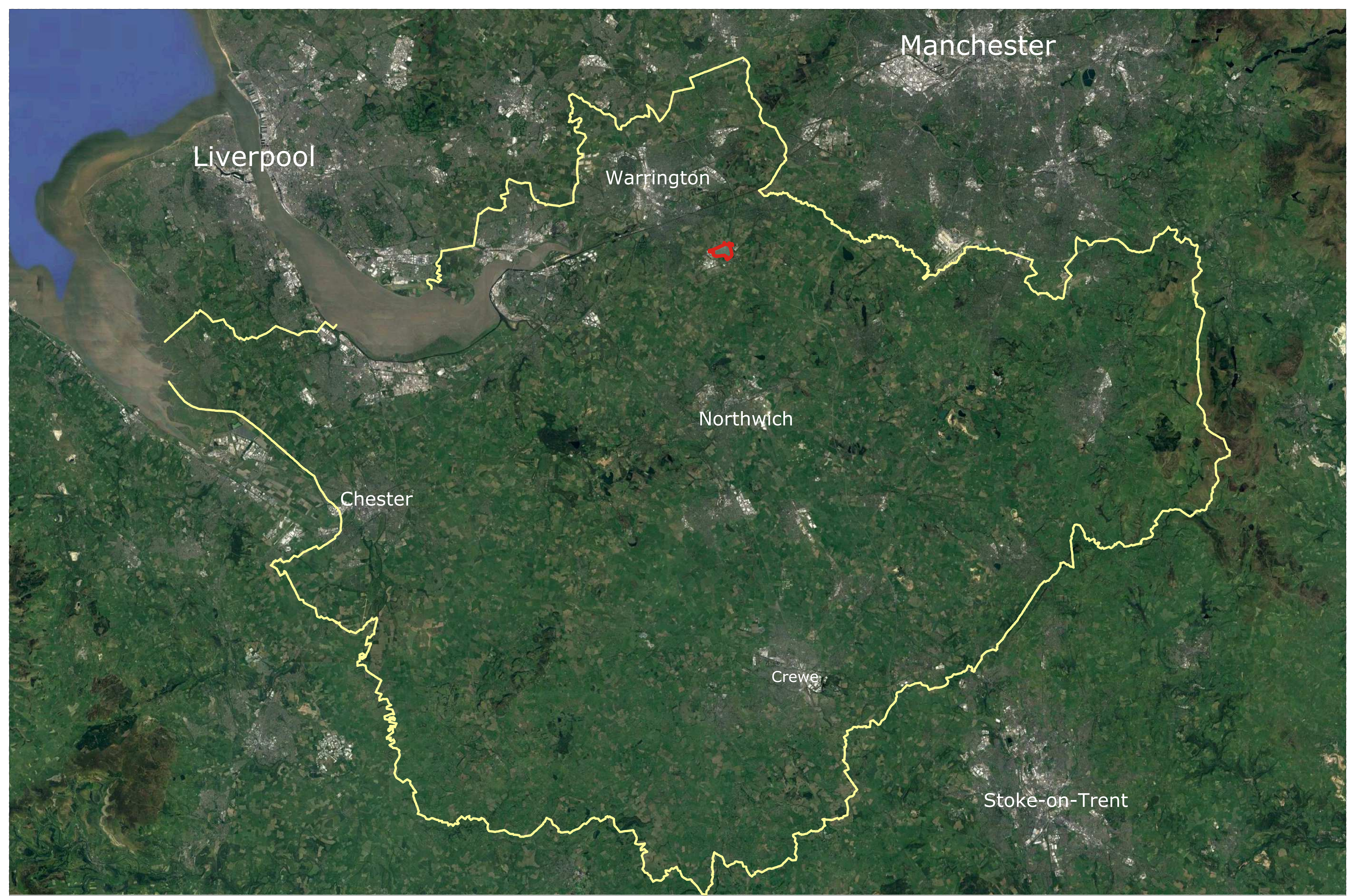


The Site



**Stephen George
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Leicester LE2 1ND
T: +44 (0)116 247 5557
www.stephengeorge.co.uk

Cliff Lane, Warrington
National Plan
Drawn: JB Date: 07/05/2016 Scale: 1:50,000
Checked: JG Date: 08/05/2016 Scale: 1:50,000
Project No: 16-184 Dwg No: K007 Rev: -



Liverpool

Manchester

Warrington

Northwich

Chester

Crewe

Stoke-on-Trent

Rev: 04/16

— Planning Boundary — Cheshire County

Langtree

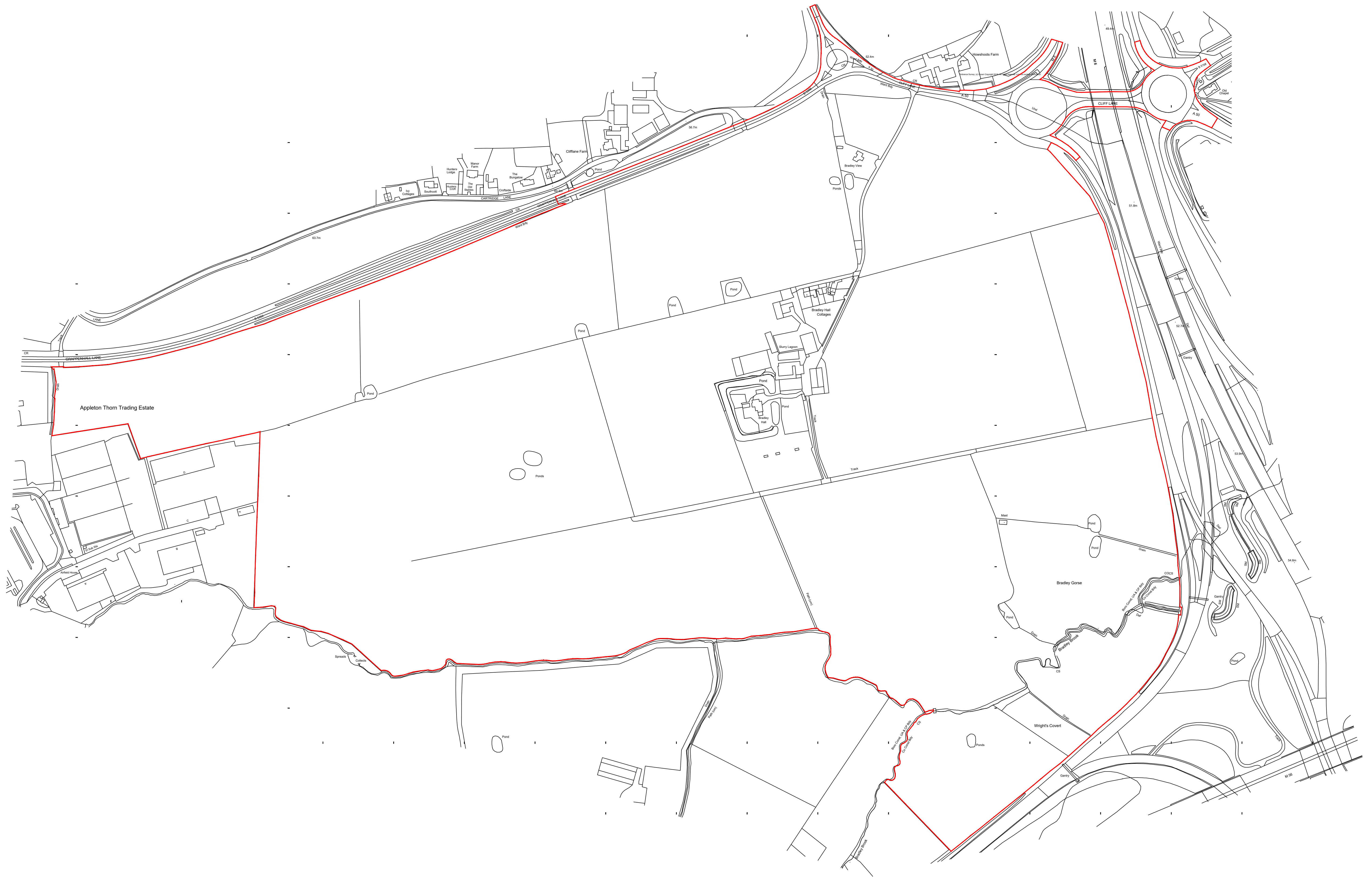
PGIM

FIRST INDUSTRIAL

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Cliff Lane, Warrington Regional Plan
Drawing Status: Sketch
Date: 17/09/16
Project No: 16-184
Dwg No: K006
Rev: -

ES Scoping Appendix 2 – Redline Application Boundary Plan



Rev. Date By Description

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+ Partners LLP**
Architects + Masterplanners



Cliff Lane, Warrington
Red Line Boundary Plan
CDE Reference

Drawn: JB	Planning Status: Planning
Team: MMS	CAD Reference: 16-184-P002
Scale: 1:1000 @ A1	Date: 23/11/2017
Project No: 16-184	Dwg No: P002
	Rev: -

ES Scoping Appendix 3 – Parameter Plan (for Scoping)

OVERALL SUMMARY:

Redline Area:
96.86 Ha / 239.35 Ac

Total Developable Area:
61.82 Ha / 152.63 Ac

Proposed Use:
Flexible B2/B8 with ancillary B1(a)

Maximum Total Floorspace:
325,160m² (3,500,000 ft²) GIA

Existing PRoW subject to diversion or extinguishment

Potential Retention of Existing Residential Properties

Possible Highway Improvement Works

Junction 20

Scheduled Ancient Monument

Bradley Gorse

Wrights Covert

Ecological Mitigation Area

Employment Zone A Parameters:

Developable Area:
32.48 Ha / 80.26 Ac

Proposed Use:
Flexible B2/B8 with ancillary B1(a)

Number of Units:
Ranging from 1 to 6 Units

Proposed Unit Height:
Haunch height ranging from 12m to 40 m (from 79.00 AOD to 101.00 AOD)
Maximum ridge height - 43.5m above FFL

Proposed Unit Floor Level:
Ranging from FFL 59.00 AOD to 67.00 AOD

Car Parking Provision:
Compliant with Council's parking standards for B2 use - 1/60m² and B8 use - 1/120m²

SuDS Provision:
Each Unit will have its own surface water drainage strategy as well as attenuation of public realm

Landscaping:
Appropriate landscaping will be included as part of the development proposals

Employment Zone B Parameters:

Developable Area:
26.74 Ha / 66.08 Ac

Proposed Use:
Flexible B2/B8 with ancillary B1(a)

Number of Units:
Ranging from 1 to 4 Units

Proposed Unit Height:
Haunch height ranging from 12m to 40m (from 72.00 AOD to 96.00 AOD)
Maximum ridge height - 43.5m above FFL

Proposed Unit Floor Level:
Ranging from FFL 55.00 AOD to 60.00 AOD

Car Parking Provision:
Compliant with Council's parking standards for B2 use - 1/60m² and B8 use - 1/120m²

SuDS Provision:
Each Unit will have its own surface water drainage strategy as well as attenuation of public realm

Landscaping:
Appropriate landscaping will be included as part of the development proposals

M6

M56

Planning Boundary	Employment Development Zones	Existing PRoW	Existing Watercourse	Area for Proposed Main Access Road	Watercourse 15m Stand Off from the top of the bank	Proposed Emergency Access	Proposed Main Access
Strategic Landscaping	Existing Trees To be Retained	Proposed PRoW	Proposed Cycle Link	South-North Open Green Corridor	SAM 50m Stand Off from the outer bank of the moat	Existing Ancient Roman Road	

Cliff Lane, Warrington
Parameters Plan (for Scoping Stage)
CDE Reference

Drawn: JB
Team: HNS
Scale: 1:2500 @ A1
Project No: 16-184

Draft Status: Draft
CAD Reference: 16-184-001
Date: 13/11/2017
Dwg No: P001

Rev: B

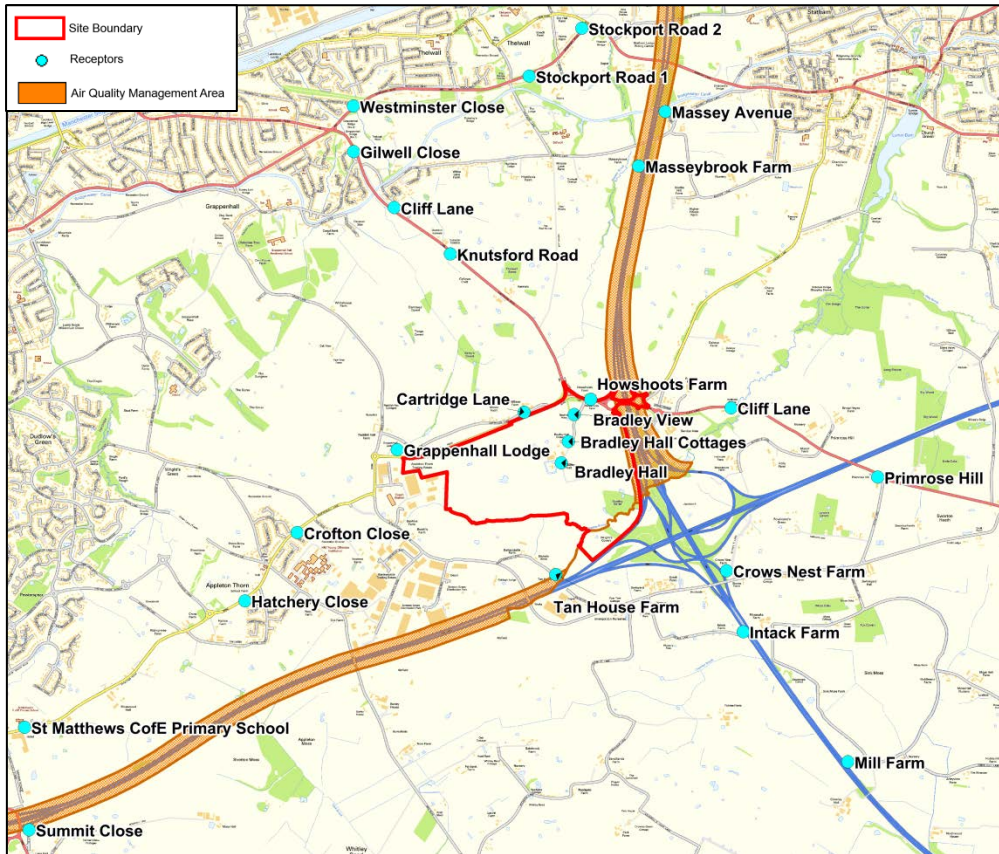
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Langtree

FIRST PANATTONI
PGIM

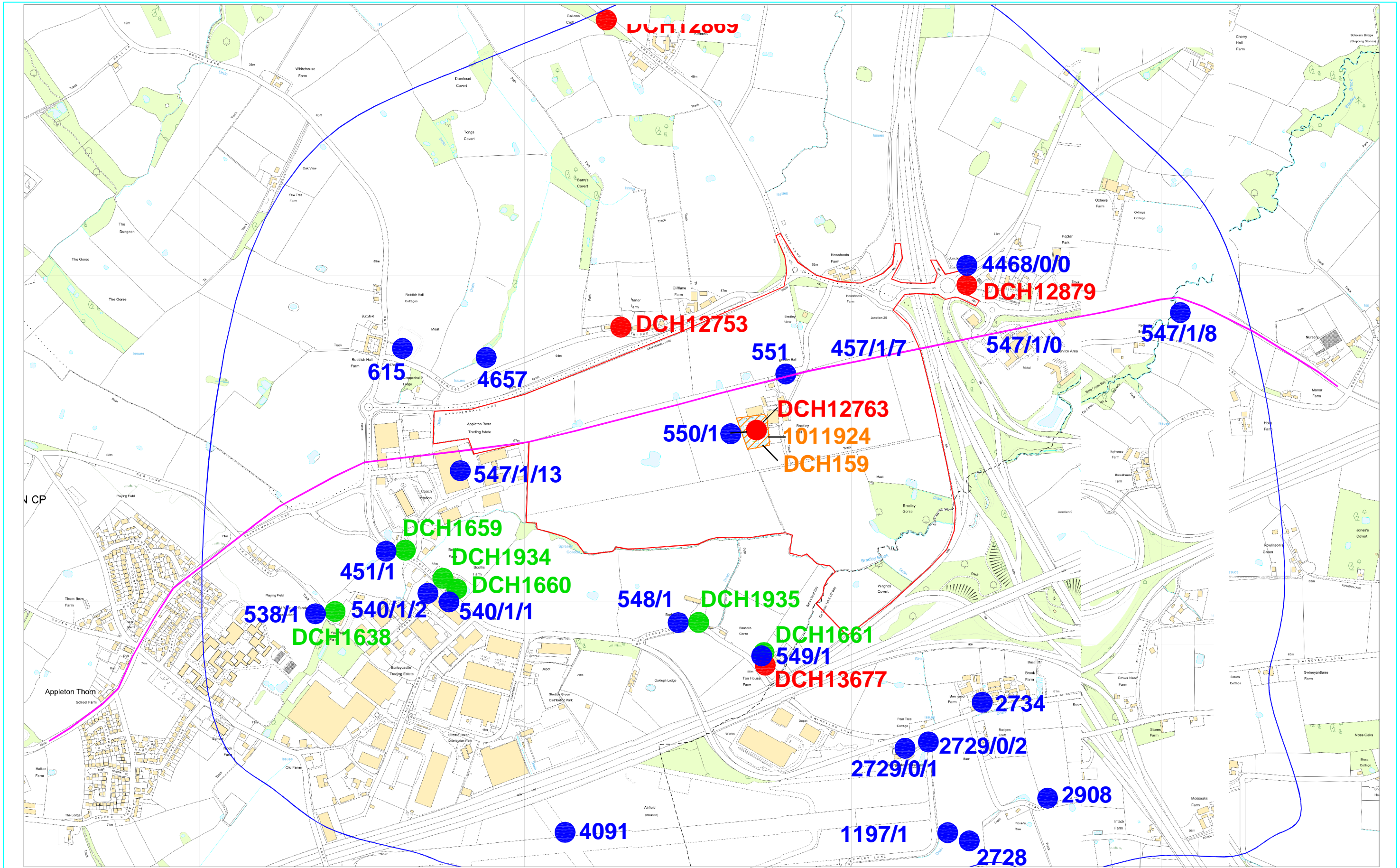
ES Scoping Appendix 4 – Key Receptor Plans

Air Quality - Receptor Plan



Receptor ID	Receptor Name	x	Y
1	Intack Farm	367001	383414
2	Massey Avenue	366476	386920
3	Masseybrook Farm	366297	386553
4	Howshoots Farm	365973	384981
5	Cartridge Lane	365525	384892
6	Stockport Road 1	365559	387158
7	Stockport Road 2	365913	387481
8	Cliff Lane	366919	384923
9	Primrose Hill	367908	384455
10	Tan House Farm	365738	383800
11	Crows Nest Farm	366888	383825
12	Mill Farm	367706	382537
13	Grappenhall Lodge	364669	384641

Receptor ID	Receptor Name	x	Y
14	Crofton Close	363994	384082
15	Hatchery Close	363643	383622
16	St Matthews CofE Primary School	362159	382770
17	Knutsford Road	365028	385960
18	Cliff Lane	364649	386272
19	Gilwell Close	364376	386650
20	Westminster Close	364374	386957
21	Summit Close	362189	382078
22	Bradley View	365862	384877
23	Bradley Hall Cottages	365824	384695
24	Bradley Hall	365775	384551



NOTES

- DO NOT SCALE THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE. IF IN DOUBT ASK.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
- ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

KEY	
	Archaeological Monuments
	Scheduled Monuments
	Locally listed buildings
	Listed building
	Study area
	Proposed development site
	Roman Roads

ISSUES & REVISIONS				
Rev	Date	Details of issue / revision	Drw	Rev
PI	15.10.17	PRELIMINARY ISSUE	KW	XX
PI	28.11.17	FINAL ISSUE	KW	

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 Nottingham | 0115 924 1100
www.bwbconsulting.com

Client	Grappenhall Lane		
Scale	1:11000	Drawn	KM
Size	A3	Reviewed	JMQ

Project Title	Grappenhall Lane
Drawing Title	Fig. 15.1 Plan showing the development site, the study area boundary, monuments and listed buildings
Drawing Status	FINAL

Drawing No.	ABC/123/100	Revision	P2
-------------	-------------	----------	----

Appendix 4 Cultural Heritage Assets

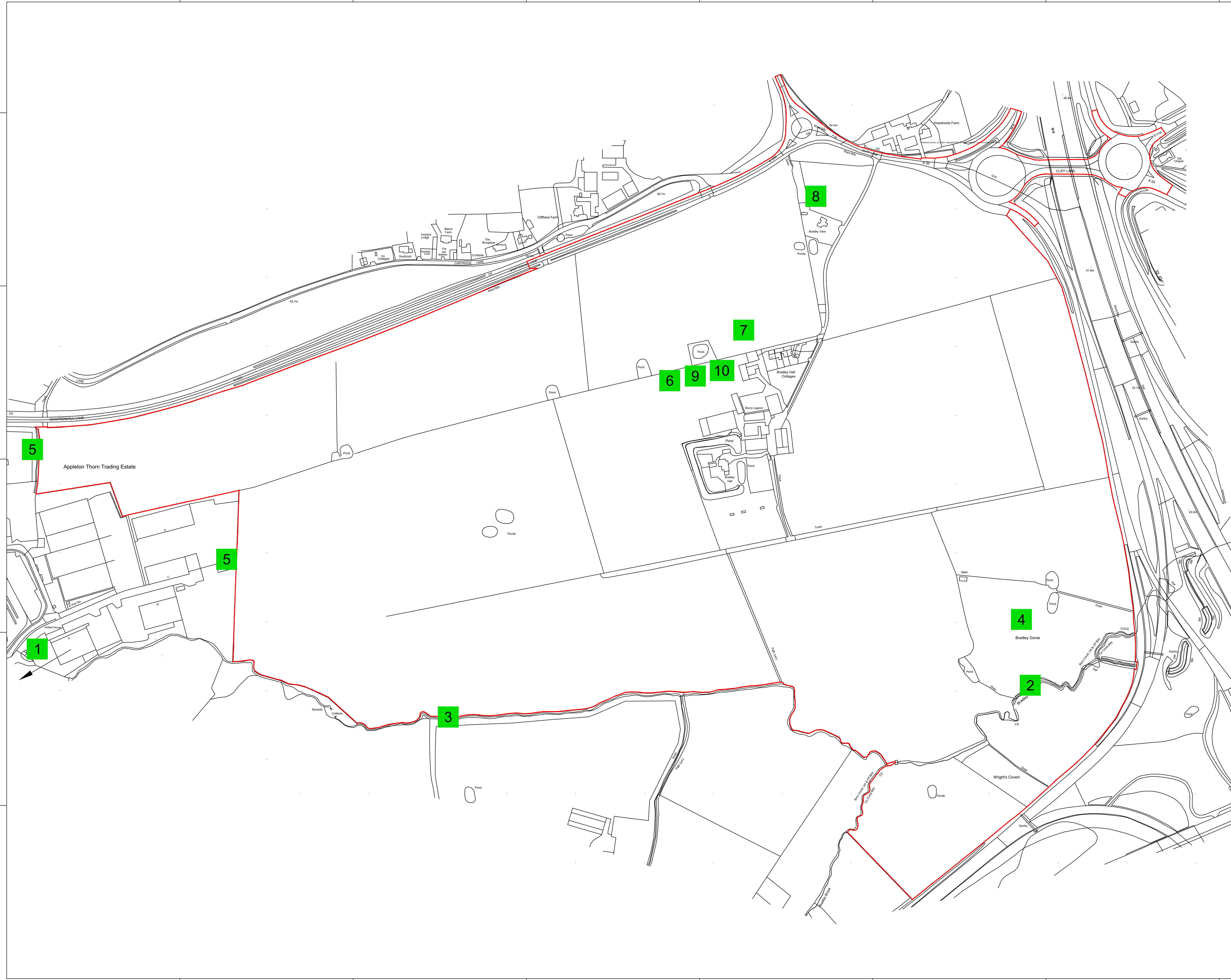
HER Reference	Site Name	Grid Reference
<i>Designated Assets</i>		
DCHI638	Yew Tree Farmhouse Grade II Listed Building I139340	SJ 6442 8396
DCHI659	Beehive Farmhouse Grade II Listed Building I139361	SJ 6463 8415
DCHI660	Booths Farm, Shippon On Left (North West) Side Of Farmyard Grade II Listed Building I139362	SJ 6475 8406
DCHI661	Tanyard Farm, Farm Building Grade II* Listed Building I139363	SJ 6573 8384
DCHI934	Booths Farm Farmhouse Grade II Listed Building I329740	SJ 6477 8404
DCHI935	Barleycastle Farmhouse Grade II Listed Building I329741	SJ 6553 8393
DCHI59	Bradley Hall Moated Site, Scheduled Monument, I011924	SJ 6570 8452
<i>Locally Listed Assets</i>		
DCHI2753	Barn at Manor House Farm, Cartridge Lane, Appleton Locally Listed Building	SJ 6529 8484
DCHI2763	Bradley Hall and barn, Cliff Lane, Appleton	SJ 6571 8453
DCHI2869	Milepost at Gallows Croft, Knutsford Road, Lymm	SJ 6524 8578
DCHI2879	Old Chapel, Old Cherry Lane, Lymm Locally Listed Building	SJ 6635 8497
DCHI3677	Tan House Farm, Barleycastle Lane, Appleton	SJ 6573 8381
<i>Archaeological Events</i>		
ECH3541	M6 Motorway Widening Scheme, Junctions 16-20. Archaeological Recording of Test Pits.	SJ 723 679
ECH3554	Greater Manchester Western and Northern Relief Road (M56-M6 link): Archaeological Assessment Report	SJ 703 908
ECH3566	M6 Junctions 16-20 Widening: Archaeological Desk-Top Survey	SJ 755 637
ECH3652	M6 widening: Junctions 16- 20: Report on Geophysical Survey	SJ 755 637
ECH3653	M6 Widening: Junctions 16- 20. Report on Earthwork Survey	SJ 755 637
ECH3654	M6 Widening: Junctions 16- 20, Cheshire. Cultural Heritage, Stage 3 Assessment Report Text	SJ 755 637
ECH4557	Report on Northwest Telent Techmac Design and Consultancy Services Framework Provision of Variable Message Signs on the M56 Between Junctions J9 -16	SJ 520 781
ECH4559	Bradley Hall Appleton, The Moated Site and Survey and Research Report	SJ 657 845
ECH4566	An Archaeological Watching Brief at Bradley Hall Moat, Appleton, Warrington. Final Report	SJ 657 845
ECH5845	Stretton Airfield, Design Access Statement	SJ 652 835
<i>Monuments</i>		
I197/1	Kings Brook Mill Site of Watermill Industrial Site, Mill, Watermill	SJ 6 8
2728	Unnamed Site in High Legh Parish Site of 19th century cottage House	SJ 663 832
2729/0/1	Swineyard Lane Site of a 19th century house	SJ 661 835
2729/0/2	Swineyard Lane Site of 19th Century Building House	SJ 662 835 (point)
2734	Swineyard Farm Prehistoric axe Findspot	SJ 66 83
2908	Badger's Croft Farm I Cropmark Enclosure. Ditched Enclosure	SJ 66 83
4091	RNAS Stretton/HMS Blackcap Airfield WW2 Airfield Military Airfield	Centred SJ

		652 835
4468/0/0	Strict Baptist Chapel, Cherry Lane Strict Baptist Chapel Strict Baptist Chapel	Centred SJ 663 849
4657	Pond, North of Cartridge Lane, Grappenhall. Pond shown on OS 1st Edition Maps of Cheshire	SJ 648 847
538/1	Yew Tree Farmhouse 17th century farmhouse Farm, Farmstead,	SJ 644 839
540/1/1	Booth's Farm Farmhouse Post Medieval farmhouse Farm, Farmstead	SJ 647 840
540/1/2	Shippon, Booth's Farm Timber framed barn Cow House, Farm, Farmstead, Barn	SJ 647 840
541/1	Beehive Farmhouse Post Medieval farmhouse Farm, Farmstead, Timber Framed Building,	SJ 646 841
547/1/0	North Cheshire Ridge Roman Road	SJ 66 83
547/1/13	North Cheshire Ridge Roman Road – Stretton Airfield Section of Roman Road	SJ 648 844
547/1/7	The North Cheshire Ridge Roman Road Section of Roman road	SJ 658 846
547/1/8	The North Cheshire Ridge Roman Road Section of Roman road	SJ 67 84
548/1	Barley castle Farmhouse Post Medieval farmhouse Farm,	SJ 655 839
549/1	Tanyard Farm Farm-building 16th century barn Cow House, Farm, Stable	SJ 657 838
550/1/ 1011924	Bradley Hall moated site Medieval moated site Manor, Manor House, Moat, Gate Centred	SJ 656 845
551	Bradley Cross Site of medieval cross	SJ 6 8
615	Reddish Hall Medieval moated site Moat	SJ 646 847

Based on:	Rev
Architects Dwg No.	Rev
Structural Dwg No.	Rev
Survey Dwg No.	Rev
Other Dwg No.	Rev
Other Dwg No.	Rev

Notes

ID	RECEPTOR
1	UNITED UTILITIES SEWERS
2	BRADLEY BROOK
3	BRADLEY BROOK TRIBUTARY
4	BRADLEY GORSE
5	ADJACENT SITE
6	GROUNDWATER
7	BRADLEY HALL COTTAGES
8	BRADLEY VIEW
9	SITE USERS
10	CONSTRUCTION WORKER



-	27/11/17	RED LINE UPDATED	JA	LF	LF
Issue	Date	Description	By	Chkd	Verfd

Project
SIX:56 WARRINGTON

Client
LANGTREE / FIRST INDUSTRIAL

Architect
STEPHEN GEORGE PARTNERS

Title
DRAINAGE AND FLOOD RISK RECEPTOR PLAN

Drawing No.	CLXX(52)0001	Drawing Status	INFORMATION
Job No.	1015524	Scale	NTS

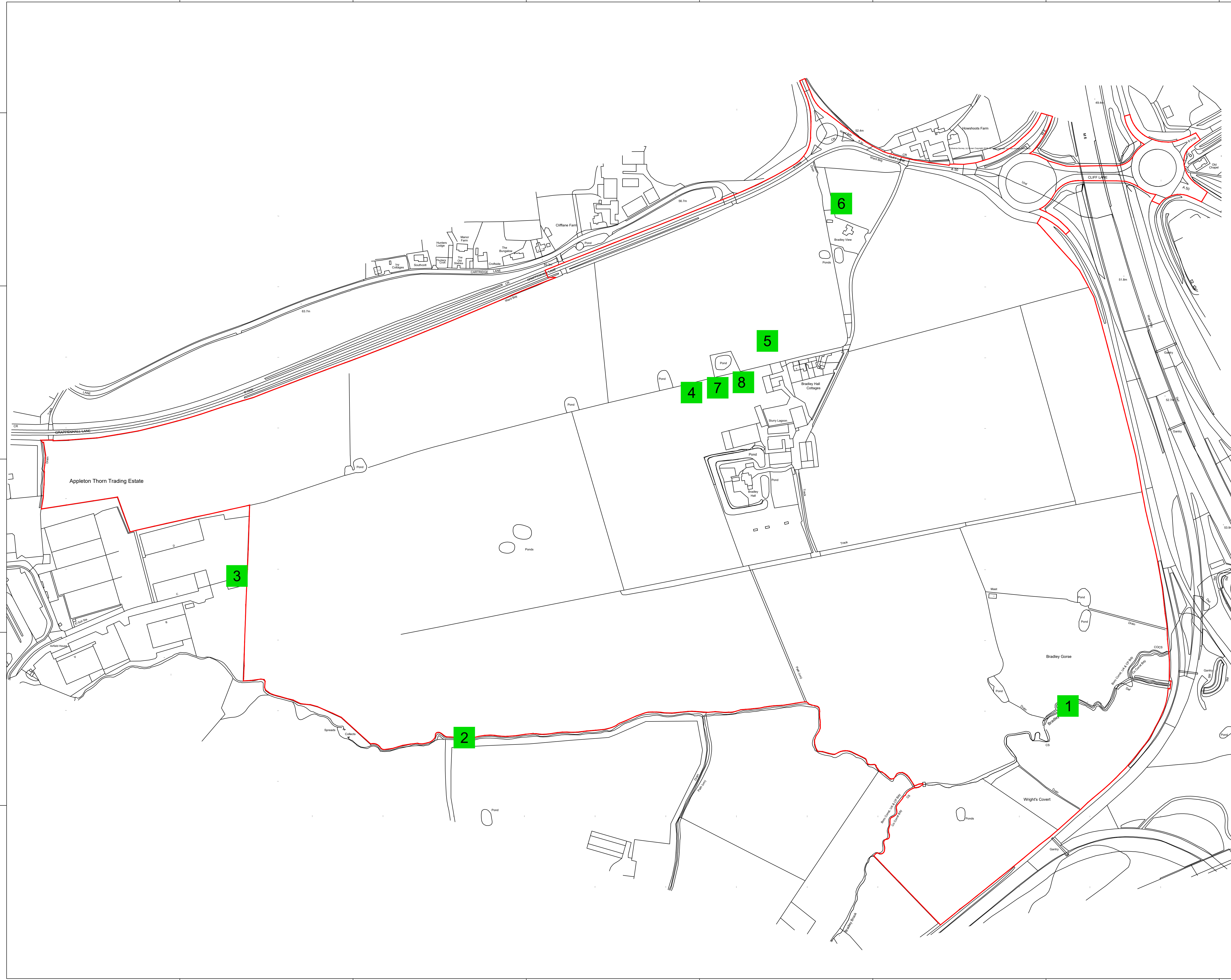
CUNDALL

4th Floor, Partnership House
Regent Farm Road,
Gosforth,
Newcastle, NE3 3AF
Telephone: +44 (0)191 213 1515
Website: www.cundall.com

Based on:	Rev
Architects Drg No.	Rev
Structural Drg No.	Rev
Survey Drg No.	Rev
Other Drg No.	Rev
Other Drg No.	Rev

Notes

ID	RECEPTOR
1	BRADLEY BROOK
2	BRADLEY BROOK TRIBUTARY
3	ADJACENT SITE
4	GROUNDWATER
5	BRADLEY HALL COTTAGES
6	BRADLEY VIEW
7	SITE USERS
8	CONSTRUCTION WORKER



Issue	Date	Description	By	Chkd	Verfd
-	27/11/17	RED LINE UPDATED	JA	LF	LF

Project
SIX: 56 WARRINGTON

Client
LANGTREE / FIRST INDUSTRIAL

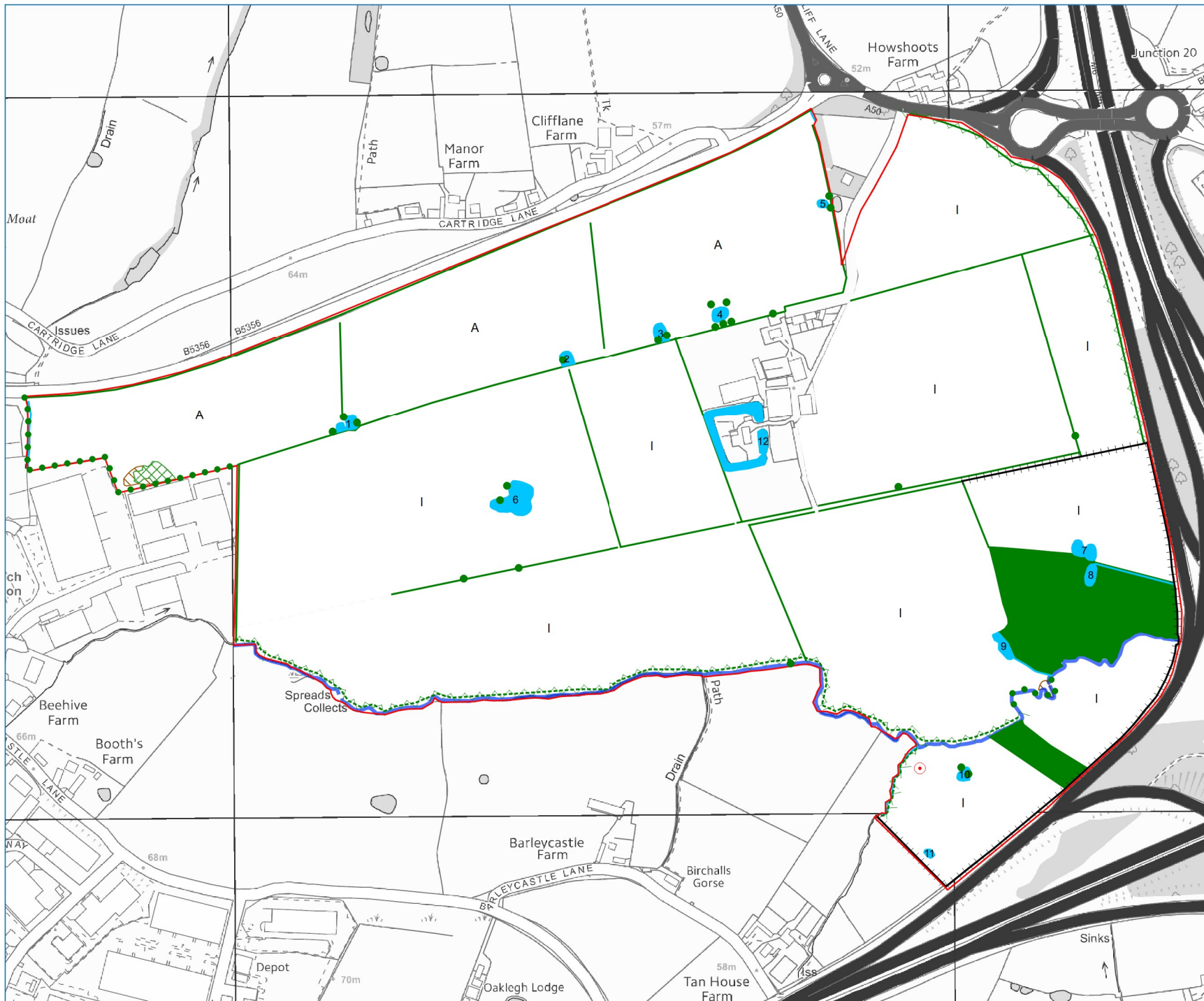
Architect
STEPHEN GEORGE PARTNERS

Title
GROUND CONDITIONS
RECEPTOR PLAN

Drawing No.	CLXX(52)0003	Drawing Status	INFORMATION
Job No.	1015524	Scale	NTS

CUNDALL

4th Floor, Partnership House
Regent Farm Road,
Gosforth,
Newcastle, NE3 3AF
Telephone: +44 (0)191 213 1515
Website: www.cundall.com



- Redline boundary
- A Arable
- Ditch
- Fence
- Hedgerow species rich (intact)
- Hedgerow species rich defunct
- Hedgerow species poor intact
- I Improved grassland
- Flowing water
- Ponds
- Scattered tree
- Tall ruderal
- ⊙ TN1
- Tree line
- Scrub dense
- Semi-natural broad-leaved woodland



Project Cliff Lane Warrington

Drawing Title Habitat Features

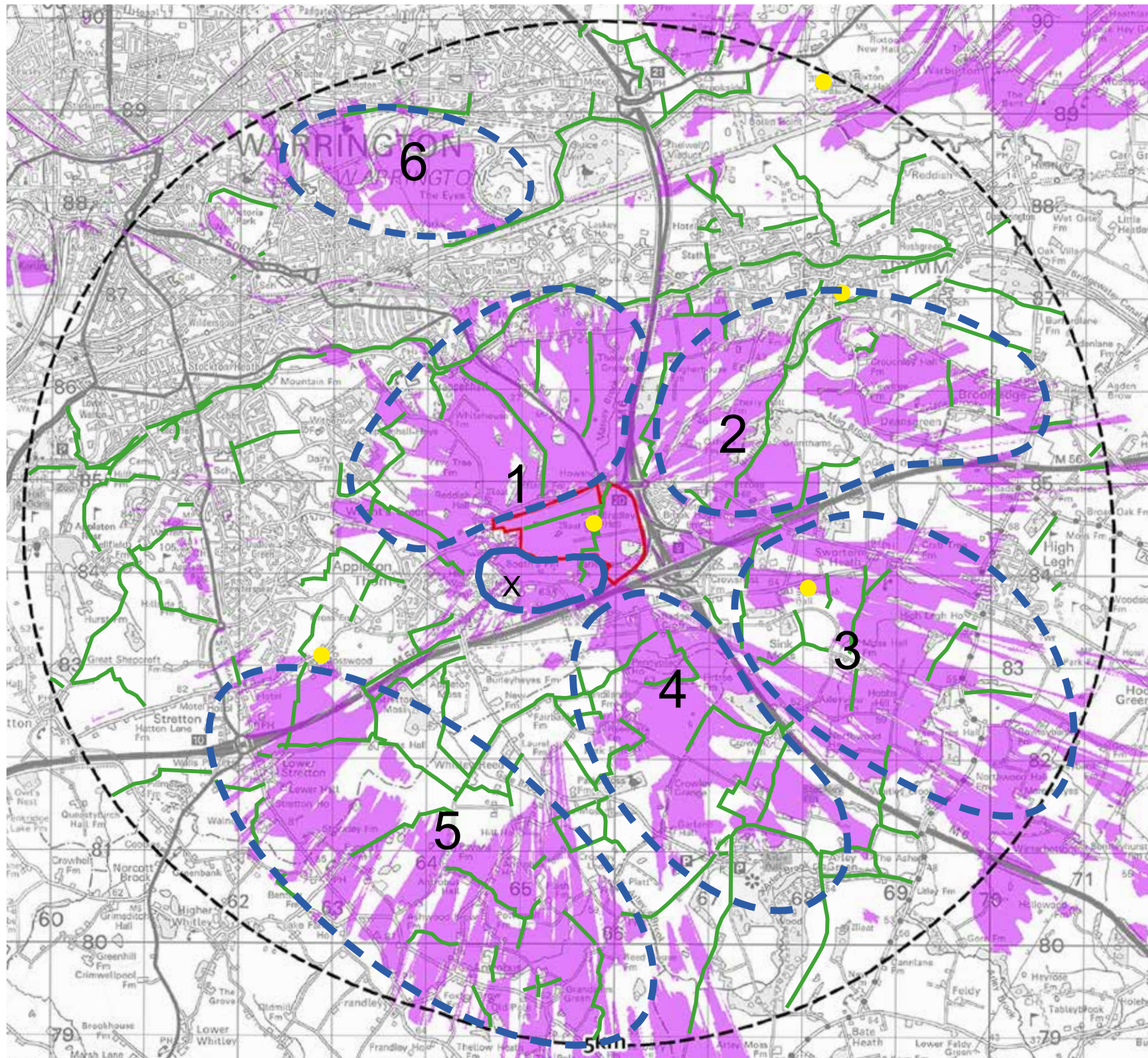
Scale As Shown (Approximate)

Drawing No. 10682/P01a

Date October 2017

Checked PM/HC





Identified field work zones to confirm typical views of the proposed development identified by the ZTV.

- 1 Grappenhall South (area for allocated SUE)
- 2 M6 East
- 3 M6 South East
- 4 M56 South
- 5 A533 North East
- 6 Manchester Ship Canal

X Area of future employment considered to be lower sensitivity

Field Work Zones 14-22m Plus 40m High Units ZTV

Based on:	Rev
Architects Drg No.	Rev
Structural Drg No.	Rev
Survey Drg No.	Rev
Other Drg No.	Rev

Notes

ID	RECEPTOR
1	GRAPPENHALL LODGE
2	DWELLINGS ON CARTRIDGE LANE: -IVY COTTAGES -SOUTHOTT -HUNTERS LODGE AND HUNTERS CROFT -MANOR FARM WITH THE OLD STABLES -CROFTSIDE -THE BUNGALOW -5 CARTRIDGE LANE -7 CARTRIDGE LANE
3	BRADLEY VIEW COTTAGE
4	HOWSHOOTS FARM
5	TAN HOUSE FARM
6	BARLEYCASTLE FARM
7	BRADLEY HALL COTTAGES
8	BEEHIVE FARM
9	BOOTH'S FARM

KEY:

- NEAREST NOISE SENSITIVE RECEPTOR
- NOISE MONITORING POSITIONS

-	27/11/17	RECEPTORS AND RED LINE UPDATED	JA	LF	LF
Issue	Date	Description	By	Chkd	Verfd

Project
SIX: 56 WARRINGTON

Client
LANGTREE / FIRST INDUSTRIAL

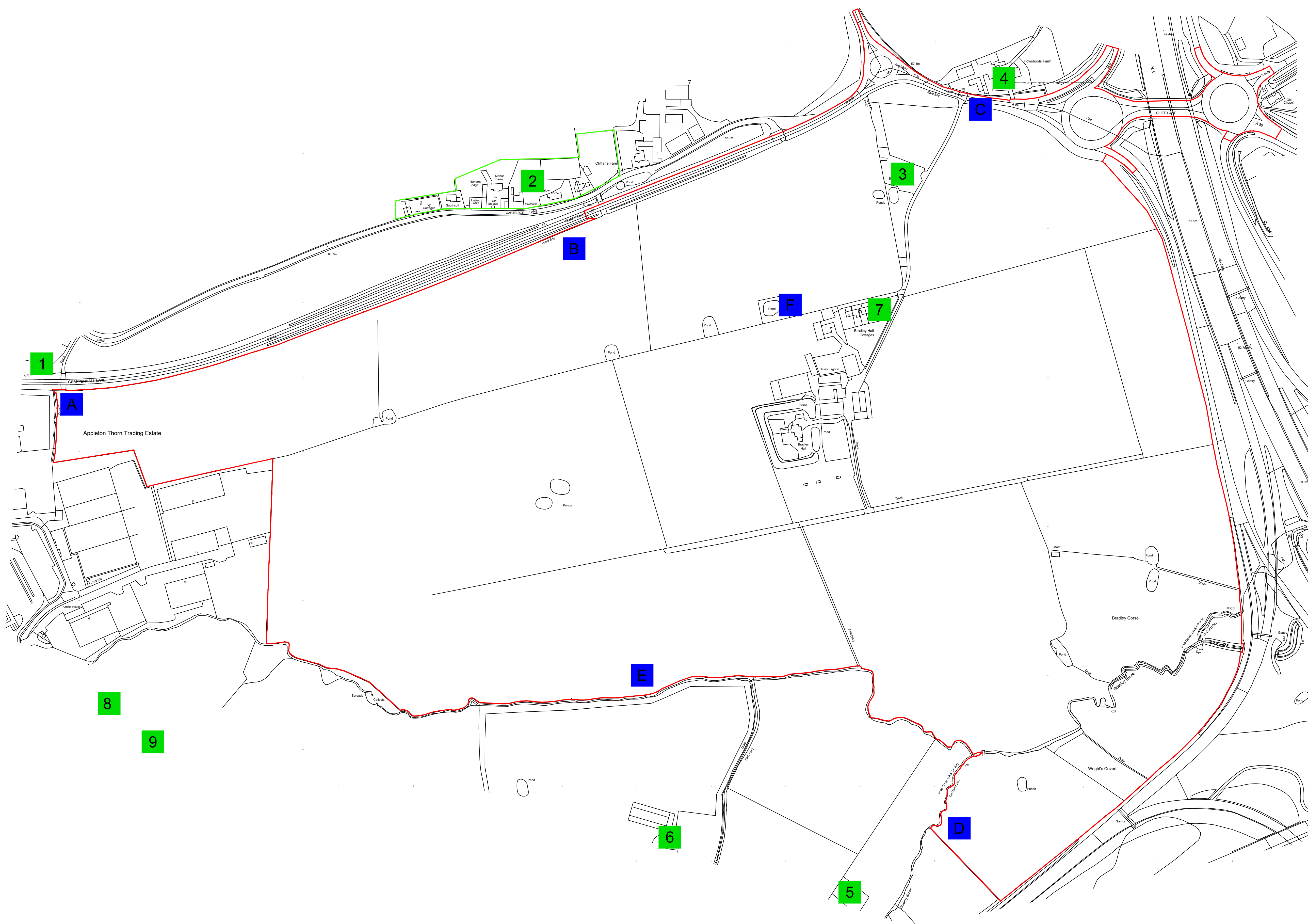
Architect
STEPHEN GEORGE PARTNERS

Title
NOISE RECEPTOR PLAN

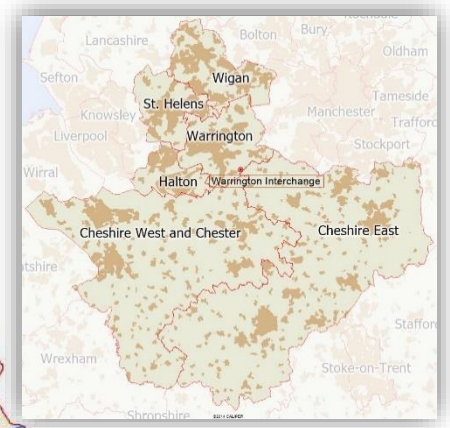
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Job No.	1015524	Scale	NTS

CUNDALL

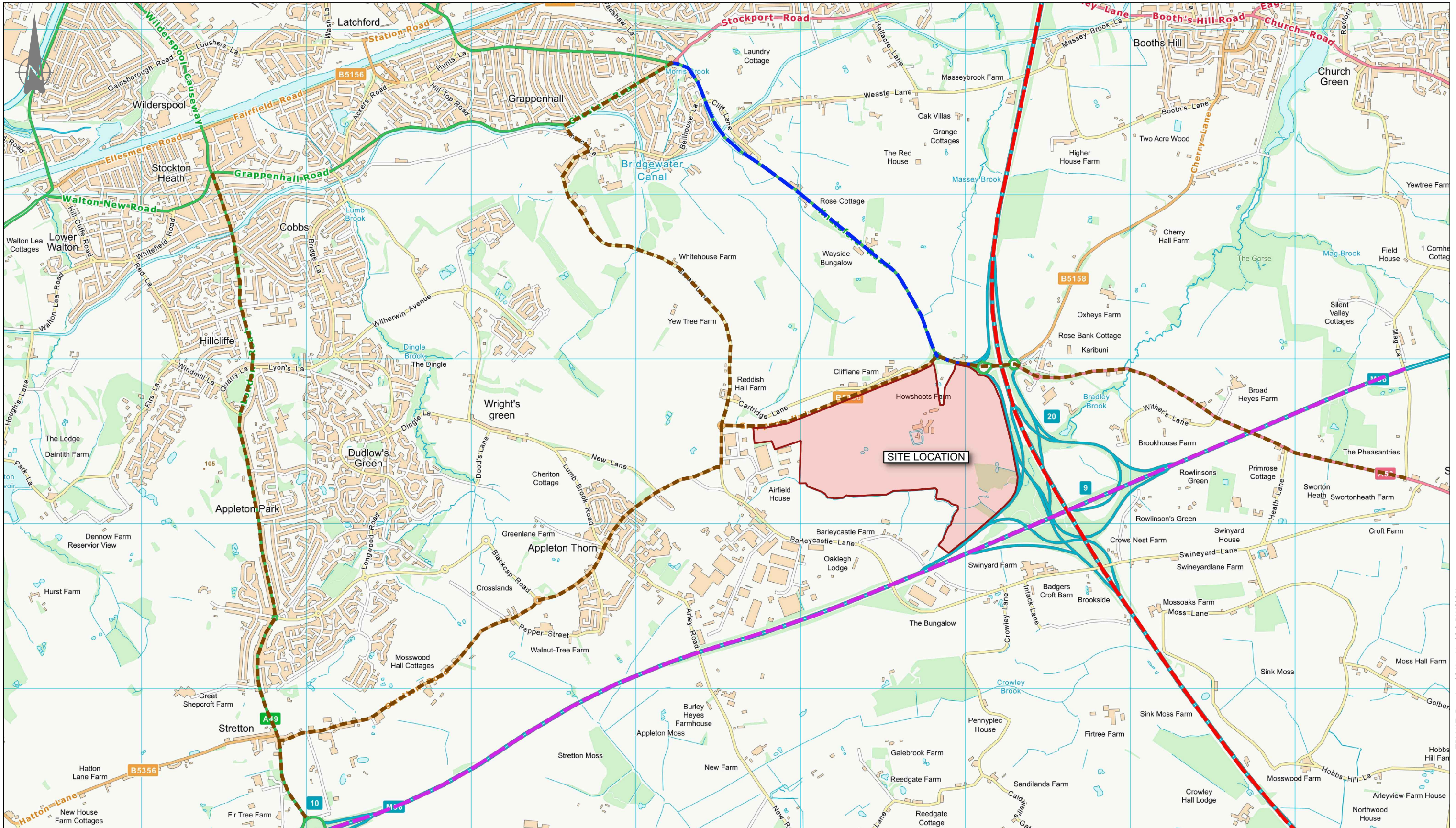
4th Floor, Partnership House
Regent Farm Road,
Gosforth,
Newcastle, NE3 3AF
Telephone: +44 (0)191 213 1515
Website: www.cundall.com



Socio Economic – Receptor Plan



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- KEY:**
- Site
 - County road
 - Regional road
 - National road
 - Borough/ District/ Local Neighborhood



Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
 0161 236 2394
 manchester@curtins.com
 www.curtins.com

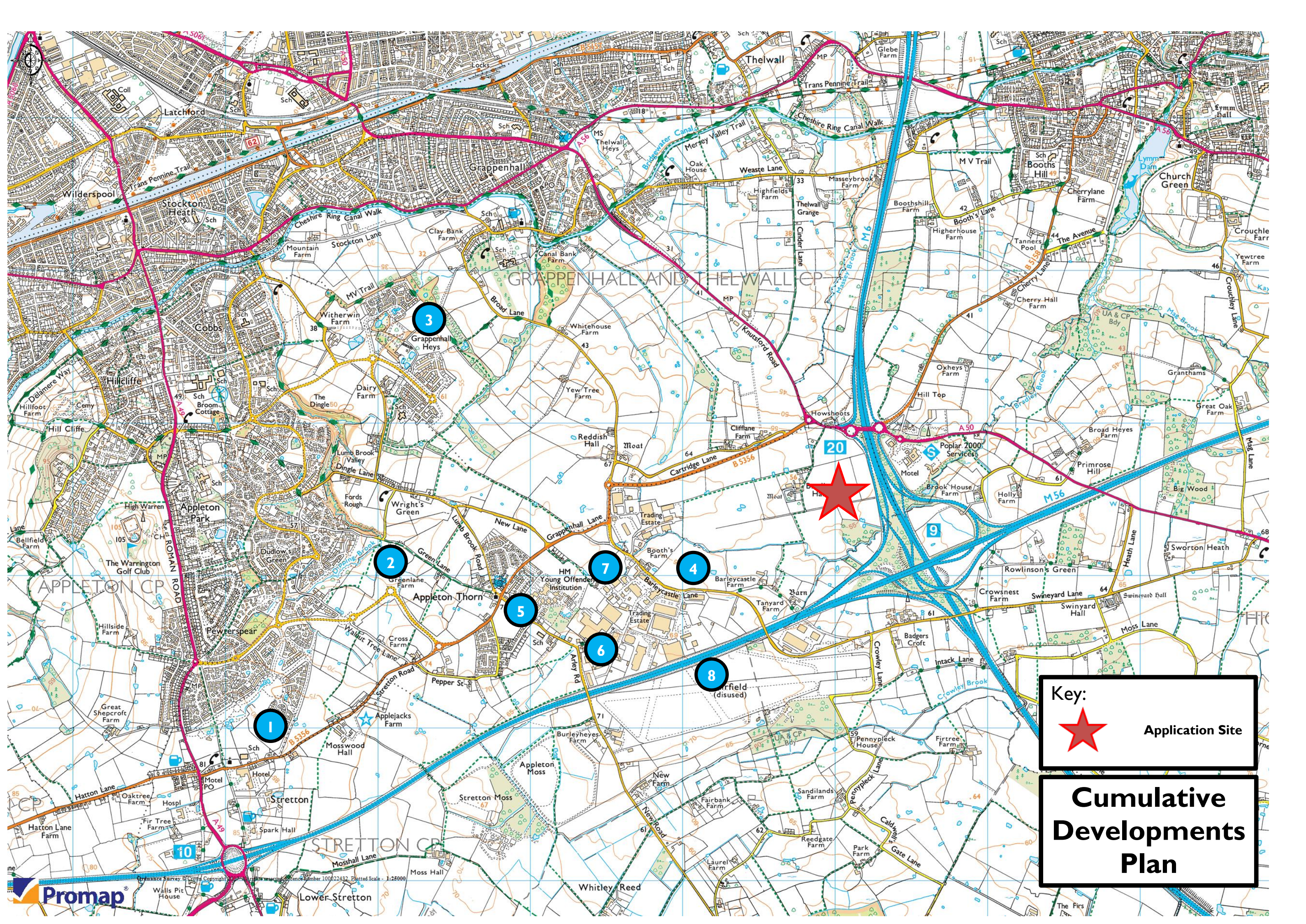
Project:	SIX : 56 WARRINGTON	Status:	PRELIMINARY				
Drg Title:	ES RECEPTOR PLAN	Drawn By:	JM	Checked By: AV			
		Designed By:	JM	Date: 16/11/17			
		Scale:	NTS				
Project No:	Originator:	Zone:	Level:	Type:	Discipline:	Category / Number:	Rev:

64076 - CUR - XX - 00 - DR - TP - 04001 -P01

GENERAL NOTES:	Rev:	Description:	Date:	By:
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\\mafs01\Projects\064001 - 065000\064076 - Warrington Interchange TPMAE - Drawings\2-Working\2.2-DWG\041

ES Scoping Appendix 5 – Cumulative Development Plan




GRAPPENHALL AND THELWALL CP

APPLETON CP

STRETTON CP

Key:

 Application Site

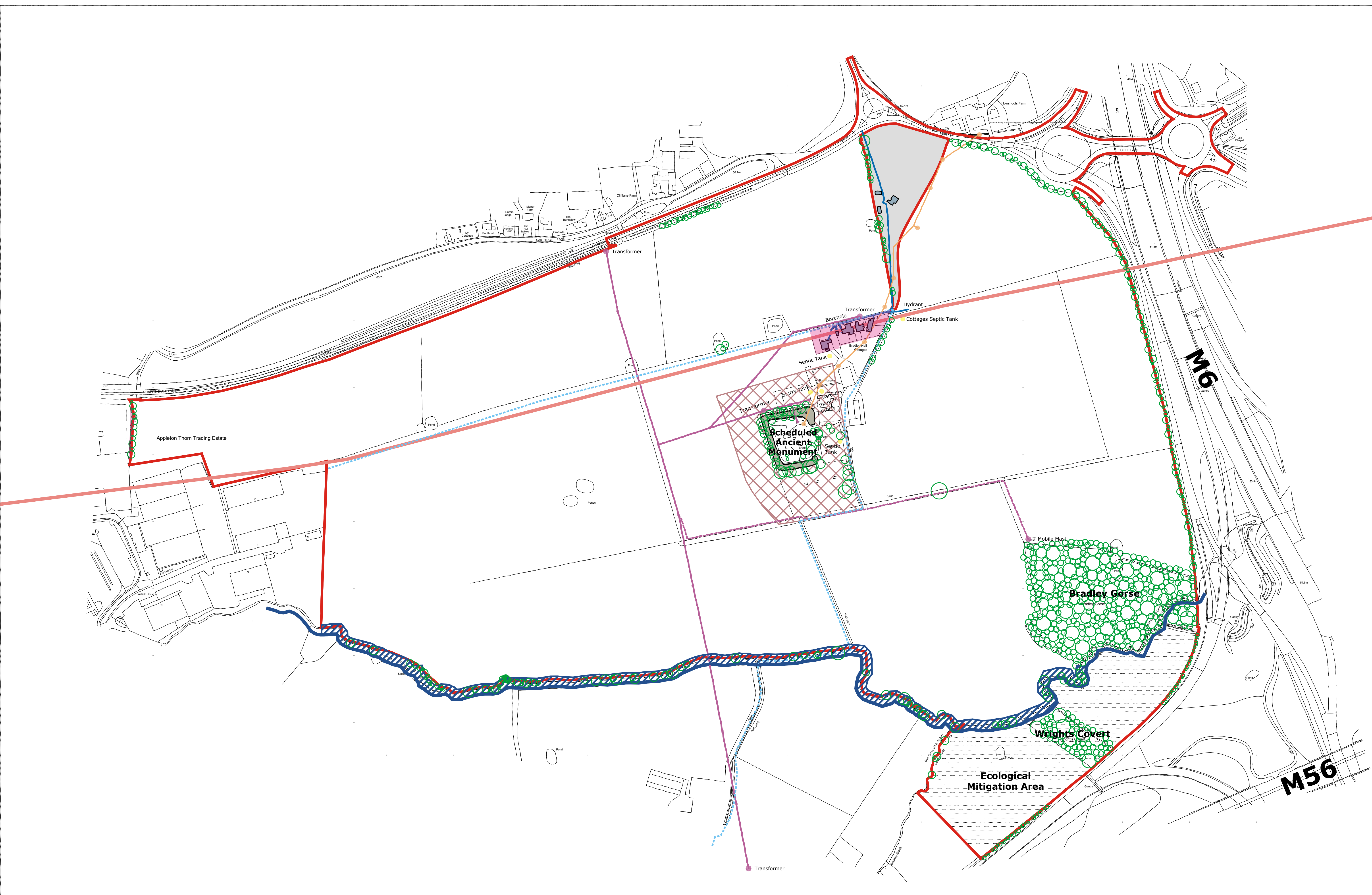
**Cumulative
Developments
Plan**

	Possible Cumulative Development	Details	Status	Justification for Cumulative	To be considered in the CIA (Yes/No)
1	Land bounded by Pewterspear Green Road, Ashford Drive, Stretton, Warrington LPA Ref: 2016/28807 Applicant - HCA	Outline Planning Application for 180 dwellings.	Planning permission granted by WMBC 28-09-2017		
2	Land bounded by Green Lane &, Dipping Brook Avenue, Appleton, Warrington, WA4 5NN LPA Ref: 2017/29930 Applicant - HCA	Outline Planning Application for 370 dwellings	Resolution to grant planning permission by WMBC Development Management Committee 10-10-2017	Potential relationship in terms of socio economic. It is a committed development and therefore included within the future baseline and assessed within the assessment of the Proposed Development. It does not therefore need reconsidering in the cumulative assessment for traffic and transport, noise and vibration and air quality.	Yes – socio economic
3	Land South of Astor Drive, East of Lichfield Avenue &, South of Witherwin Avenue, Grappenhall Heys, Warrington, WA4 3LG LPA Ref: 2017/29929 Applicant - HCA	Outline Planning Application for 400 dwellings	Resolution to grant planning permission by WMBC Development Management	Not considered to be a link in respect of any of the other technical areas due to distance and detached nature from the site.	
4	Land off Barleycastle Lane, Appleton, Warrington Liberty Properties	50,000m ² logistics development	Pre-application discussions with WMBC Scoping Request (LPA Ref: 2017/30243) Application to be submitted.	Potential relationship in terms of geology and ground conditions; flood risk and drainage; landscape and visual impact; ecology and nature conservation; socio economic; cultural heritage; utilities; waste; energy; and operational noise. It is to form part of a sensitivity test for traffic and therefore included within the assessment of the Proposed Development. It does not therefore need reconsidering in the cumulative assessment for traffic and transport; and in terms of traffic generation in respect of noise and vibration; and air quality.	Yes- geology and ground conditions; flood risk and drainage; landscape and visual impact; ecology and nature conservation; socio economic; cultural heritage; utilities; waste; energy; and operational noise
5	Land to the east of Stretton Road, north of Pepper Street, Stretton Road, Appleton Thorn,	Full Planning Application for 78 dwellings	REFUSED by WMBC 29-06-2017	Application refused and therefore not considered to be relevant for consideration in the cumulative assessment.	No

	Warrington LPA Ref: 2016/29511				
6	Blue Machinery Ltd, Barleycastle Trading Estate, Lyncastle Road, Warrington, WA4 4SY LPA Ref: 2016/28994	Full Planning Application for new industrial warehouse building for storage (replacing smaller storage building), single storey extension to existing building for further storage and two storey extension for additional office space, associated parking provision and landscaping. (1,699m ² new build, 180m ² and 265m ² extensions)	Application Approved 17-02-2017 (3 years to implement planning permission)	Potential relationship in terms of geology and ground conditions; flood risk and drainage; socio economic; and waste. The traffic generation is not considered to be significant and therefore there is not considered to be a relationship in respect of traffic and transport; noise and vibration; and air quality. Not considered to be a link in respect of landscape and visual impact; ecology and nature conservation; cultural heritage; utilities; and energy due to distance and detached nature from the site.	Yes - geology and ground conditions; flood risk and drainage; socio economic; and waste
7	Land off Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4SN LPA Ref: 2015/25255 Morley Estates	Full Planning Application for industrial / warehouse development (Sui Generis) to facilitate a plant hire business with elements of vehicle / plant repair, servicing, maintenance and plant storage / distribution / parking and associated offices / welfare facilities, vehicular access via existing service road, acoustic bunding and fencing and other means of enclosure, soft landscaping, 36 car park spaces, fuel pumps (and associated underground tanks), vehicle / plant wash bay and sub-station (Resubmission of 2014/24618) (4,545sqm industrial warehouse building)	Application Approved 16-10-2015 (3 years to implement planning permission)	Potential relationship in terms of geology and ground conditions; flood risk and drainage; and socio economic. The traffic generation is not considered to be significant and therefore there is not considered to be a relationship in respect of traffic and transport; noise and vibration; and air quality. Not considered to be a link in respect of landscape and visual impact; ecology and nature conservation; cultural heritage; utilities; waste and energy due to distance and detached nature from the site.	Yes - geology and ground conditions; flood risk and drainage; and socio economic
8	Former Stretton Airfield, Warrington, WA4 4RG LPA Ref: 2014/2332 Hensmill Property	Proposed construction of subterranean car storage facility (B8 Use Class) with ancillary office development and associated demolition and landscaping accessed from Crowley Lane.	Application Approved 23-06-2015 (3 years to implement planning permission)	Potential relationship in terms of landscape and visual impact; and socio economic. The traffic generation is not considered to be significant and therefore there is not considered to be a relationship in respect of traffic and transport; noise and vibration; and air quality. Not considered to be a link in respect of geology and ground conditions; flood risk and drainage; ecology and nature conservation; cultural heritage; utilities; waste and energy due to distance and detached nature from the site.	Yes - landscape and visual impact; and socio economic

ES Scoping Appendix 6 – Topographical Plan

ES Scoping Appendix 7 – Constraints and Opportunities Plan



<p>Rev. Date</p> <p>By Description</p>	<p> Planning Boundary</p> <p> Existing Ancient Roman Road</p> <p> Existing PRoW</p> <p> Existing Watercourse</p> <p> Watercourse 15m Stand Off from the top of the bank</p> <p> SAM 50m Stand Off from the outer bank of the moat</p> <p> Existing Trees To be Retained</p> <p> Existing Residential Properties</p> <p> Proposed Cycle Link</p>	<p> Overhead Power</p> <p> Overhead BT Line</p> <p> Water Mains</p> <p> Underground Cable</p>	<p> Area not included in the Planning Boundary</p>	<p>Stephen George + Partners LLP Architects + Masterplanners</p> <p>PGIM</p> <p>Langtree</p>	<p>Cliff Lane, Warrington Constraints Plan</p> <p>CDE Reference</p> <p>Drawn: JB Team: HHS Scale: 1:2500 @ A1</p> <p>Project No: 16-184</p> <p>Dwg No: P003</p> <p>Rev: -</p>
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ES Scoping Appendix 8 - Geology and Ground Conditions

- Baseline Geotechnical and Geoenvironmental Assessment

Warrington Interchange Masterplan

**Phase I Geotechnical and
Geoenvironmental Assessment**

First Industrial / Langtree

Job No: 1015524

Doc Ref: 1015524.RPT.GL.002

Revision: —

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Project title	Warrington Interchange Masterplan	Job Number
Report title	Phase I Geotechnical and Geoenvironmental Assessment	1015524

Document Revision History

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—	09 November 2017	Final

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Executive Summary

Objectives & Scope	Cundall was commissioned by the Client to undertake a Phase I Geoenvironmental Assessment for the site in the context of the proposed development to assess potential geoenvironmental risks and geotechnical constraints to inform scheme design and provide outline recommendations for further work as considered necessary.
Proposed Development	The proposed development is understood to comprise nine warehouse units located across the site, surrounding the existing Bradley Hall and Bradley Gorse, including areas of soft landscaping and three large ponds.
Current Land Use and Features	A number of buildings associated with Bradley Hall Farm, including Bradley Hall, are located in the centre of the site with Bradley Hall Cottages directly north. Pastural fields associated with Bradley Hall Farm cover most of the site, with fields associated with the neighbouring Cliff Lane Farm covering the north west of the site. An area of dense woodland known as Bradley Gorse covers an area in the south east corner of the site and Bradley Brook runs through the south east corner of the site.
Historic Land Use	The site's recorded history has been dominated by agricultural uses.
Geology & Ground Conditions	The entire site is anticipated to be covered by firm to stiff glacial till, underlain by the bedrock of the Bollin Mudstone Member (red marl interbedded with evaporite deposits).
Unexploded Ordnance (UXO) Risk	The site has been classified as having a medium risk of UXO encounter and risk mitigation measures have been recommended and should be employed during any subsequent intrusive ground investigation or construction.
Preliminary Geoenvironmental Assessment	No potential sources of contamination were identified during the site inspection. Potential sources identified as part of the desk based research are as follows: <ul style="list-style-type: none"> ▪ Contamination within shallow soils associated with the agricultural use of the site. ▪ The infilled ponds located on (and surrounding) the site are considered a potential source of hazardous ground gas.
Development Constraints	The following possible development constraints have been identified: <ul style="list-style-type: none"> • The entire site is underlain by the Bollin Mudstone Member. Therefore, there is potential for dissolution features to exist within the evaporite deposits where in contact with groundwater beneath the site. • High sulphate concentrations resulting from the weathering of the Bollin Mudstone Member bedrock beneath the site have the potential to attack buried concrete. • The bedrock is anticipated to be present at shallow depths in the centre and towards the west of the site. • Groundwater levels beneath the site are anticipated to be shallow due to the presence of Bradley Brook and several ponds and water features located across the site. • A number of historical ponds are assumed to have been infilled based upon historical mapping of the site. • Organic material may be present across the site due to the presence of both historical and existing water features located on site. This may be soft and compressible, representing a risk to buildings in terms of both absolute and differential settlements. • Due to the presence of cohesive Glacial Till and the number of trees located across the site, it is likely that the areas surrounding the trees have the potential to be significantly desiccated.
Recommendations for Further Works	An exploratory geoenvironmental investigation will be required to satisfy Planning requirements for the proposed development. Additionally, a detailed geoenvironmental investigation will be required to target any identified sources of contamination identified as part of the exploratory geoenvironmental investigation as well as a detailed design investigation to inform the geotechnical design of the proposed development.
This Executive Summary is intended as a summary of the geotechnical and geoenvironmental assessment of the site in the context of the current development proposals based on information received by Cundall at the time of production and should be read in conjunction with the main Report text.	

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1011461.GL.DWG.002 Preliminary Conceptual Site Model
1011461.GL.DWG.003 Geotechnical Constraints

APPENDICES

Appendix A	Historical Maps and Plans
Appendix B	Envirocheck Report
Appendix C	Historical Borehole Records
Appendix D	CON29M Non-Residential Mining Report
Appendix E	Preliminary Unexploded Ordnance UXO Threat Assessment
Appendix F	Detailed Unexploded Ordnance UXO Threat & Risk Assessment
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1.0

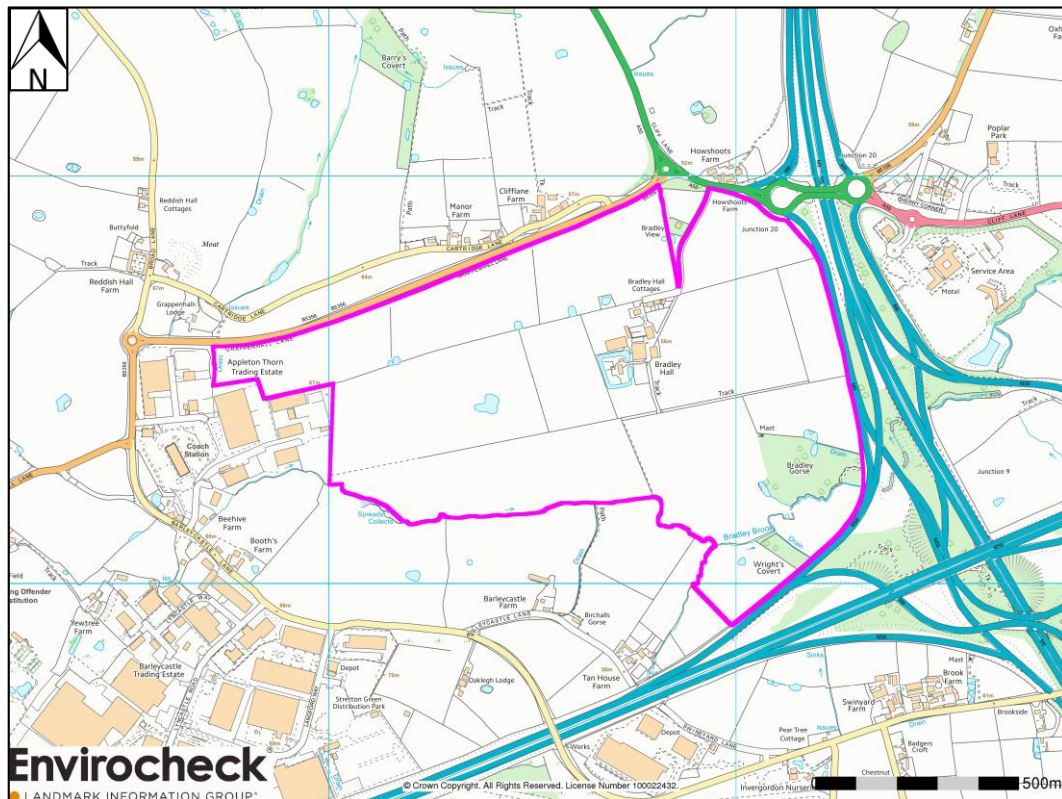
Introduction

1.0 Introduction

1.1 Context

First Industrial / Langtree (the Client) are proposing to redevelop the site of approximately 93.66 hectares located approximately 6 km from the centre of Warrington, Cheshire. The site is situated at approximate Grid Reference 364910, 385200 and the site's location and boundary is shown in Figure 1.

Figure 1: Site Location Plan



1.2 Objectives and Scope of Assessment

Cundall was commissioned by the Client to undertake a Phase I Geotechnical and Geoenvironmental Assessment for the site in the context of the proposed development in order to assess potential geoenvironmental risks and geotechnical constraints to inform scheme design and provide outline recommendations for further work as considered necessary.

This desk study is based upon review of published and readily available information pertaining to the site and a site inspection visit and includes a preliminary conceptual site model (CSM) and geoenvironmental risk assessment.

1.3 The Scheme

The proposed development is understood to comprise industrial / commercial warehouse units located across the site, surrounding the existing Bradley Hall and Bradley Gorse, including areas of soft landscaping and three large ponds.

1.4 Sources of Information

This Report has been based on a review of readily available published information and background research, including, but not limited to, the sources described below. Where additional sources of background information have been used, these are stated in the text.

1. 6 Alpha Associates. 18 September 2017. Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment, project number P6173 Version number 1.0.
2. The Coal Authority. 15 September 2017. CON29M Non-Residential Mining Report, reference 139491618_1.
3. 6 Alpha Associates. 14 September 2017. Preliminary Unexploded Ordnance (UXO) Threat Assessment, reference 139294091_2.
4. Environment Agency (EA). 14 August 2017. What's In Your Backyard. <http://apps.environment-agency.gov.uk/wiyby/>
5. British Geological Survey (BGS). 14 August 2017. Geology of Britain Viewer. <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>
6. Landmark Information Group. 14 August 2017. Envirocheck Report, reference 135773225_1_1.
7. Cundall Johnston & Partners LLP (Cundall). 15 September 2017. Warrington Interchange MP Drainage and Flood Baseline Assessment, reference 1015524-RPT-CL-001.

1.5 Limitations

The findings and opinions conveyed in this report are based on information obtained from a variety of readily available sources as detailed within the report and which Cundall believes are reliable. The information contained in this report is to the best of our knowledge accurate at the date of issue. If new information comes to light pertaining to the site or proposed development, Cundall reserves the right to review the information and revise the recommendations made in the report.

2.0

Site Description

2.0 Site Description

2.1 Site Details

A summary of the site's key features is given in Table 1.

Table 1: Site Description

Site Area and Shape	The site comprises an irregular shaped parcel of land approximately 93.66 Ha in area.
Site Boundaries and Adjacent Land Use	The B5356 runs along the northern site boundary meeting the A50 to the north east of the site with farmland beyond. Bradley View house is located immediately north of the site, to the south of the B5356. The M6 is located to the east of the site running along the site boundary. Bradley Brook is located along the southern boundary of the site with farmland associated with Barleycastle Farm beyond. Appleton Thorn Trading Estate lies immediately west of the site.
Site Topography	The site generally slopes from the north of the site downward to the south east and south of the site towards Bradley Brook with a level difference of about 10 m.
Existing Land Uses/Features and Surface Cover	Most of the site is in agricultural production, generally comprising arable in the north under crop, and livestock in the south under pasture. A number of buildings associated with Bradley Hall Farm, including Bradley Hall are located in the centre of the site with Bradley Hall Cottages directly to the north. An area of dense woodland known as Bradley Gorse is located in the south east corner of the site and Bradley Brook runs through the south east corner of the site, south of Bradley Gorse.

2.2 Site Inspection & Key Features

A site inspection was undertaken by a Cundall Geoenvironmental Engineer on 30 August 2017. Key features identified as part of the walk over are described below and relevant photographs are presented on drawing number 1015524.DWG.GL.001.

- A number of ponds are present across the site, with four located in the north of the site (see Image 1).
- Buildings associated with Bradley Hall Farm are located in the centre of the site, including a number of corrugated metal sheds, a brick building and storage tanks (see Image 2).
- Bradley Cottages are located to the north of Bradley Hall Farm in the centre of site (see Image 3)
- A power mast and cabinet are located in the south east of the site (see Image 4).
- An area of dense woodland called Bradley Gorse is located in the south east corner of the site (see Image 5).
- Wrights Covert is an area of trees located in the south east corner of the site (see Image 6).
- Bradley Brook runs along the southern site boundary and enters the south east corner of the site (see Image 7).
- A water tank and drinking container are located in the south of the centre of the site adjacent to a pile of granular material with large pieces of brick and concrete (see Images 8 and 9).
- Pastoral fields cover the western half of the site (see Image 10).
- A track runs through the centre of site from Bradley Hall Farm and connects with a track running east to west to the south of the farm (see Image 11).
- Bradley Hall is in the centre of the site, to the south west of Bradley Hall Farm, and is surrounded by a moat (see Image 12).

3.0

Historical Development

3.0 Historical Development

3.1 Historical Review

Available historical maps were reviewed and a summary of historic land use considered relevant to the proposed development site is given in Table 2, with distances noted from the closest boundary of the site. Copies of the historical maps and plans are presented in Appendix A.

Table 2: Summary of Historical Land Use

Date	Scale (Source)	Relevant Site Features	Surrounding Land Use (Note: Distances are approximate)
1874 – 1877, 1876 – 1877 & 1877	1:2,500 (Cheshire)	<p>Bradley Hall Farm is located in the centre of the site with a moat and orchard surrounding a number of buildings.</p> <p>A number of trees are recorded in the south west corner and the north east corner of the site.</p> <p>An area of woodland is recorded in the south east corner of the site and an additional large area of woodland in the south east of the site is labelled 'Bradley Gorse'.</p> <p>Bradley Brook runs along the southern site boundary and enters the site in the south east corner. The brook then runs across the site to the north east.</p> <p>There are 21 ponds recorded on site and a water course running from one of the ponds in the north to a pond located ~10m north of the site.</p> <p>See drawing 1015524.DWG.GL.003 for locations of historical water features located on site.</p>	<p>Grappenhall Lodge is located immediately north west of the site with Cartridge Lane running ~90m north, parallel to the north west boundary. Clifflane Farm is located ~30m north of the site off Cartridge Lane.</p> <p>A Houshed is recorded ~50m north of the site off Cartridge Lane.</p> <p>A pond and sluice are recorded ~180m north of the site associated with a water course running south west to north east, north of the site.</p> <p>Barleycastle Lane is located ~280m south of the site running parallel with the southern site boundary.</p> <p>A number of trees are recorded surrounding Bradley Brook immediately south of the western site extents.</p> <p>Booth's Farm and Beehive Farm are located ~250m and ~360m south west of the site, respectively.</p> <p>There are fifteen ponds recorded within 200m of the site.</p>
1881 - 1882	1:10,560 (Cheshire)	No significant changes.	No significant changes.
1898	1:10,560 (Cheshire)	<p>The trees previously located in the south west of the site are no longer recorded. Additionally, the pond located in the south west corner of the site is now recorded as two separate ponds.</p> <p>The orchard previously surrounding Bradley Hall is no longer recorded.</p> <p>A water course is now located in the north of the site adjacent to Clifflane Farm, joining the watercourse running through the centre of the site.</p>	<p>The Houshed located ~90m north of the site off Cartridge Lane is now recorded as How shoots.</p> <p>Manor Farm is recorded ~50m north of the site, to the west of Clifflane farm.</p>
1910 & 1910 – 1911	1:2,500 & 10,560 (Cheshire)	The area recorded in the south east of the site is recorded as Wright's Covert	<p>A well is recorded ~45m north of the site adjacent to Manor Farm.</p> <p>The trees previously noted surrounding Bradley Brook immediately south of the site in the west are no longer recorded and an area of marshland is recorded in the same locations.</p>

Date	Scale (Source)	Relevant Site Features	Surrounding Land Use (Note: Distances are approximate)
1938	1:10,560 (Cheshire)	No significant changes.	No significant changes.
1954	1:10,000 (Ordnance Survey Plan)	No significant changes.	An airfield is recorded ~400m south of the site.
1964 – 1966, 1966 & 1967	1:10,000 & 1:2,500 (Ordnance Survey Plan)	The pond and small areas of trees previously located in the south west corner of the site are no longer recorded and the area is completely clear of features.	The well previously located ~45m north of the site adjacent to Manor Farm is no longer recorded. Hullbrow Farm previously located ~350m north west is now recorded as Reddish Hall Cottages. The marshland located along Bradley Brook immediately south of the site is labelled 'spreads and collects'. A general storage depot is located immediately west of the site. The M6 is recorded running south east to north west parallel to the eastern site boundary. A roundabout connecting the M6 with Cliff Lane to the north of the site is located within ~50m to the north east of the site. Bradley Brook is noted to have been culverted to the east of the site, beneath the gantries of the motorway. Bradley View is recorded immediately north of the site to the north east of Bradley Hall.
1970 – 1971	1:10,000 (Ordnance Survey Plan)	A drain is recorded along the western site boundary in the north west corner of the site. A number of buildings labelled as Bradley Hall Cottages are recorded on the site to the north east of Bradley Hall.	Embankments are recorded to the north east of the site associated with Reddish Hall Farm. The airfield recorded ~400m south of the site is now noted to be disused.
1975	1:25,000 (Manchester)	No significant changes.	The M56 runs south west to north east, south of the site ~50m from the south east corner of the site.
1978 – 1991 & 1978 - 1992	1:2,500 (Additional SIMs)	No significant changes.	No significant changes.
1984	1:10,000 (Russian Military Mapping)	No significant changes.	No significant changes.
1991 & 1992 & 1992-1993	1:2,500 & (Additional SIMs) & 1:10,000 (Ordnance Survey Plan)	The two of the ponds previously located in the north west corner of the site are no longer recorded and two ponds are still recorded.	Grappenhall Lane B5356 is recorded immediately north of the northern site boundary orientated west – east.

Date	Scale (Source)	Relevant Site Features	Surrounding Land Use (Note: Distances are approximate)
1993	1:2,500 (Large-Scale National Grid Data)	No significant changes.	No significant changes.
1999	1:10,000 (10k Raster Mapping)	No significant changes.	The storage depot immediately west of the north of the site is recorded as Appleton Thorn Trading Estate.
2000	(Historical Aerial Photography)	1:10,000 (10k Raster Mapping)	No significant changes.
2006	1:10,000 (10k Raster Mapping)	No significant changes.	No significant changes.
2017	1:10,000 (VectorMap Local)	A total of 12 ponds are now recorded on site.	There are now five ponds recorded within 200 m of the site.

3.2 Historical Development Summary

3.2.1 On Site

The site's recorded land use history has generally remained unchanged; namely with agricultural uses. The mapping does indicate that the number of ponds on the site has reduced by about half, implying some localised infilling.

3.2.2 Surrounding Land Use

The key changes in the surrounding land use are noted as follows:

- In 1877, the land surrounding the site is mainly farmland with a number of farms, including Cliff Lane Farm ~30m north of the site, and fifteen ponds located within 500m of the site.
- In 1954, an airfield is recorded to cover the area ~400m south of the site. By 1970, the airfield is noted to be disused however it is still recorded on the mapping in 2017.
- By 1964, the M6 is recorded running parallel with the eastern site boundary and by 1975, the M56 is recorded ~50m south of the site.
- A general storage depot is recorded immediately west of the site by 1967 and is later recorded as Appleton Thorn Trading Estate in 1999. By 1999, the land to the north and west of the site has seen mostly residential development.
- By 2017, only five ponds are recorded within ~500m of the site implying a degree of infilling.

4.0

Geological Setting

4.0 Geological Setting

The information discussed in the following section was primarily obtained from BGS geology mapping (Ref 5, Section 1.4) and the Envirocheck Report prepared for the site (Ref 6, Section 1.4) which is presented in Appendix B. Where other data sources are used, these are detailed in the text.

4.1 Published Geology

4.1.1 Superficial Geology

Superficial deposits at the site are indicated to be Glacial Till, typically comprising firm to stiff clays with variable amounts of sands and gravels along with occasional lenses of granular materials. In the west of the site it is likely that rockhead will be shallow, as mapping of the area immediately west of the site shows superficial deposits to be absent.

4.1.2 Solid Geology

The entire site is underlain by the Bollin Mudstone Member, a red marl interbedded with evaporite deposits.

4.2 Historical Borehole Records

A number of historical boreholes are located within 100 m of the eastern site boundary and three of the most relevant borehole records are summarised in Table 3 below. The historical borehole records referenced in this report are presented as Appendix C.

Table 3 Historical Borehole Details:

BGS ID No.	BGS Reference	Orientation	Borehole Depth (m bgl)
657057	SJ68SE3	~ 50m East	5.38
657065	SJ68SE11	~ 75m East	4.25
657066	SJ68SE12	~ 50m East	3.05

The generalised stratigraphic sequence depicted within the three BGS boreholes is summarised in Table 4.

Table 4: Summary of Soil Stratigraphy from BGS Boreholes

Stratum	Strata Description*	Depth to Top of Stratum (mbgl)	Stratum Thickness (m)	Borehole Locations Encountered
Topsoil	-	0.00	0.30	657057,
Made Ground	Fine to medium sand to stiff brown sandy silty clay	0.00 to 0.30	1.60 to 3.00	All borehole locations
Glacial Till	Stiff silty clay	1.60 to 3.00	0.90 to 2.70	All borehole locations
Bollin Mudstone Member	Weak siltstone and sandstone	2.50 to 4.70	> 0.05 to >0.68	All borehole locations

*Strata descriptions based on those recorded on the exploratory hole logs.

The made ground encountered within the historical borehole records is likely to be associated with the development of the M6 to the east of the site and is therefore not anticipated to be located on site. Aside from the made ground, the stratigraphy recorded in the historical boreholes records are generally consistent with the published and anticipated geology for the site.

4.3 Mineral Extraction

The Coal Authority report (Ref 1, Section 1.4) indicates the site is not known to be in an area which may be affected by coal mining activity. The report is presented in Appendix D.

The report also indicates the site is located within the Cheshire Brine Subsidence Compensation District, however, it is not within any consultation area prescribed by the Board under Section 38(1) of the Cheshire Brine Pumping (compensation for Subsidence) Act 1952.

There are no BGS recorded mineral sites within 250m of the site. The closest is located 371m north west of the site recorded as an opencast Glaciofluvial sand mine under the name Buttyfold Farm and is noted to have 'ceased'.

Additionally, the Envirocheck Report (Ref 6, Section 1.4) records the following potential geological hazards / risks within the general site area:

- Very low risk of collapsible ground;
- No risk of compressible ground;
- No risk of ground dissolution;
- Very low risk of landslides; and
- No risk to very low risk of running sands.

5.0

Unexploded Ordnance (UXO) Risk

5.0 Unexploded Ordnance (UXO) Risk

A preliminary UXO risk assessment was obtained for the site due to the proximity of an airfield recorded on historical maps ~250m south of the site by 1954 to the present day, which may have existed during the second world war. The airfield is noted to be disused from 1970 onwards.

The report (ref 3, Section 1.4) indicated that the site has a high possibility of UXO encounter and therefore, a detailed UXO risk assessment was undertaken for the site.

The detailed UXO risk assessment classified the site as at medium risk of UXO encounter and recommended the following:

- An operational UXO emergency response plan
- UXO safety and awareness briefings required for all site personnel prior to the works commencing.
- An on-call EOD Engineer to identify/advise the appropriate course of action, if required.

The risk mitigation measures outlined above should be employed during any subsequent intrusive ground investigation or construction phases.

The preliminary UXO threat assessment is presented in Appendix E and the detailed UXO threat and risk assessment is presented in Appendix F.

6.0

Geoenvironmental Setting

6.0 Geoenvironmental Setting

The information discussed in the following section was primarily obtained from the Envirocheck Report prepared for the site (Ref 6, Section 1.4), where other data sources are used these are detailed in the text.

6.1 Hydrology

There are twelve ponds located on site and Bradley Brook is recorded running along the southern site boundary (flowing west to east), entering the site in the south west corner. Additionally, a drain is located along the western boundary in the north west corner of the site, and a moat surrounds Bradley Hall in the centre of the site.

The Drainage and Flood Baseline Assessment (Ref 7, Section 1.4) prepared for the site by Cundall outlines the flooding potential at the site and should be referred to for further information regarding flood risk.

6.2 Hydrogeology

The superficial Glacial Till is classified as a Secondary Aquifer – Undifferentiated and the underlying Bollin Mudstone Member bedrock is classified as a Secondary Aquifer – B by the Environment Agency and therefore, is generally capable of storing only limited amounts of groundwater.

The site is not located within an Environment Agency groundwater Source Protection Zone.

The Envirocheck Report indicates there to be no groundwater abstractions within 250m of the site.

6.3 BGS Urban Soil Chemistry Averages

The BGS estimated soil chemistry data covering the site and the immediate vicinity indicated the following likely total soil concentration averages at the site:

- Arsenic (<15 mg/kg)
- Cadmium (<1.8 mg/kg)
- Chromium (60 – 90 mg/kg to 90 – 120 mg/kg))
- Lead (<100 mg/kg)
- Nickel (15 – 30 mg/kg)

It should be noted that the above soil chemistry data provided by BGS for the site are indicative only and the actual soil concentrations will require confirmation by intrusive site investigation.

6.4 Landfill & Waste

There are no BGS Recorded Landfill site, Local Authority Recorded Landfill sites, Registered Landfill sites or Historical Landfill sites within 1km of the site.

There are no registered Waste Treatment or Disposal sites, registered Waste Transfer sites, Licenced Waste Management Facilities (Landfill Boundaries or Locations) or registered Integrated Pollution Control Registered Waste sites within 1 km of the site.

6.5 Infilled Land

There are no recorded Potentially Infilled Land (Non-Water) located within 250m of the site.

There is one Potentially Infilled Land (Water) site located in the west of the site by 1882 which is most likely to relate to a water feature present prior to historical mapping of the site. There are twelve recorded Potentially Infilled Land (Water) sites within 250m of the site classified as Unknown Filled Ground and are likely to relate to the infilling of ponds and / or water courses surrounding the site (including Bradley Brook).

Additionally, historical maps indicate a number of infilled ponds located on site and in close proximity of the site.

6.6 Radon

The site is in a lower probability radon area where less than 1% of homes are estimated to be at or above the action level. As such radon protection measures will not be required.

6.7 Statutory Registers & Environmental Data

6.7.1 Discharge Consents

There are three registered discharge consents within 250m of the site. All three consents are registered to WWTW at Three Properties (Tanhouse Cottage) on Barleycastle Lane and relate to the discharge of final/ treated effluent into Bradley Brook.

6.7.2 Pollution Incidents & Pollution Prevention and Controls

Two Local Authority Pollution Prevention and Controls are recorded within 500m of the site. The closest is located 82m north west of the site in Appleton Thorn Industrial Estate registered under the name Buildmix and relates to blending, packing, loading and the use of bulk cement. The other site is located 301m west of the site, registered under Haulmark Equipment Ltd.

There are three Pollution Incidents to Controlled Waters recorded within 250m of the site. The closest is a Category 3 – minor incident recorded 88m north west of the site involving crude sewage pollution. One Category 2 – significant incident is recorded 145m north west of the site relating to crude sewage pollution. The remaining Pollution Incident to Controlled Waters is located 112m north of the site, rated a Category 3 – minor incident, relating to a miscellaneous – unknown pollutant.

None of the following are located within 250m of the site:

- Integrated Pollution Controls and Integrated Pollution Prevention and Control.
- Enforcement and Prohibition Notices.
- Control of Major Accident Hazards Sites (COMAH)
- Prosecutions relating to Authorised Processes or Controlled Waters.
- Local Authority Pollution Prevention and Control Enforcements.
- Local Authority Integrated Pollution Prevention and Control.

6.8 Industrial Land Use & Fuel Station Entries

The Envirocheck Report refers to 11 contemporary trade directory entries recorded within 250m of the site. Those entries relating to potentially significant contaminative land usages are described as follows:

- A car body repairs registered as Howley Quay Motors on Grappenhall Lane, 164m north west of the site, listed as active.
- A petrol filling station listed as Lymm Service Station on Cliff Lane, located 191m north of the site, is recorded as active.

Additionally, two further fuel station entries recorded 191m north of the site both relate to Lymm Service Area along Cliff Lane.

6.9 Sensitive Land Use & Other Environmental Information

The whole site falls within an area of Adopted Green Belt and an area of Unadopted Green Belt is recorded in the south east of the site.

None of the following were recorded within 250m of the site:

- Contaminated Land Register Entries or Notices.
- Nitrate Vulnerable Zones
- Notification of Installations Handling Hazardous Substances (NIHHS).

- Sensitive land uses including; Ancient Woodland, National Parks, World Heritage Sites, Special Areas of Conservation, World Heritage Sites and Local Nature Reserves.

6.10 Summary of Potential Contaminative Sources Affecting the Site

The main land use on the site has been agricultural up to the present day with Bradley Hall Farm and Bradley Cottages present on site during this time. Additionally, a number of historical infilled ponds are recorded on, and in close proximity to, the site.

The following sources of potential contamination are therefore considered plausible:

- The infilled ponds located on the site and surrounding the site are considered to be a potential source of hazardous ground gas.
- Contamination associated with the agricultural use of the site within the topsoil (i.e. agrichemicals).
- Asbestos containing materials which may be present within shallow soils on site as a result of the age and both the historical and current use of the buildings associated with Bradley Hall Farm.

7.0

Preliminary Conceptual Site Model

7.0 Preliminary Conceptual Site Model

7.1 Background Methodology

Reference should be made to the detailed information on the geoenvironmental risk assessment framework and methodology presented in Appendix G.

7.2 Preliminary Conceptual Site Model

A preliminary Conceptual Site Model (CSM) of the site has been generated in the context of existing development proposals and it is outlined in Table 5 below.

Table 5: Potential Sources, Pathways and Receptors

Potential Sources of Contamination
Contamination on site associated with the agricultural use of the site (agricultural chemicals)
Infilled ponds located on site and in close proximity to the site
Weathering (oxidising) of the shallow, sulphate rich bedrock on site.
Asbestos containing materials on site associated with Bradley Hall Farm.
Potential Contamination Migration Pathways
Ingestion of soils during and following construction
Direct contact during and following construction
Inhalation of fugitive dust during and following construction
Lateral and vertical migration of mobile contaminants
Lateral and vertical migration of ground gas
Direct contact of buried concrete.
Potential Contamination Receptors
Construction workers (during construction)
Adjacent site users (during construction)
Site end users
Controlled Waters: Secondary Aquifers
Controlled Waters: Surface water – Bradley Brook and water features located on site
Built environment / structures

7.3 Risk Assessment Considerations

Table 6 summarises the key considerations in this risk assessment.

Table 6: Risk Assessment Considerations

Human Health	<ul style="list-style-type: none"> ▪ The infilled ponds located on, and adjacent to, the site are considered to be a possible source of hazardous ground gas. However, the low permeability strata are likely to break the pollutant linkage pathway. ▪ Construction and landscaping of the site may potentially expose any contamination present within topsoil across the site from agrichemicals. This is likely to be a decreasing risk over time due to the limited persistence of many agrichemicals. ▪ Due to the age and the historical use of Bradley Hall Farm, it is considered plausible that asbestos containing materials may be locally present, particularly close to Bradley Hall Farm. ▪ The risk of contamination during the construction phase can be partially mitigated by the appropriate use of PPE, site hygiene procedures and environmental controls during the works. ▪ The proposed development is to comprise a mixed use development with large areas of building and associated hard standing which would largely remove the 'source-pathway-receptor' linkage to the sites end users.
Built Environment	<ul style="list-style-type: none"> ▪ The infilled ponds located on, and adjacent to, the site are considered to be a possible source of hazardous ground gas. However, the low permeability strata are likely to break the pollutant linkage pathway. ▪ The bedrock on site is likely to be shallow and contain high oxidisable sulphate concentrations. The cutting and filling anticipated will likely allow much of the near to surface bedrock to be oxidised and sulphates liberated.
Controlled Waters	<ul style="list-style-type: none"> ▪ The nearest surface water receptors are Bradley Brook located in the east of the site and several water features located on site. ▪ Shallow groundwater is anticipated across the site due to the presence of Bradley Brook and additional present day and historical water features (ponds) located across the site. ▪ The Secondary B Aquifer bedrock is not within a source protection zone and there are no groundwater abstractions recorded within 250m of the site. The Glacial Till is a Secondary (Undifferentiated) Aquifer and is likely to significantly limit both lateral and vertical migration of any leachate.

7.4 Preliminary Risk Assessment

A preliminary risk assessment has been undertaken based on the reviewed information in this report. This is based upon the "source – pathway – receptor" conceptual risk model in accordance with the relevant UK legislation. Potential sources, pathways and receptors identified as part of the preliminary desk based assessment are presented in Table 7 and a graphical representation is presented in 1015524.DWG.GL.002.

Table 7: Preliminary Risk Assessment

Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Presence of contamination on site within shallow soils	1. Dermal contact	Construction workers	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
	2. Accidental ingestion	Construction workers	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
	3. Inhalation of fugitive dust	Construction workers / adjacent site users during construction	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
	4. Leaching of mobile contaminants / migration of contaminated groundwater	Secondary Aquifers / Surface Waters	Medium	Unlikely	Low
	5. Potable Water Supply Pipes	Construction workers / Site users	Medium	Unlikely	Low
Presence of asbestos containing materials on site – particularly close to Bradley Hall Farm	6. Inhalation of airborne fibres	Construction workers / adjacent site users during construction / site users	Severe	Unlikely	Moderate / Low
Oxidisable Sulphates	7. Direct attack of buried structures	Built Environment / Structures	Medium	Likely	High
Hazardous gas generated from on and off-site sources	8. Lateral / vertical migration and accumulation	Construction workers / Site users	Severe	Unlikely	Moderate
		Built Environment / Structures	Severe	Unlikely	Moderate

8.0

Development Constraints

8.0 Development Constraints

Possible development constraints that should be considered during scheme design have been identified as part of the desk study and are also presented in Drawing 1015524.DWG.GL.003. They include the following:

- The entire site is underlain by the Bollin Mudstone Member, a red marl interbedded with evaporite and is recorded to be within the Cheshire Brine Subsidence Compensation District. Therefore, there may be potential for the dissolution features to exist within the evaporite deposits where in contact with groundwater beneath the site and where salt workings may be present beneath the site.
- High sulphate concentrations resulting from the weathering of the Bollin Mudstone Member bedrock beneath the site have the potential to attack buried concrete.
- The bedrock is anticipated to be present at shallow depths in the centre and towards the west of the site. This may have an impact on deep drainage across the site and the ease of excavation for foundations and development platforms of proposed buildings.
- Groundwater levels beneath the site are anticipated to be shallow due to the presence of Bradley Brook and several ponds and water features located across the site.
- A number of historical ponds are assumed to have been infilled based upon historical mapping of the site.
- Organic material may be present across the site due to the presence of both historical and existing water features located on site. This may be soft and compressible, representing a risk to buildings in terms of both absolute and differential settlements.
- Due to the presence of cohesive Glacial Till deposits at the site and the number of trees located across the site, it is likely that the areas surrounding the trees have the potential to be significantly desiccated and at risk of volume change.

9.0

Recommendations for Further Works

9.0 Recommendations for Further Works

An exploratory geoenvironmental investigation will be required to support an ES Technical Chapter for the proposed development. These works should comprise the following:

- 360 No. Hand auger pits to approximately 1.2m depth with approximately 50m centre spacings across the site to confirm ground conditions;
- 40 No. Dynamic Sampler boreholes to approximately 5.0m to confirm ground and groundwater conditions at the site and to obtain samples for chemical testing;
- 10 No. water samples from Bradley Brook and selected boreholes;
- Appropriate chemical analysis;
- Installation of 10 No. groundwater and ground gas monitoring wells in selected exploratory holes;
- Monitoring of ground gas and groundwater on a minimum of four occasions over a period of no less than two months (in accordance with CIRIA C665 2007).



Additionally, a detailed geoenvironmental investigation will be required to target any identified sources of contamination identified as part of the exploratory geoenvironmental investigation.

Furthermore, a detailed design investigation will also be required to inform the geotechnical design of the proposed development including cut and fill works, earthworks, road, drainage and foundation design and to further quantify the risks associated with the development constraints outlined in Section 8.0.

Drawings

DO NOT SCALE FROM THIS DRAWING

Notes

-  Site Boundary
-  Image Location & Direction

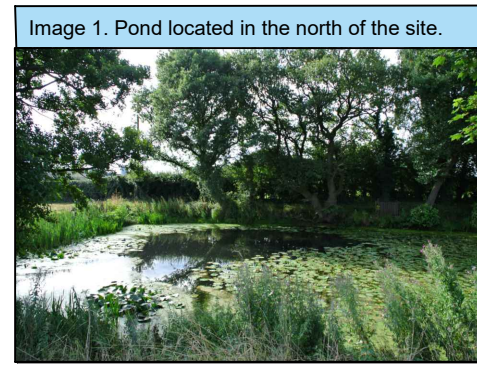


Image 1. Pond located in the north of the site.

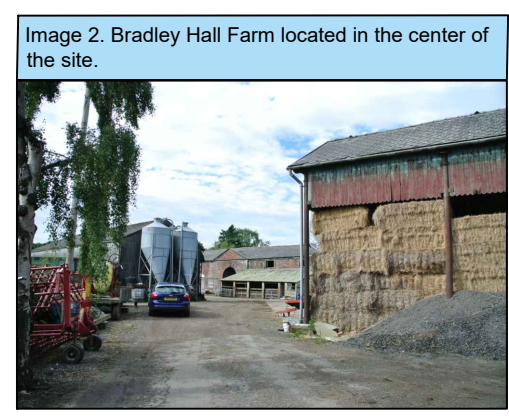


Image 2. Bradley Hall Farm located in the center of the site.



Image 3. Bradley Cottages are located in the center of the site to the north of Bradley Farm.



Image 4. A power mast and cabinet are located in the south east of the site.



Image 5. Bradley Gorse is an area of dense woodland located in the south east of the site.

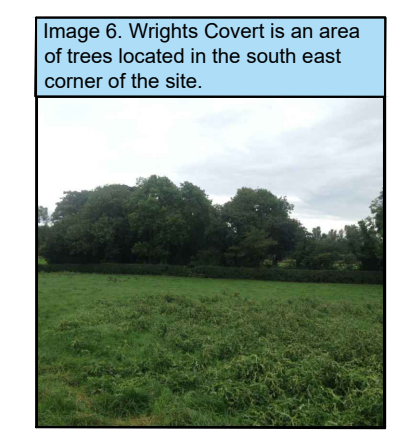


Image 6. Wrights Covert is an area of trees located in the south east corner of the site.

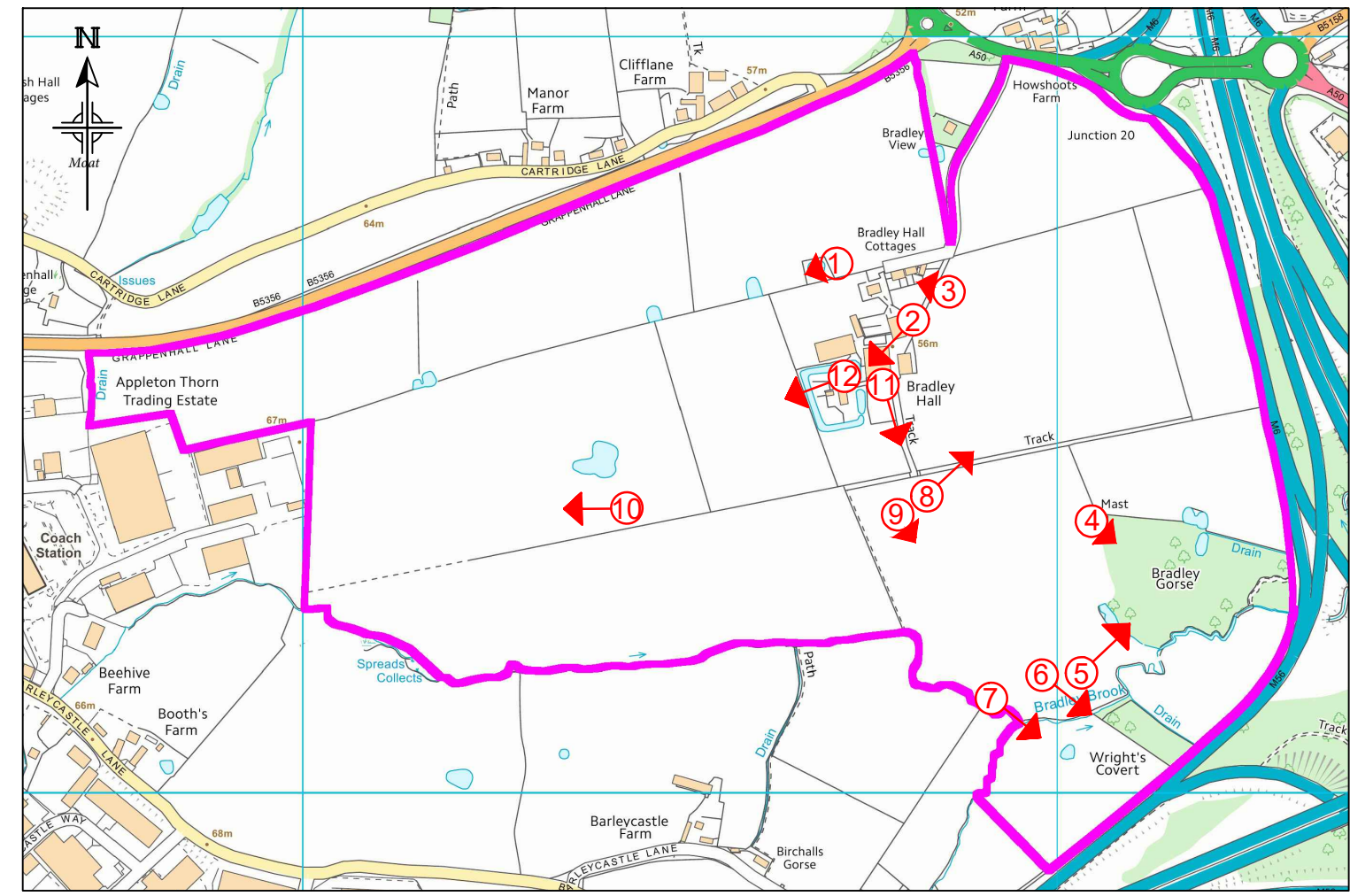


Image 12. Bradley Hall is located in the center of the site, south of Bradley Hall Farm.



Image 11. A track runs north to south through the center of the site and meets with a track running east to west, to the south of Bradley Farm.



Image 10. Pastoral fields cover the western half of the site.

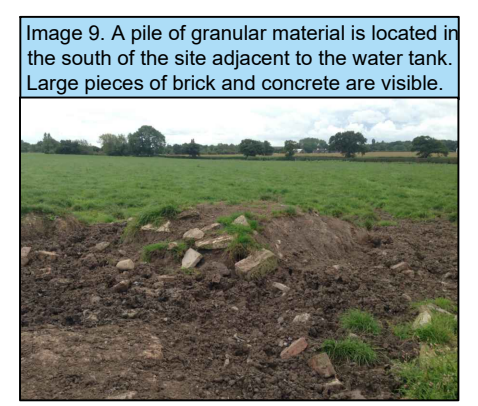


Image 9. A pile of granular material is located in the south of the site adjacent to the water tank. Large pieces of brick and concrete are visible.



Image 8. A water tank and container are located in the south of the site.



Image 7. Bradley Brook runs along the southern site boundary and enters the site in the south east.

Issue	Date	Description	By	Chkd	Verfd
-	31/08/17	For Information	LB	DS	JA

Project
Warrington Interchange Masterplan

Client
First Industrial / Langtree

Architect
Stephen George & Partners LLP

Title
Key Features Plan

Drawing No. 1015524.DWG.GL.001 Drawing Status Final

Job No. 1013398 Scale NTS

Originator LB	Checked DS	Verified JA	Issue. -
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CUNDALL






4th Floor, Partnership House
Regent Farm Road,
Gosforth,
Newcastle NE3 3AF
Telephone: +44 (0)191 213 1515
Website: www.cundall.com

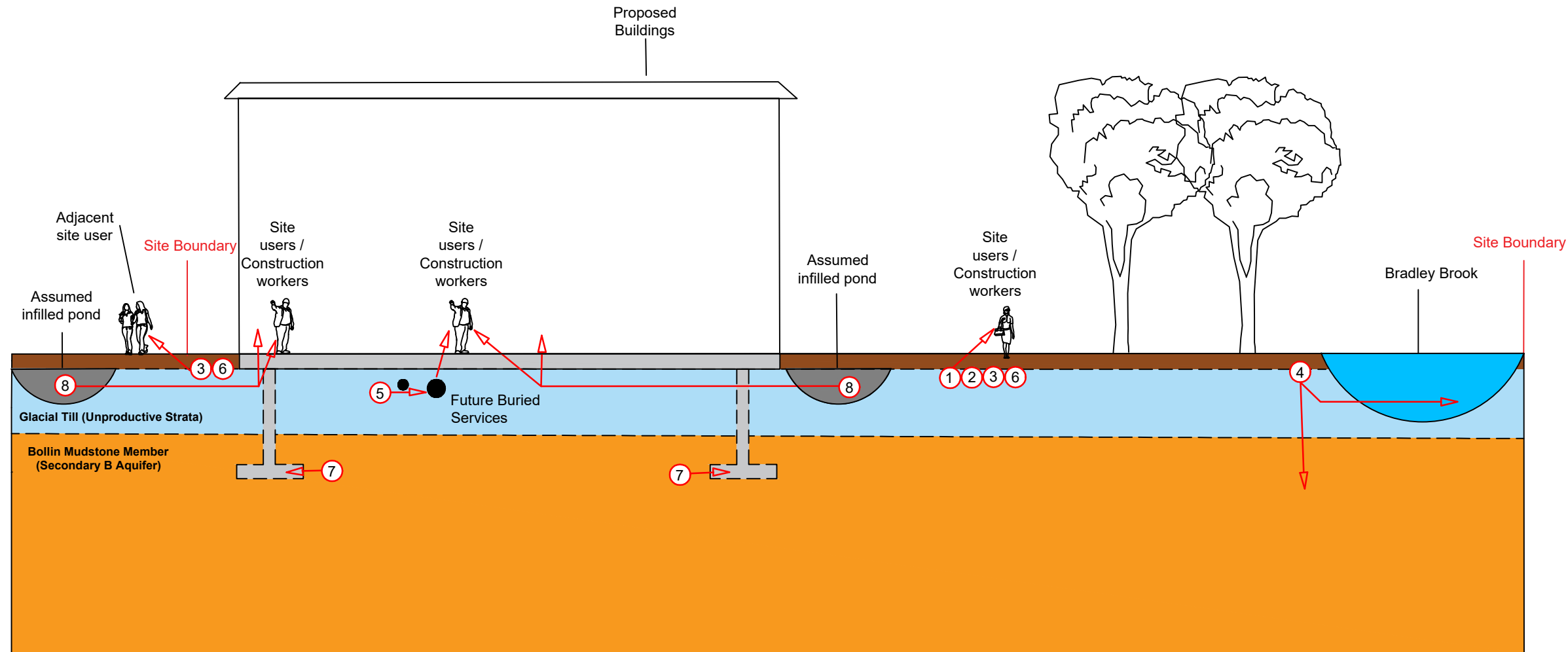
DO NOT SCALE FROM THIS DRAWING

Notes

This Preliminary Conceptual Site Model is based upon the identified 'Source - Pathway - Receptor' linkages identified by this report.

Legend

-  Topsoil
-  Glacial Till
-  Bollin Mudstone Member
-  Potential Contaminant Linkage
-  Inferred Strata Boundary



Contaminant Source	Pathway	Receptor	Consequence of Pollutant Linkage	Likelihood of Pollutant Linkage	Overall Risk
Presence of contamination on site within shallow soils	1. Dermal contact	Construction workers	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
	2. Accidental ingestion	Construction workers	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
	3. Inhalation of fugitive dust	Construction workers / adjacent site users during construction	Severe	Low	Moderate
		Site users	Severe	Unlikely	Moderate / Low
4. Leaching of mobile contaminants / migration of contaminated groundwater	Secondary Aquifers / Surface Waters	Medium	Unlikely	Low	
	5. Potable Water Supply Pipes	Construction workers / Site users	Medium	Unlikely	Low
Presence of asbestos containing materials on site within shallow soils	6. Inhalation of airborne fibres	Construction workers / adjacent site users during construction / site users	Severe	Unlikely	Moderate / Low
Oxidisable Sulphates	7. Direct attack of buried structures	Built Environment / Structures	Medium	High	High
Hazardous gas generated from on site and offsite sources	8. Lateral / vertical migration and accumulation	Construction workers / Site users	Severe	Low	Moderate
		Built Environment / Structures	Severe	Low	Moderate

-	30.08.17	For Information	LB	DS	KM
Issue	Date	Description	By	Chkd	Verfd

Project
Warrington Interchange Masterplan

Client
First Industrial / Langtree
Architect
Stephen George & Partners LLP

Title
Preliminary Conceptual Site Model

Drawing No. 1015524.DWG.GL.002
Drawing Status Final

Job No. 1015524
Scale Not to Scale

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Notes

Key:

- Existing Water Feature's may result in soft ground in their surroundings
- Historical Water Features (presumed to be infilled) are a potential source of ground gas and soft ground within their surroundings
- Development Boundary
- 5m impact radius around Water Features

The entire site is underlain by Bollin Mudstone Member and high sulphate concentrations are likely to result from the weathering of this bedrock.

The bedrock is anticipated to exist at shallow depths beneath the site, particularly in the center and the west. The superficial cohesive Glacial Till could result in desiccation of the clay surrounding trees located on site.

Additionally, there is a potential for the site to be at risk from UXO due to the airfield located ~400m south of the site.

Issue	Date	Description	By	Chkd	Verifd
-	21.08.17	For Information	LB	DS	KM

Project
Warrington Interchange MP

Client
First Industrial / Langtree

Architect
Stephen George & Partners LLP

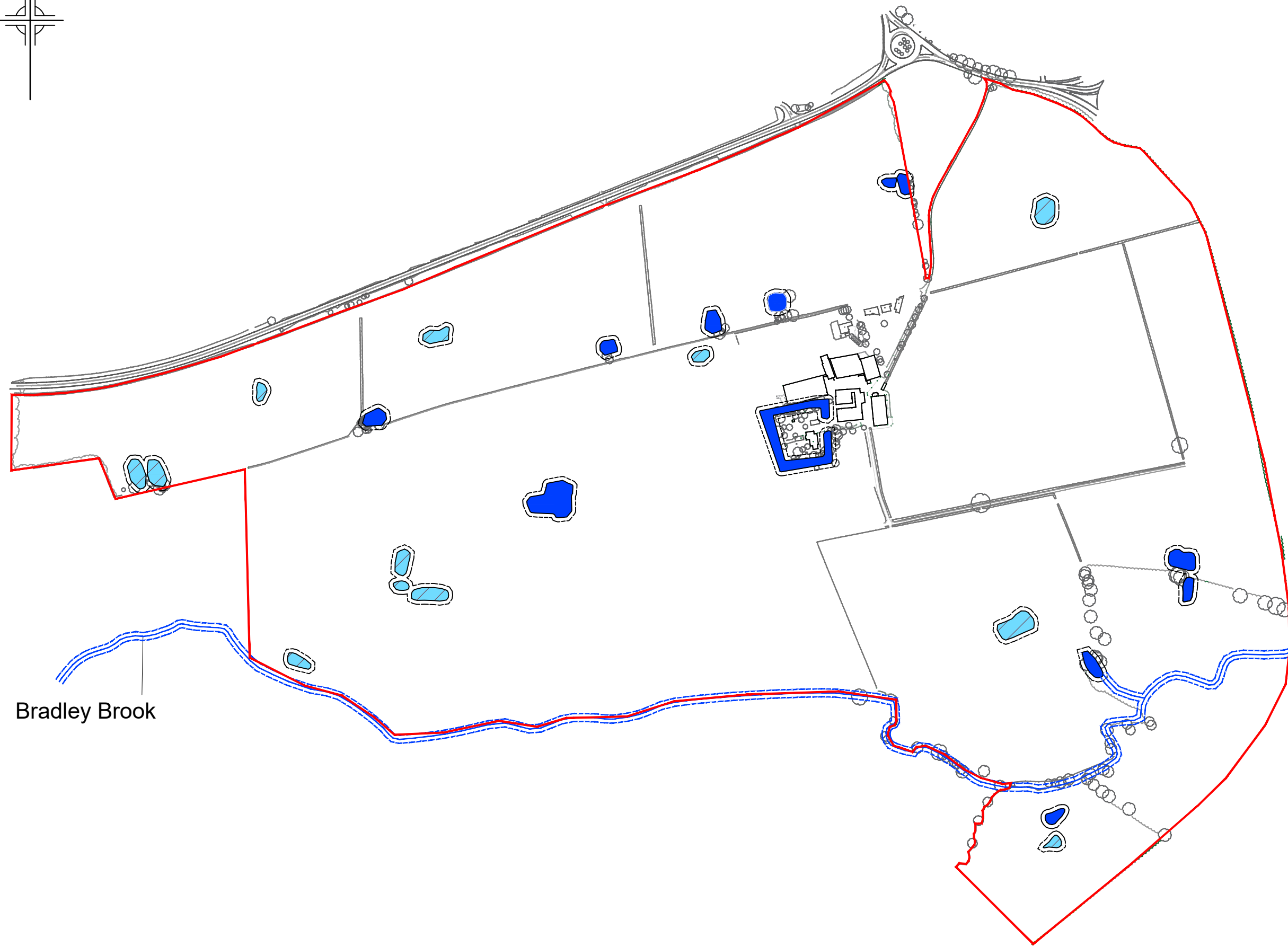
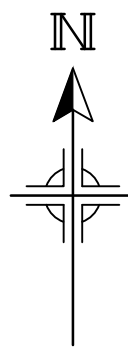
Title
Geological Constraints Drawing

Drawing No. 1015524.DWG.GL.003 Drawing Status Final

Job No. 1015524 Scale 1:5000

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4th Floor, Partnership House
Regent Farm Road,
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Bradley Brook

Appendix A: Historical Maps & Plans

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

	Gravel Pit		Sand Pit		Other Pits
	Quarry		Shingle		Orchard
	Osiers		Reeds		Marsh
	Mixed Wood		Deciduous		Brushwood
	Fir		Furze		Rough Pasture
	Arrow denotes flow of water		Trigonometrical Station		
	Site of Antiquities		Bench Mark		
	Pump, Guide Post, Signal Post		Well, Spring, Boundary Post		
	-285 Surface Level				
	Sketched Contour		Instrumental Contour		
	Main Roads		Minor Roads		
	Sunken Road		Raised Road		
	Road over Railway		Railway over River		
	Railway over Road		Level Crossing		
	Road over River or Canal		Road over Stream		
	Road over Stream				
	County Boundary (Geographical)				
	County & Civil Parish Boundary				
	Administrative County & Civil Parish Boundary				
	County Borough Boundary (England)				
	County Burgh Boundary (Scotland)				
	Rural District Boundary				
	Civil Parish Boundary				

Ordnance Survey Plan 1:10,000

	Chalk Pit, Clay Pit or Quarry		Gravel Pit
	Sand Pit		Disused Pit or Quarry
	Refuse or Slag Heap		Lake, Loch or Pond
	Dunes		Boulders
	Coniferous Trees		Non-Coniferous Trees
	Orchard		Scrub
	Coppice		
	Bracken		Heath
	Rough Grassland		
	Marsh		Reeds
	Saltings		
	Building		Glasshouse
	Sloping Masonry		Pylon
	Electricity Transmission Line		Pole
	Cutting		Embankment
	Standard Gauge Multiple Track		
	Standard Gauge Single Track		
	Siding, Tramway or Mineral Line		
	Narrow Gauge		
	Geographical County		
	Administrative County, County Borough or County of City		
	Municipal Borough, Urban or Rural District, Burgh or District Council		
	Borough, Burgh or County Constituency Shown only when not coincident with other boundaries		
	Civil Parish Shown alternately when coincidence of boundaries occurs		
	BP, BS Boundary Post or Stone		Pol Sta Police Station
	Ch Church		PO Post Office
	CH Club House		PC Public Convenience
	F E Sta Fire Engine Station		PH Public House
	FB Foot Bridge		SB Signal Box
	Fn Fountain		Spr Spring
	GP Guide Post		TCB Telephone Call Box
	MP Mile Post		TCP Telephone Call Post
	MS Mile Stone		W Well

1:10,000 Raster Mapping

	Gravel Pit		Refuse tip or slag heap
	Rock		Rock (scattered)
	Boulders		Boulders (scattered)
	Shingle		Mud
	Sand		Sand Pit
	Slopes		Top of cliff
	General detail		Underground detail
	Overhead detail		Narrow gauge railway
	Multi-track railway		Single track railway
	County boundary (England only)		Civil, parish or community boundary
	District, Unitary, Metropolitan, London Borough boundary		Constituency boundary
	Area of wooded vegetation		Non-coniferous trees
	Non-coniferous trees (scattered)		Coniferous trees
	Coniferous trees (scattered)		Positioned tree
	Orchard		Coppice or Osiers
	Rough Grassland		Heath
	Scrub		Marsh, Salt Marsh or Reeds
	Water feature		Flow arrows
	MHW(S) Mean high water (springs)		MLW(S) Mean low water (springs)
	Telephone line (where shown)		Electricity transmission line (with poles)
	Bench mark (where shown)		Triangulation station
	Point feature (e.g. Guide Post or Mile Stone)		Pylon, flare stack or lighting tower
	Site of (antiquity)		Glasshouse
	General Building		Important Building

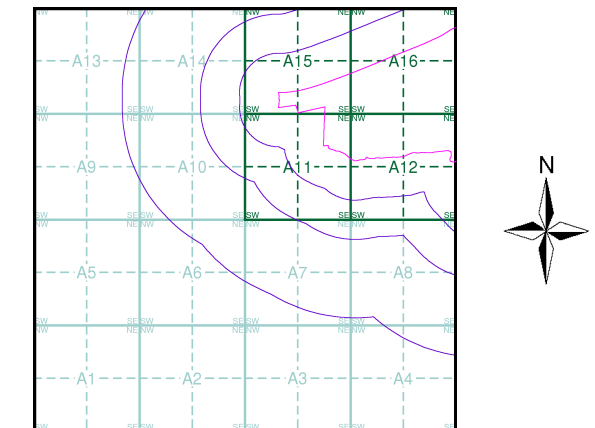
Envirocheck

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
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Cheshire	1:10,560	1881 - 1882	4
Cheshire	1:10,560	1899	5
Cheshire	1:10,560	1910 - 1911	6
Cheshire	1:10,560	1910 - 1911	7
Cheshire	1:10,560	1910 - 1911	8
Cheshire	1:10,560	1938	9
Cheshire	1:10,560	1938	10
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Ordnance Survey Plan	1:10,000	1964 - 1966	12
Ordnance Survey Plan	1:10,000	1967	13
Ordnance Survey Plan	1:10,000	1970 - 1971	14
Manchester	1:25,000	1975	15
Ordnance Survey Plan	1:10,000	1981 - 1987	16
Ordnance Survey Plan	1:10,000	1984	17
Warrington	1:10,000	1984	18
Ordnance Survey Plan	1:10,000	1992 - 1993	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2017	22

Historical Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500

Quarry **Gravel Pit** **Sand Pit**
Clay Pit **Shingle** **Refuse Heap**
Sloping Masonry **Flat Rock**
Marsh **Reeds** **Osiers**
Rough Pasture **Furze** **Wood**
Mixed Wood **Brushwood** **Orchard**
Fir **Ford** **Stepping Stones**
Ferry **Waterfall** **Lock**
Trig. Station **Altitude at Trig. Station**
B.M. 325.9 **Bench Mark** **Surface Level**
Arrow denotes flow of water **Antiquities (site of)**
Cutting **Embankment**
Railway crossing Road **Level Crossing** **Road crossing Railway**
Railway crossing River or Canal **Road over single stream** **Road over River or Canal**
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
County Borough Boundary (England)
Co. Boro. Bdy.
County Burgh Boundary (Scotland)
Boundary Post or Stone **Police Call Box**
B.R. **Bridle Road** **P** **Pump**
E.P. **Electricity Pylon** **S.P.** **Signal Post**
F.B. **Foot Bridge** **Sl.** **Sluice**
F.P. **Foot Path** **Sp.** **Spring**
G.P. **Guide Post or Board** **T.C.B.** **Telephone Call Box**
M.S. **Mile Stone** **Tr.** **Trough**
M.P. M.R. **Mooring Post or Ring** **W** **Well**

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250

Inactive Quarry, Chalk Pit or Clay Pit **Active Quarry, Chalk Pit or Clay Pit**
Rock **Boulders**
Cliff **Slopes** **Top**
Roofed Building **Glazed Roof Building**
Sloping Masonry **Archway**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Bench Mark** **Antiquity (site of)**
Cave Entrance **Triangulation Station** **Electricity Pylon**
Electricity Transmission Line
County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
London Borough Boundary
Symbol marking point where boundary mereing changes
BH **Beer House** **P** **Pillar, Pole or Post**
BP, BS **Boundary Post or Stone** **PO** **Post Office**
Cn, C **Capstan, Crane** **PC** **Public Convenience**
Chy **Chimney** **PH** **Public House**
D Fn **Drinking Fountain** **Pp** **Pump**
EI P **Electricity Pillar or Post** **SB, S Br** **Signal Box or Bridge**
FAP **Fire Alarm Pillar** **SP, SL** **Signal Post or Light**
FB **Foot Bridge** **Spr** **Spring**
GP **Guide Post** **Tk** **Tank or Track**
H **Hydrant or Hydraulic** **TCB** **Telephone Call Box**
LC **Level Crossing** **TCP** **Telephone Call Post**
MH **Manhole** **Tr** **Trough**
MP **Mile Post or Mooring Post** **Wr Pt, Wr T** **Water Point, Water Tap**
MS **Mile Stone** **W** **Well**
NTL **Normal Tidal Limit** **Wd Pp** **Wind Pump**

Large-Scale National Grid Data 1:2,500 and 1:1,250

Cliff **Slopes** **Top**
Rock **Rock (scattered)**
Boulders **Boulders (scattered)**
Positioned Boulder **Scree**
Non-Coniferous Tree (surveyed) **Coniferous Tree (surveyed)**
Non-Coniferous Trees (not surveyed) **Coniferous Trees (not surveyed)**
Orchard Tree **Scrub** **Bracken**
Coppice, Osier **Reeds** **Marsh, Saltings**
Rough Grassland **Heath** **Culvert**
Direction of water flow **Triangulation Station** **Antiquity (site of)**
Electricity Transmission Line **Electricity Pylon**
B.M. 231.60m **Bench Mark** **Buildings with Building Seed**
Roofed Building **Glazed Roof Building**
Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)
Bks **Barracks** **P** **Pillar, Pole or Post**
Bty **Battery** **PO** **Post Office**
Cemy **Cemetery** **PC** **Public Convenience**
Chy **Chimney** **Pp** **Pump**
Cis **Cistern** **Ppg Sta** **Pumping Station**
Dismtd Rly **Dismantled Railway** **PW** **Place of Worship**
EI Gen Sta **Electricity Generating Station** **Sewage Ppg Sta** **Sewage Pumping Station**
EI P **Electricity Pole, Pillar** **SB, S Br** **Signal Box or Bridge**
EI Sub Sta **Electricity Sub Station** **SP, SL** **Signal Post or Light**
FB **Filter Bed** **Spr** **Spring**
Fn / D Fn **Fountain / Drinking Ftn.** **Tk** **Tank or Track**
Gas Gov **Gas Valve Compound** **Tr** **Trough**
GVC **Gas Governor** **Wd Pp** **Wind Pump**
GP **Guide Post** **Wr Pt, Wr T** **Water Point, Water Tap**
MH **Manhole** **Wks** **Works (building or area)**
MP, MS **Mile Post or Mile Stone** **W** **Well**

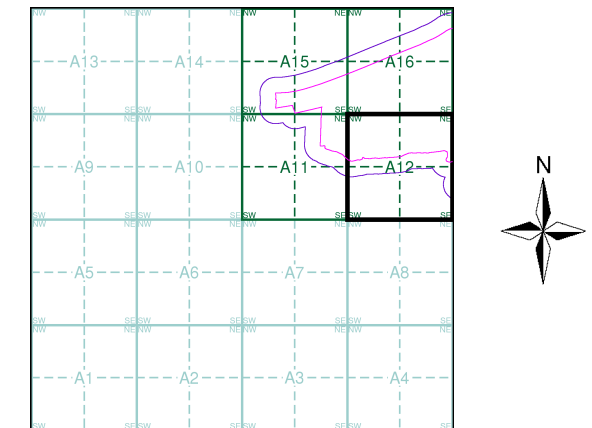
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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Cheshire	1:2,500	1877	2
Cheshire	1:2,500	1898	3
Cheshire	1:2,500	1910	4
Ordnance Survey Plan	1:2,500	1967	5
Additional SIMs	1:2,500	1978 - 1991	6
Ordnance Survey Plan	1:2,500	1986	7
Additional SIMs	1:2,500	1992	8
Large-Scale National Grid Data	1:2,500	1993	9
Historical Aerial Photography	1:2,500	2000	10

Historical Map - Segment A12



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Fireproof Building		Prominent Fireproof Building
	Non-fireproof Building		Non-fireproof Building (non-dwelling)
	Factory, mill, and flour mill, with chimneys		Factory, mill, and flour mill, without chimneys
	Power Station, drawn to scale		Hydroelectric Power Station
	Radio Station, drawn to scale		Telephone Station, drawn to scale
	Abandoned Open-pit Mine or Quarry		Open-pit Salt Mine
	Pit		Oil Deposit or Well
	Oil Seepage		Natural Gas Tank
	Tailings Pile		Fuel Storage Tanks
	Bench Mark		Drill Hole
	Burial Mound		Triangulation Point on Burial Mound
	Single-track Railroad		Double-track Railroad
	Railroad and Station Building		Small Bridge
	Pipe (Culvert)		Tunnel
	Coniferous Forest		Deciduous Forest
	Mixed Forest		Lawns
	Citrus Orchard		Wet Ground
	Scattered Vegetation		

243,8 Values for prominent elevations
186.0 Numbers for spot elevations, depth soundings, contour lines, etc.
0,2 Velocity of the current, width of river bed, depth of river
180/12 Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	Ъ (-)
Д д (D)	Л л (L)	У у (U)	Ы (Y)
Е е (E)	М м (M)	Ф ф (F)	Ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

	Government and Administrative Buildings		Military and Industrial Buildings
	Military and Communication Areas		Subway Entrance
	Partly Demolished Buildings		Demolished Buildings
	Built-Up Area with Fireproof Buildings Predominant		Built-Up Area with Non-Fireproof Buildings Predominant
	Individual Fireproof Building		Prominent Industrial Building
	Individual Dwelling, Fireproof		Ruins of an Individual Dwelling
	Factory or Mill Chimney		Factory or Mill with Chimney
	Factory or Mill without Chimney		Salt Mine
	Operating Shaft or Mine		Non-Operating Shaft or Mine
	Tailings Pile		Gas Pump or Service Station
	Fuel Storage or Natural Gas Tank		Oil or Natural Gas Derrick
	Small Hydroelectric Power Station		Power Station
	Transformer Station		Cemetery
	Burial Mound (height in metres)		Triangulation Point on Burial Mound
	Triangulation Point		Bench Mark
	Bench Mark (monumented)		Telegraph Office
	Telephone Station		Radio Station
	Radio Tower		Airfield or Seaplane Base
	Landing Strip		Cut
	Fill		Km Post
	Plantings		Width of Road
	Steep Grade		Highway under Construction
	Improved Dirt Road (former truck road)		Small Bridge
	Pipe (Culvert)		Tunnel
	Dismantled Railroad		Double-track Railroad with First Class Station
	Railroad Under Construction		Shore Embankment
	River or Ditch with Embankment		Water Gauge
	Direction and velocity of current		Water Level Mark
	Well		Spring
	Water Reservoir or Rain Water Pit		Isobath with value
	Heavy (Index) Contour Line		Half Contour Line
	Contour Line and Value		Spot Elevation Value
	Coniferous		Deciduous
	Mixed		Scrub

Key to Numbers on Mapping

SJ68_Manchester

No.	Description
4	Airfield/Airport

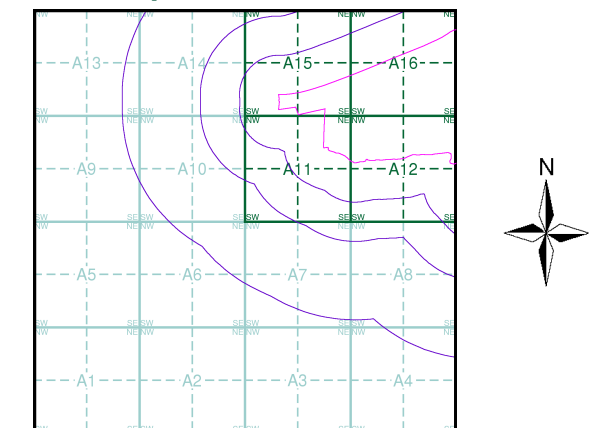
Envirocheck

LANDMARK INFORMATION GROUP

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1849	3
Cheshire	1:10,560	1881 - 1882	4
Cheshire	1:10,560	1899	5
Cheshire	1:10,560	1910 - 1911	6
Cheshire	1:10,560	1910 - 1911	7
Cheshire	1:10,560	1910 - 1911	8
Cheshire	1:10,560	1938	9
Cheshire	1:10,560	1938	10
Ordnance Survey Plan	1:10,000	1954	11
Ordnance Survey Plan	1:10,000	1964 - 1966	12
Ordnance Survey Plan	1:10,000	1967	13
Ordnance Survey Plan	1:10,000	1970 - 1971	14
Manchester	1:25,000	1975	15
Ordnance Survey Plan	1:10,000	1981 - 1987	16
Ordnance Survey Plan	1:10,000	1984	17
Warrington	1:10,000	1984	18
Ordnance Survey Plan	1:10,000	1992 - 1993	19
10K Raster Mapping	1:10,000	1999	20
10K Raster Mapping	1:10,000	2006	21
VectorMap Local	1:10,000	2017	22

Russian Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

Landmark
 INFORMATION GROUP

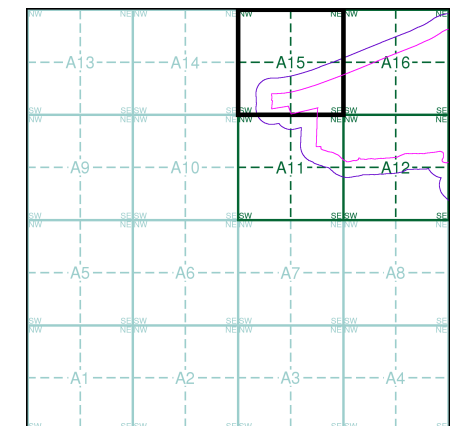
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09
1874
1:2,500
017_13
1877
1:2,500

Historical Map - Segment A15

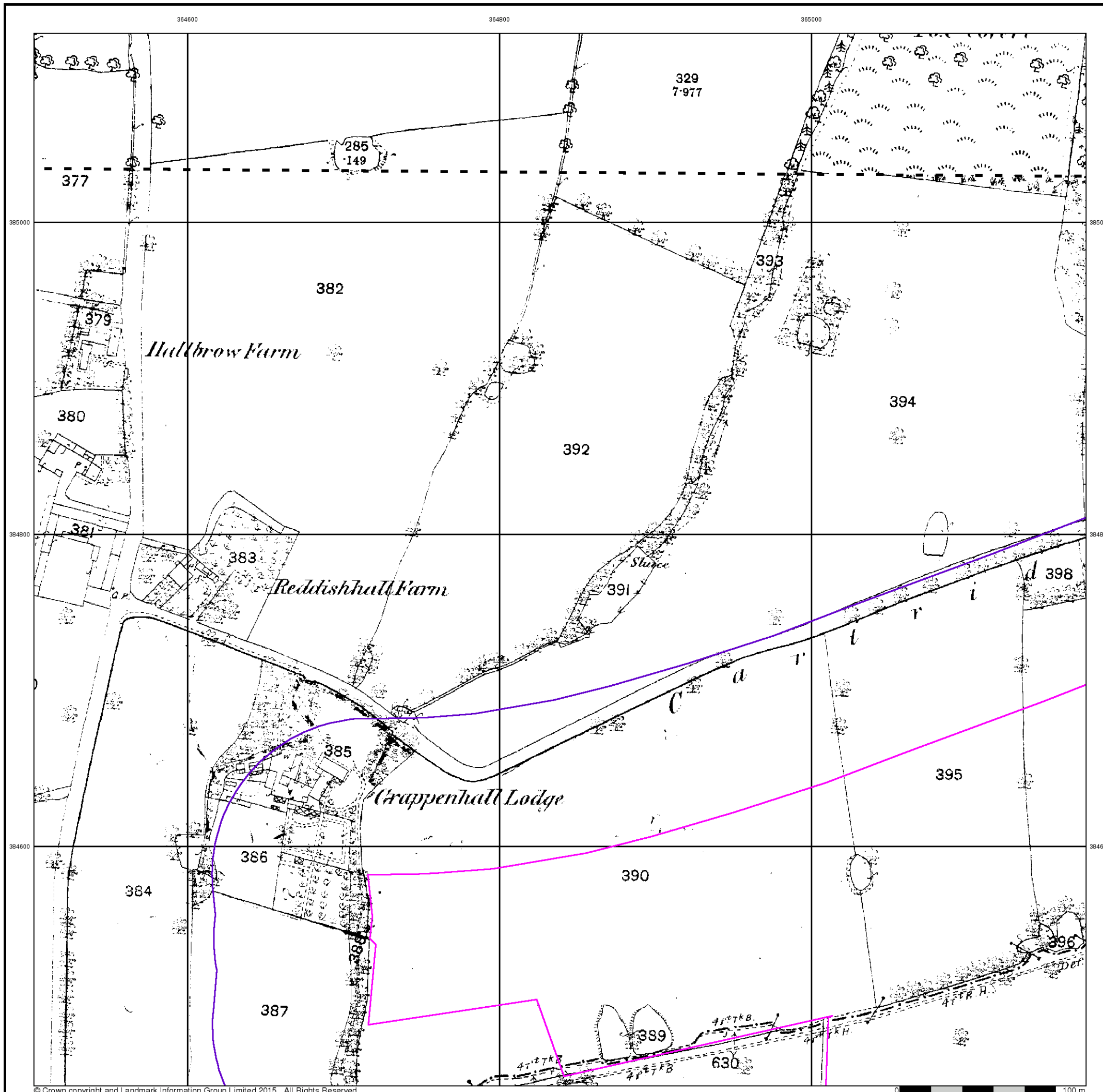


Order Details

Order Number: 135773225_1_1
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 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

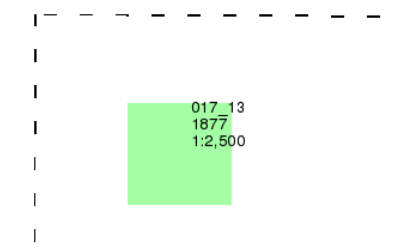
Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

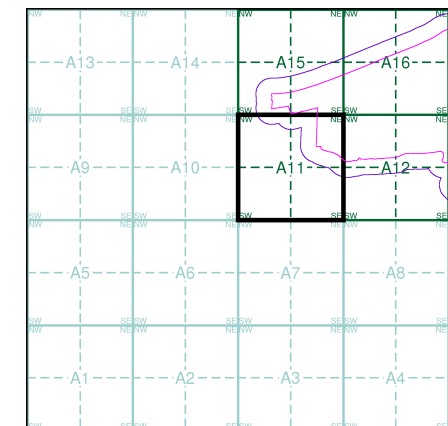


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11

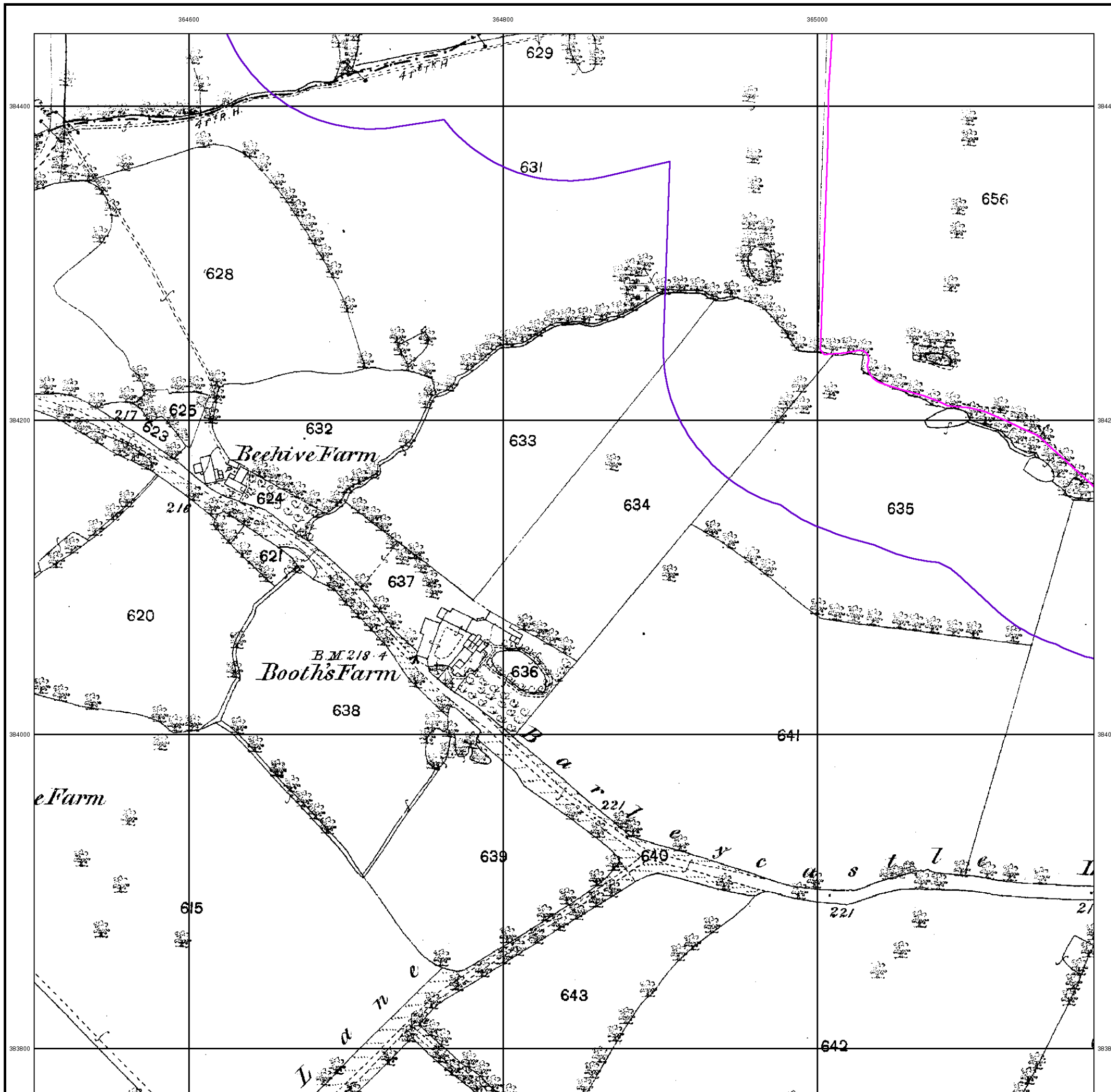


Order Details

Order Number: 135773225_1_1
Customer Ref: 1015524 - Warrington Interchange MP
National Grid Reference: 364910, 384200
Slice: A
Site Area (Ha): 93.66
Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

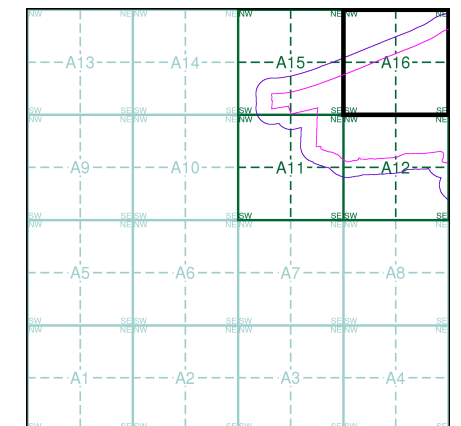


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09
1874
1:2,500
017_13
1877
1:2,500

Historical Map - Segment A16

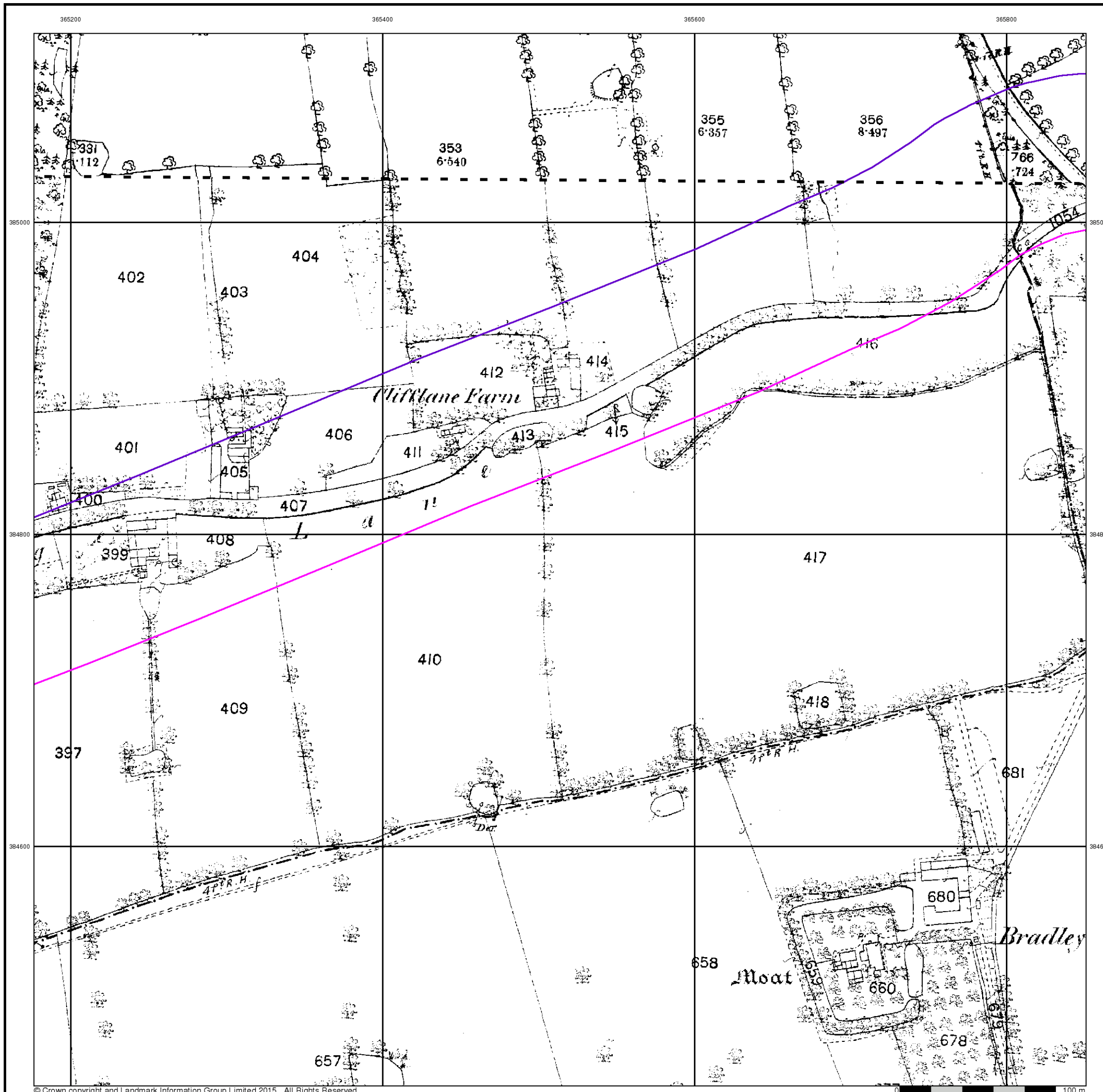


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Cheshire

Published 1874 - 1877

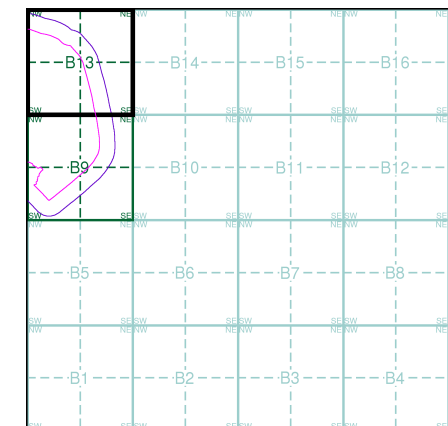
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09 1874 1:2,500	017_10 1876 1:2,500
017_13 1877 1:2,500	017_14 1876 1:2,500

Historical Map - Segment B13

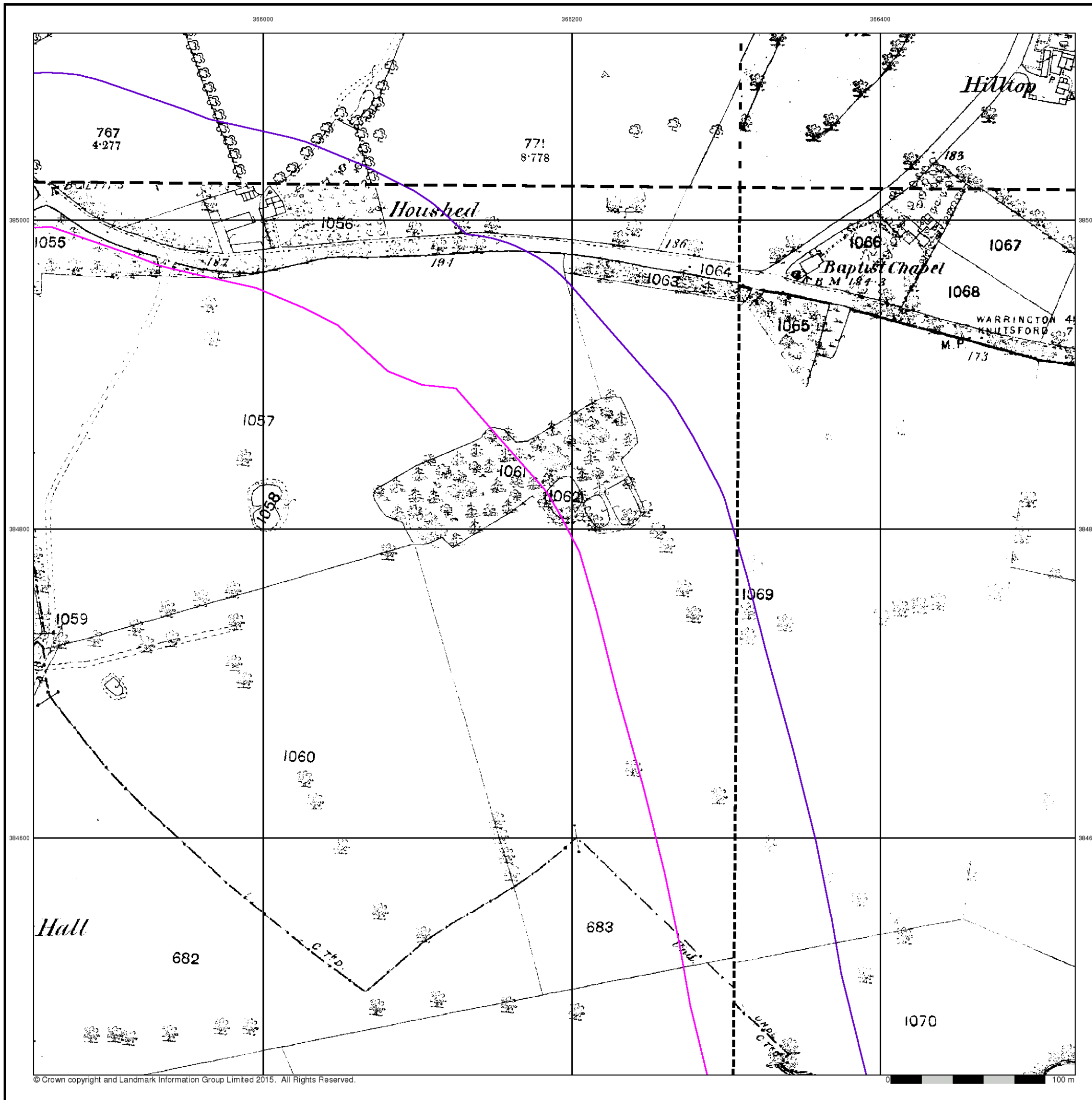


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



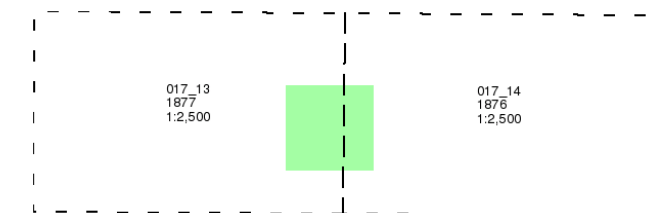
Cheshire

Published 1876 - 1877

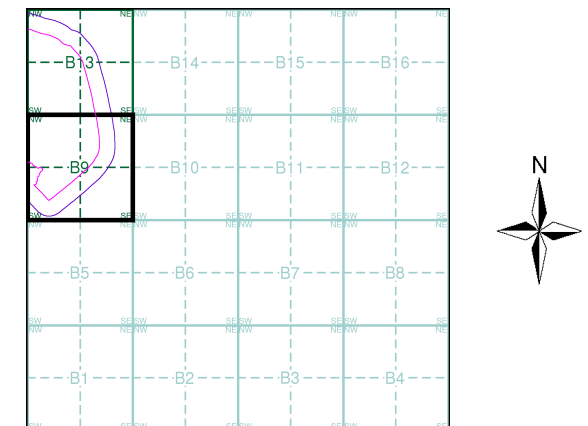
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment B9

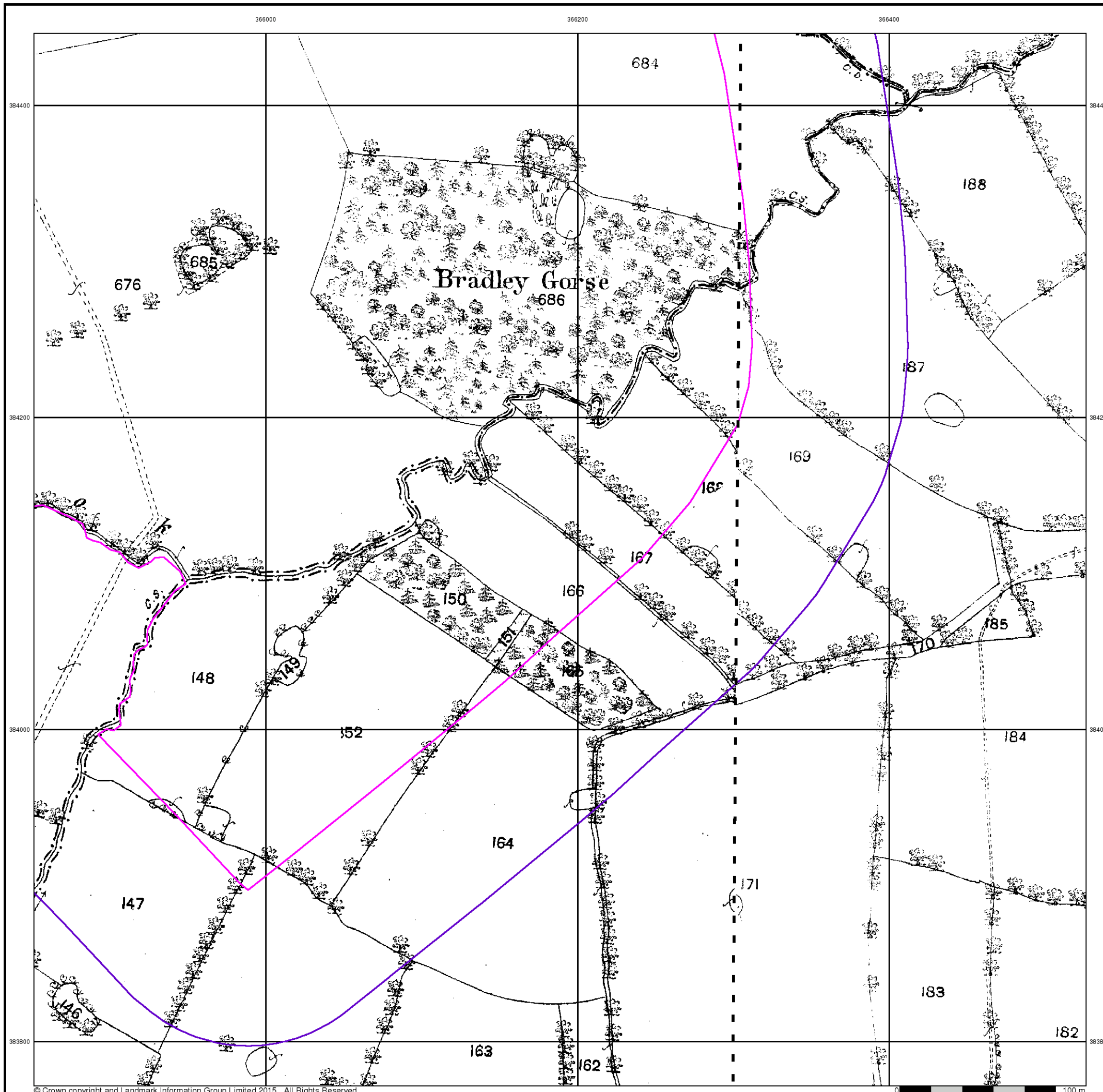


Order Details

Order Number: 135773225_1_1
Customer Ref: 1015524 - Warrington Interchange MP
National Grid Reference: 366500, 384120
Slice: B
Site Area (Ha): 93.66
Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

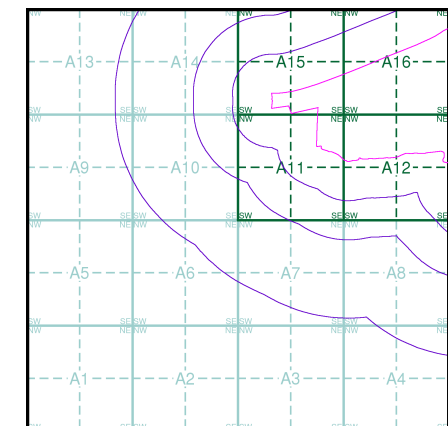


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01600 1882 1:10,560	01700 1882 1:10,560
02500 1881 1:10,560	02600 1881 1:10,560

Historical Map - Slice A

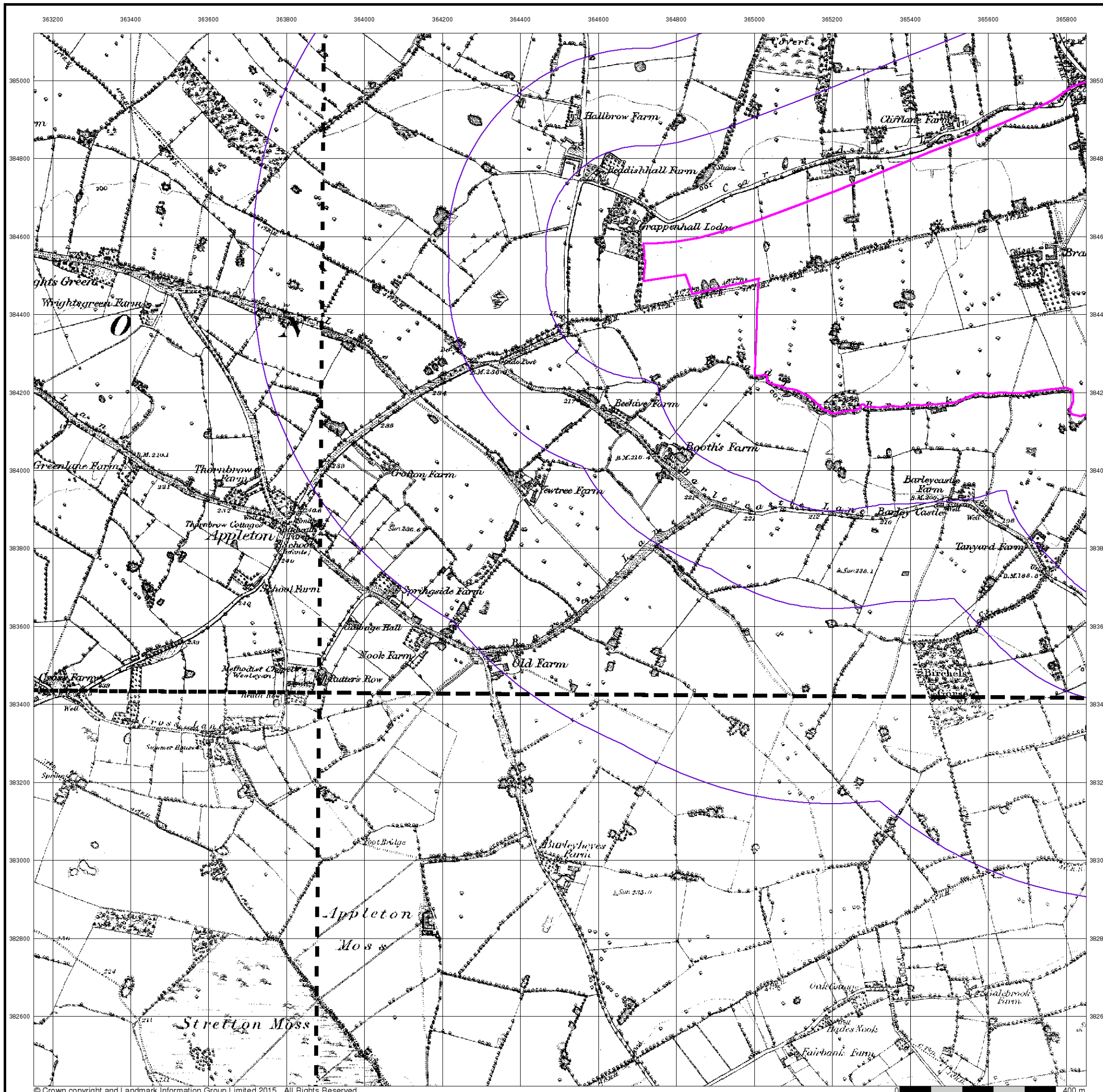


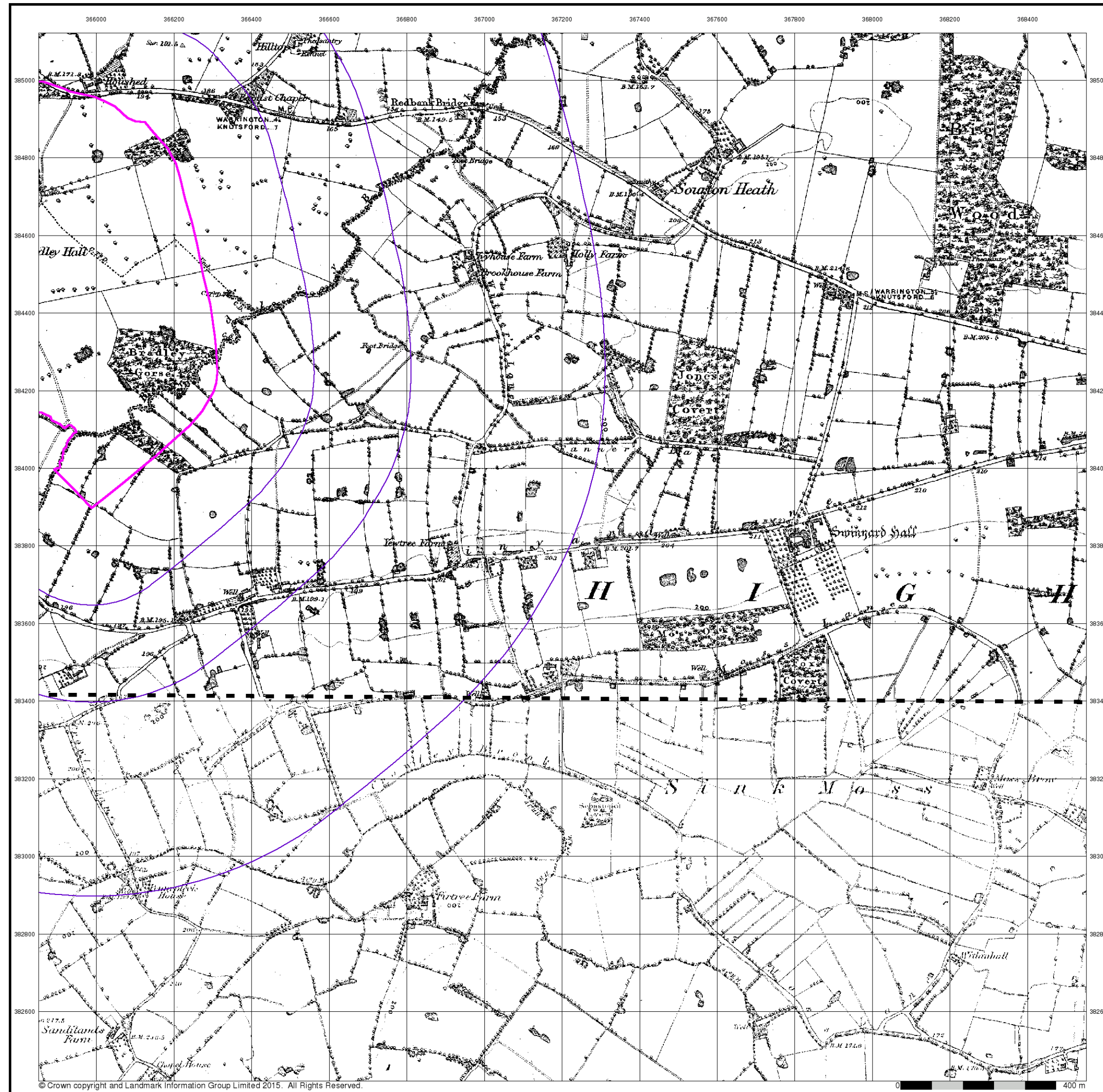
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



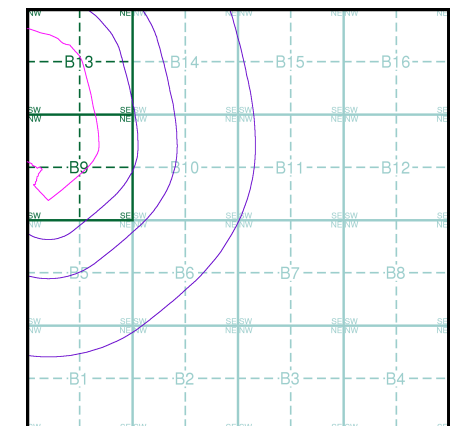


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

01700	1882	1:10,560
02600	1881	1:10,560

Historical Map - Slice B



Order Details

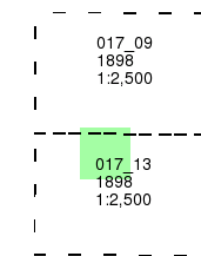
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

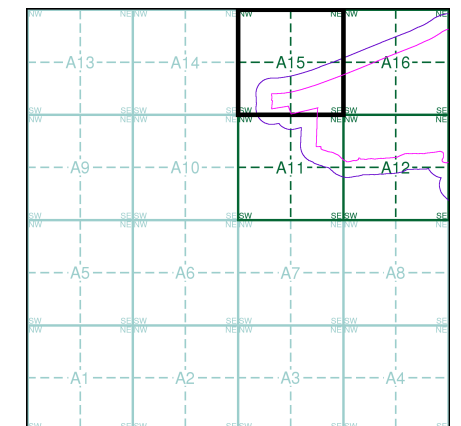
Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A15

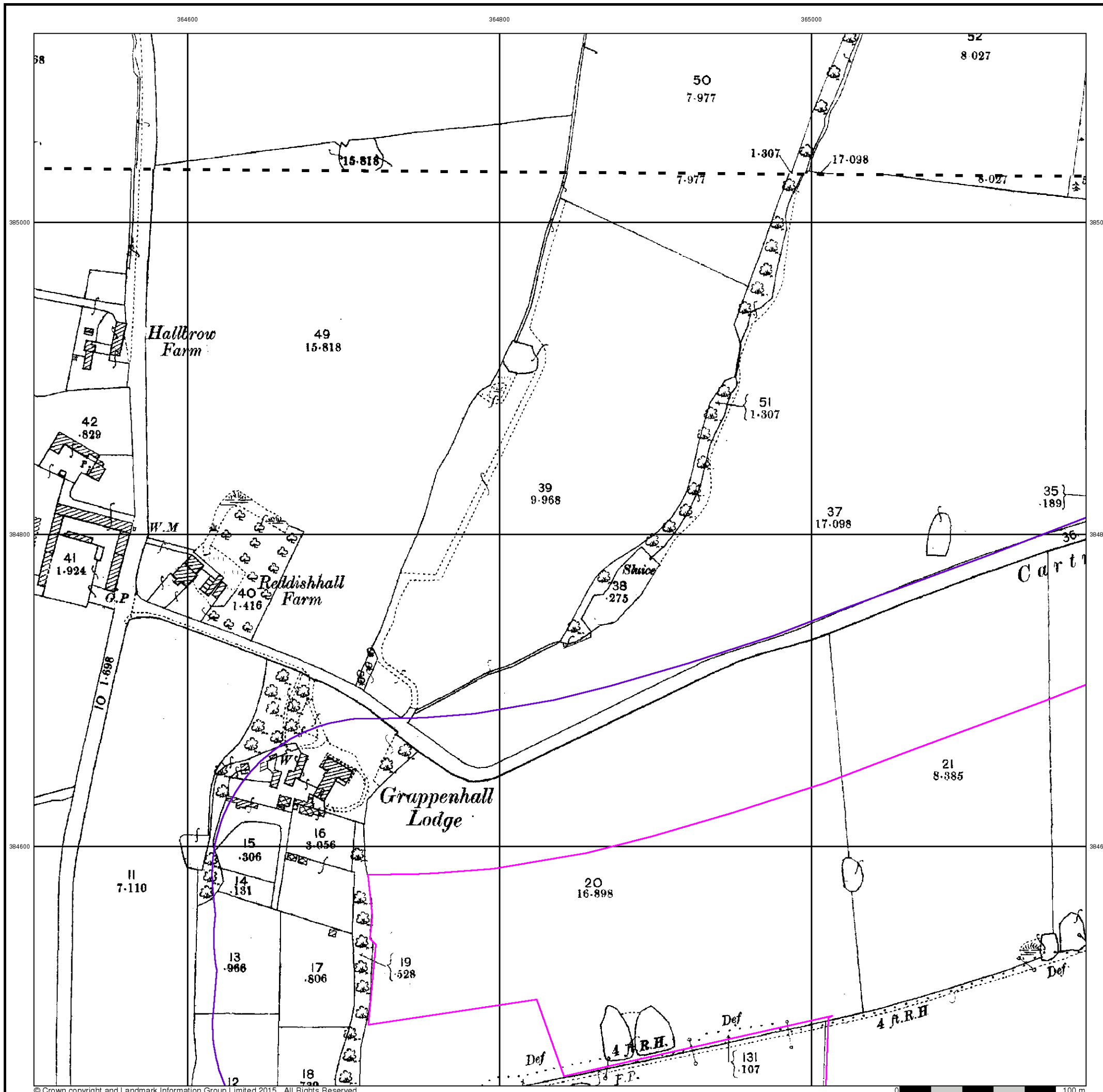


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

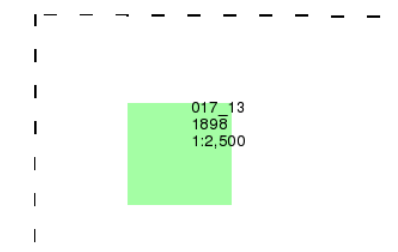
Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

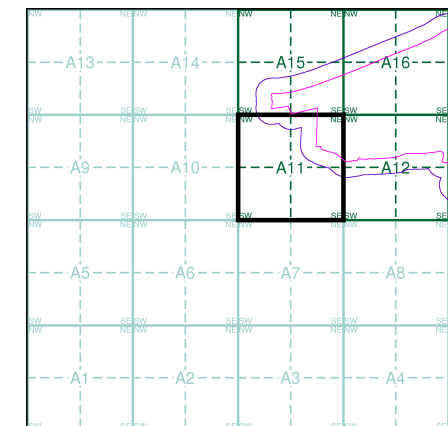


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11

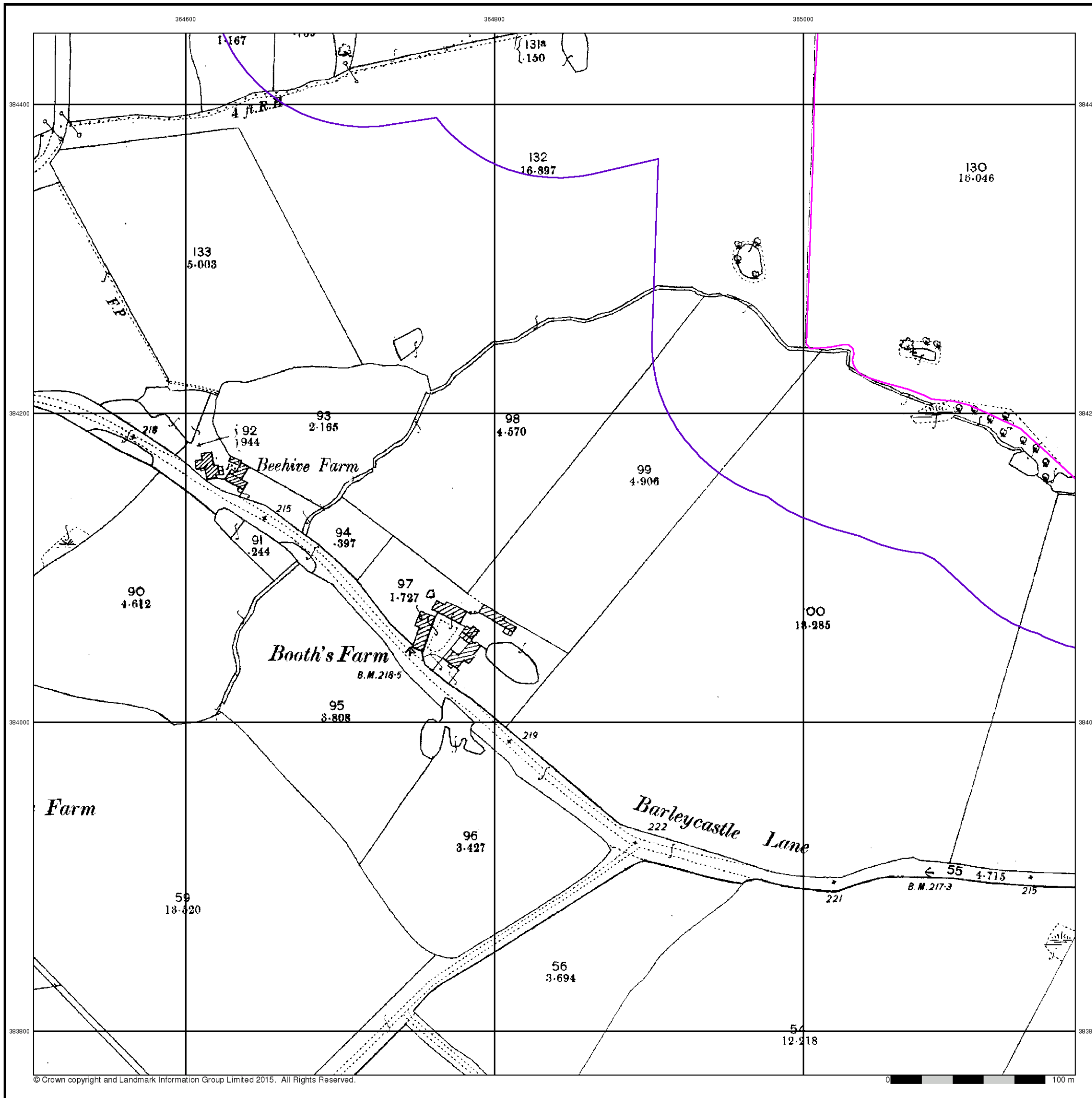


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

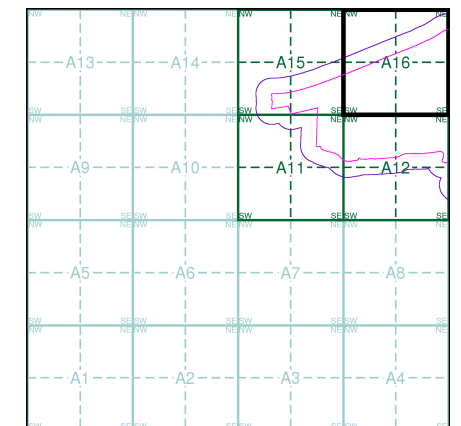


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09
1898
1:2,500
017_13
1898
1:2,500

Historical Map - Segment A16

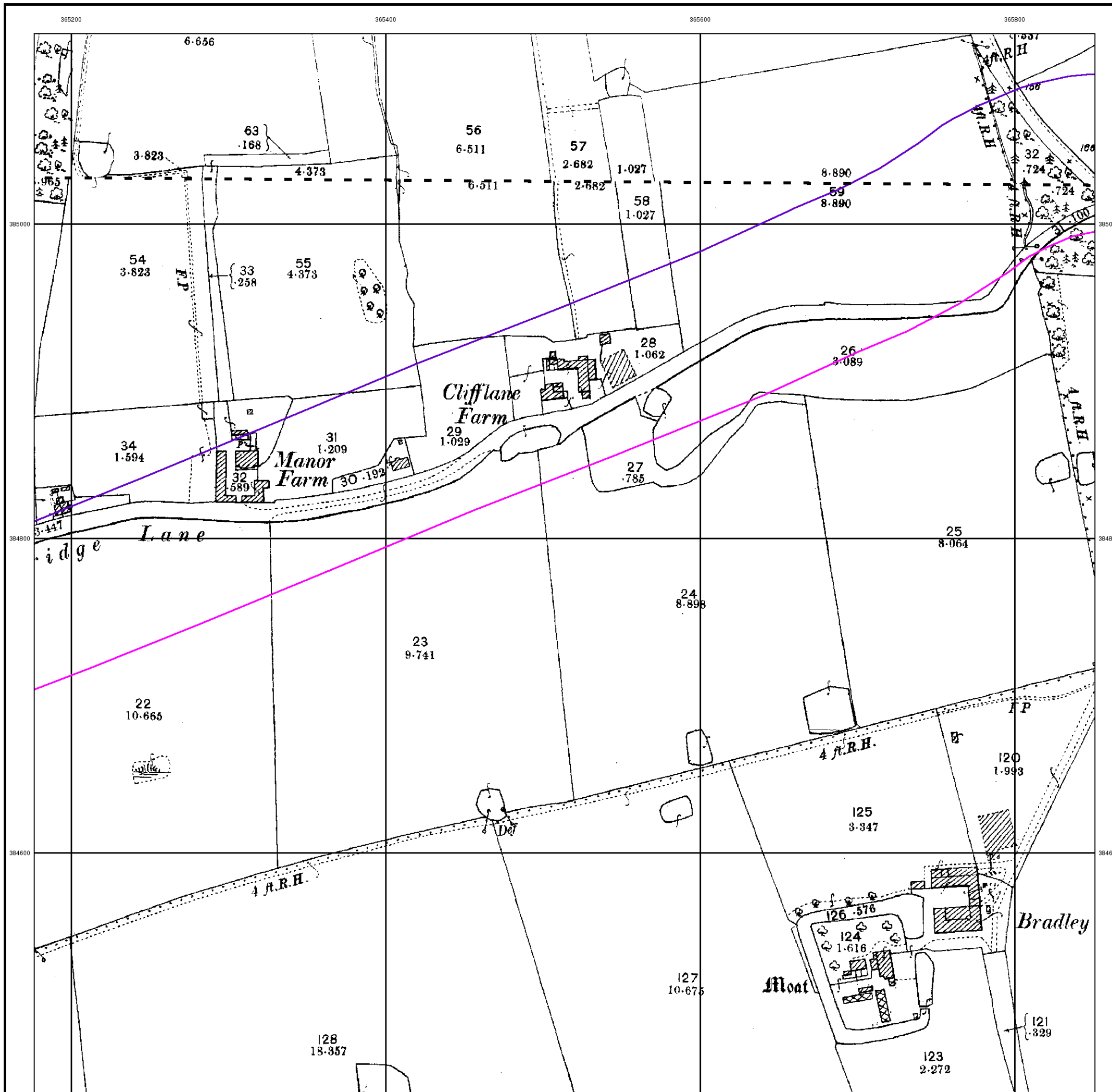


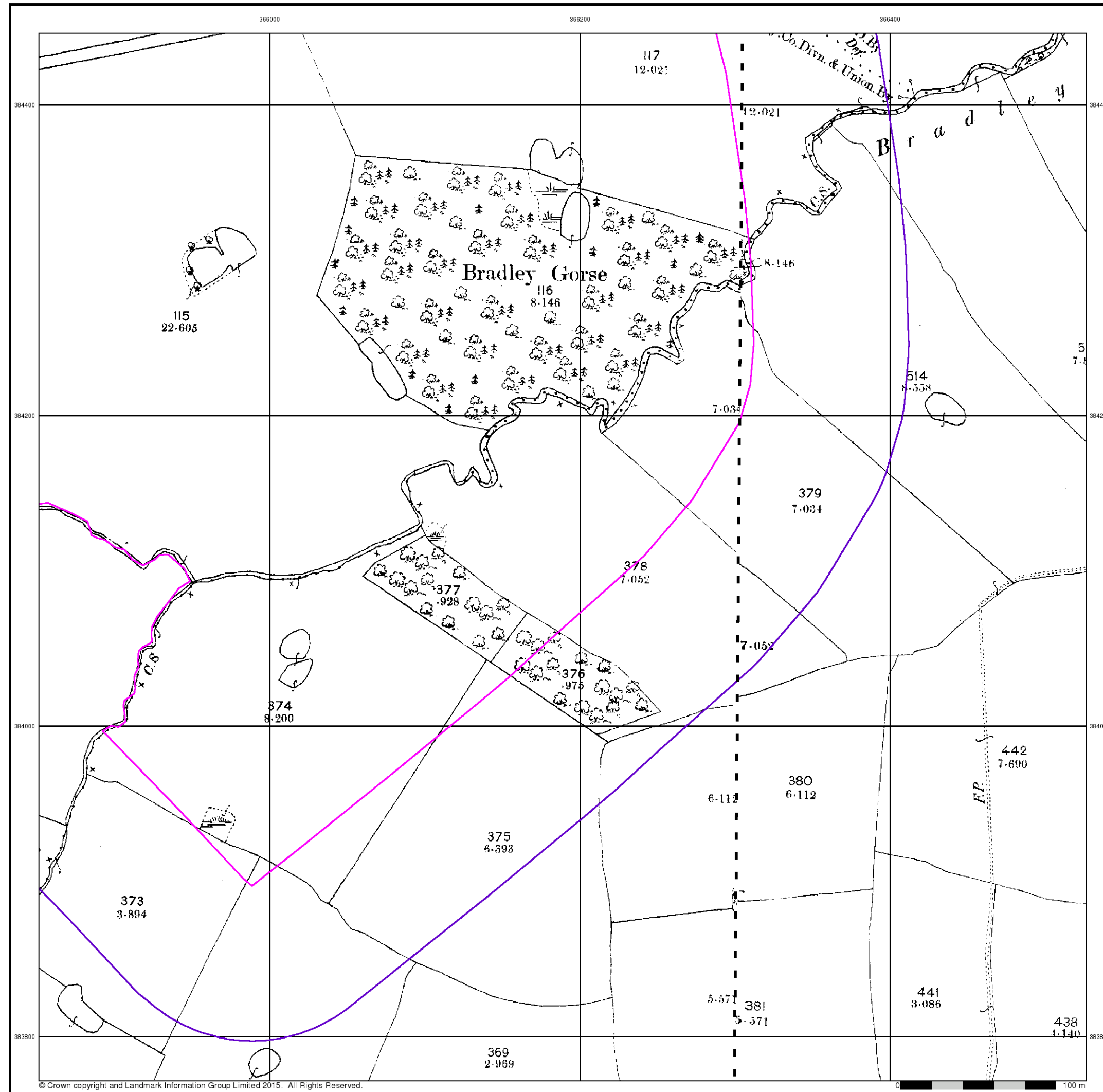
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

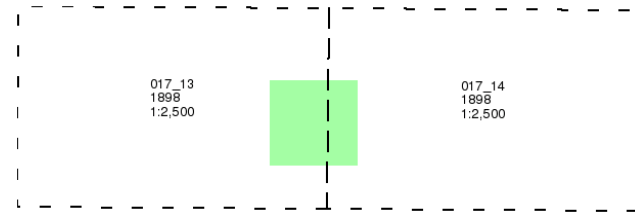




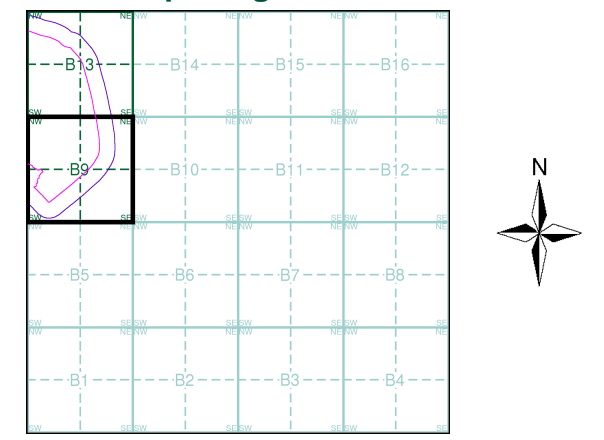
Cheshire
Published 1898
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment B9



Order Details
 Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details
 Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

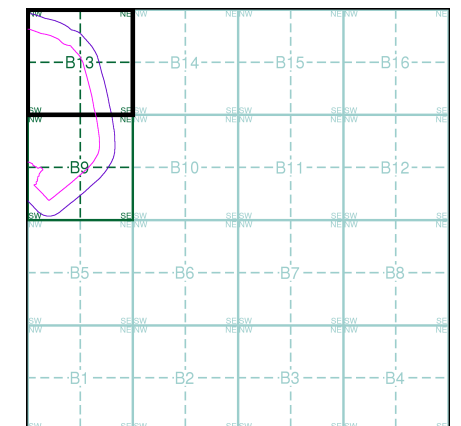
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09 1898 1:2,500	017_10 1898 1:2,500
017_13 1898 1:2,500	017_14 1898 1:2,500

Historical Map - Segment B13

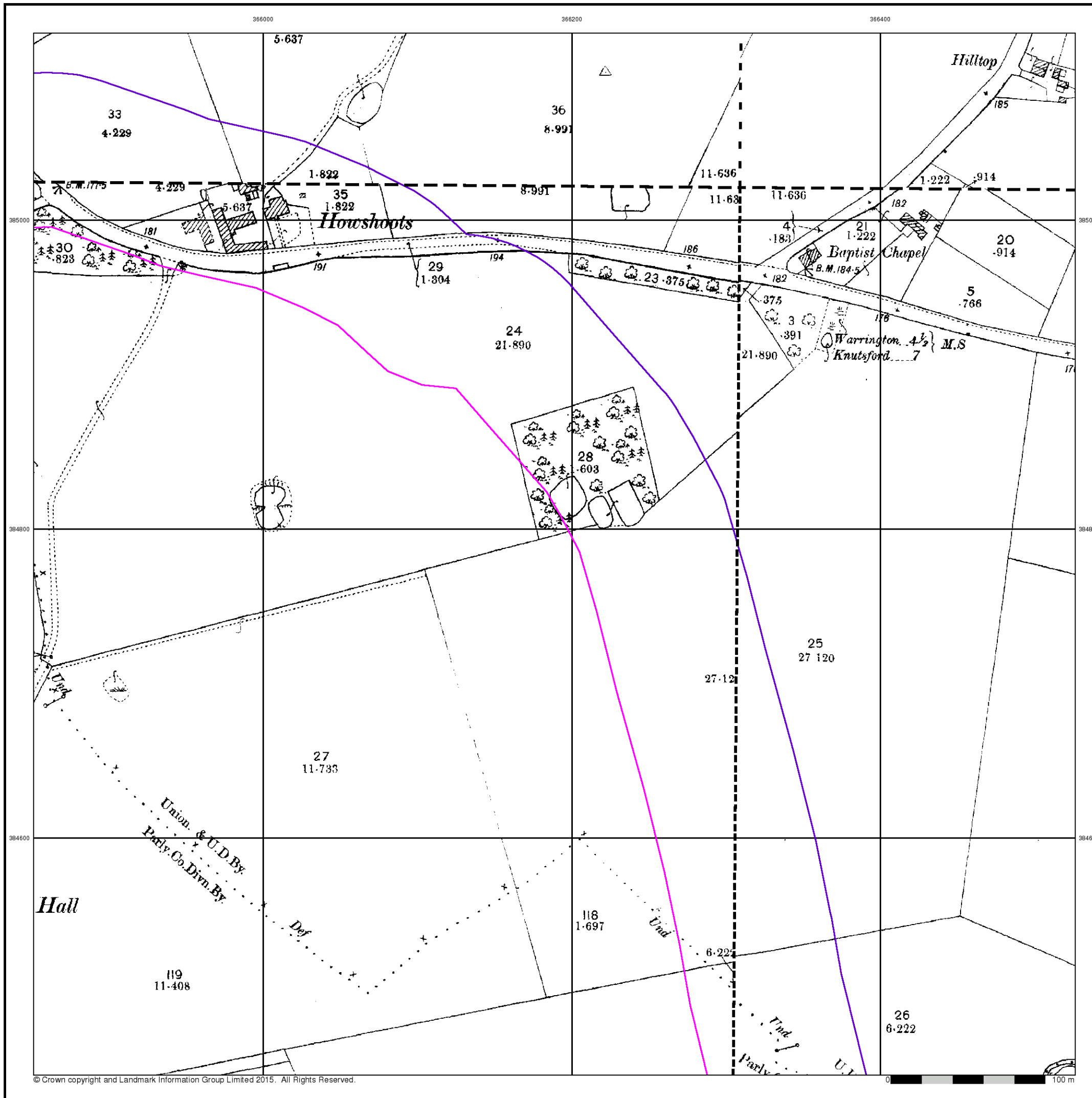


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
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 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

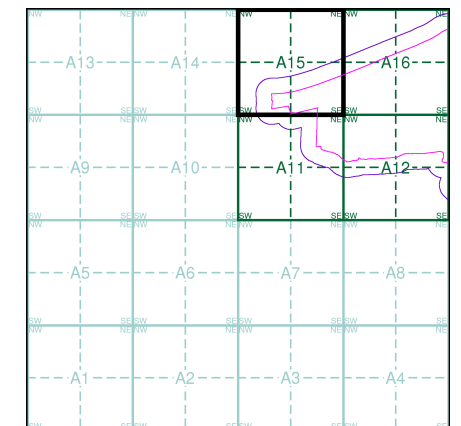


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09
1910
1:2,500
017_13
1910
1:2,500

Historical Map - Segment A15

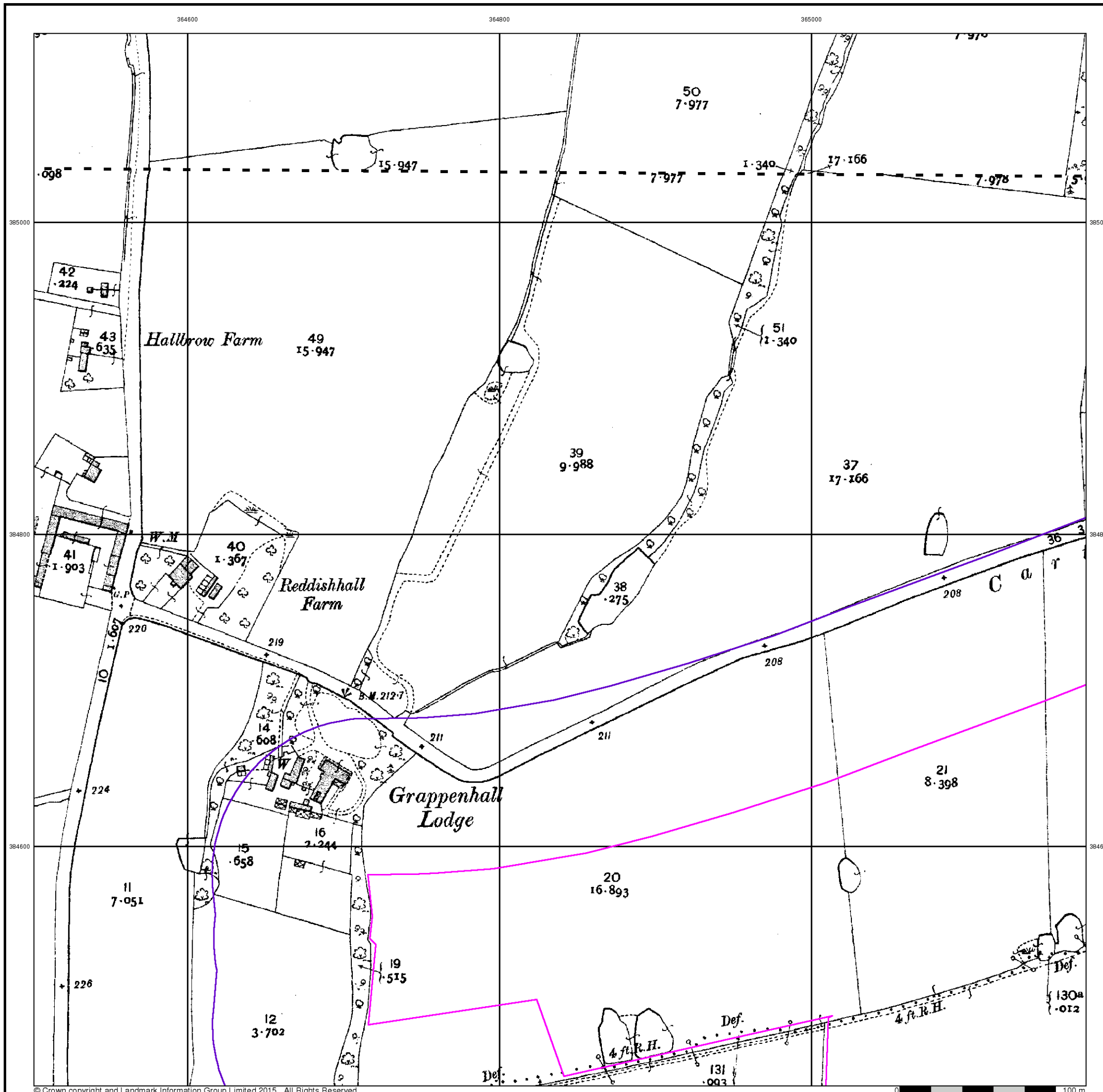


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

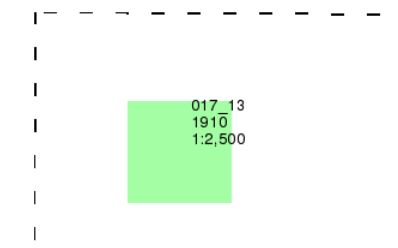
Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

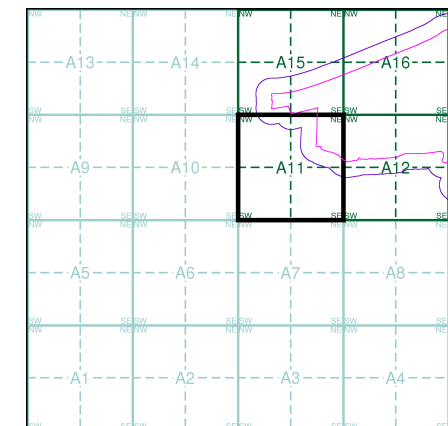


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11

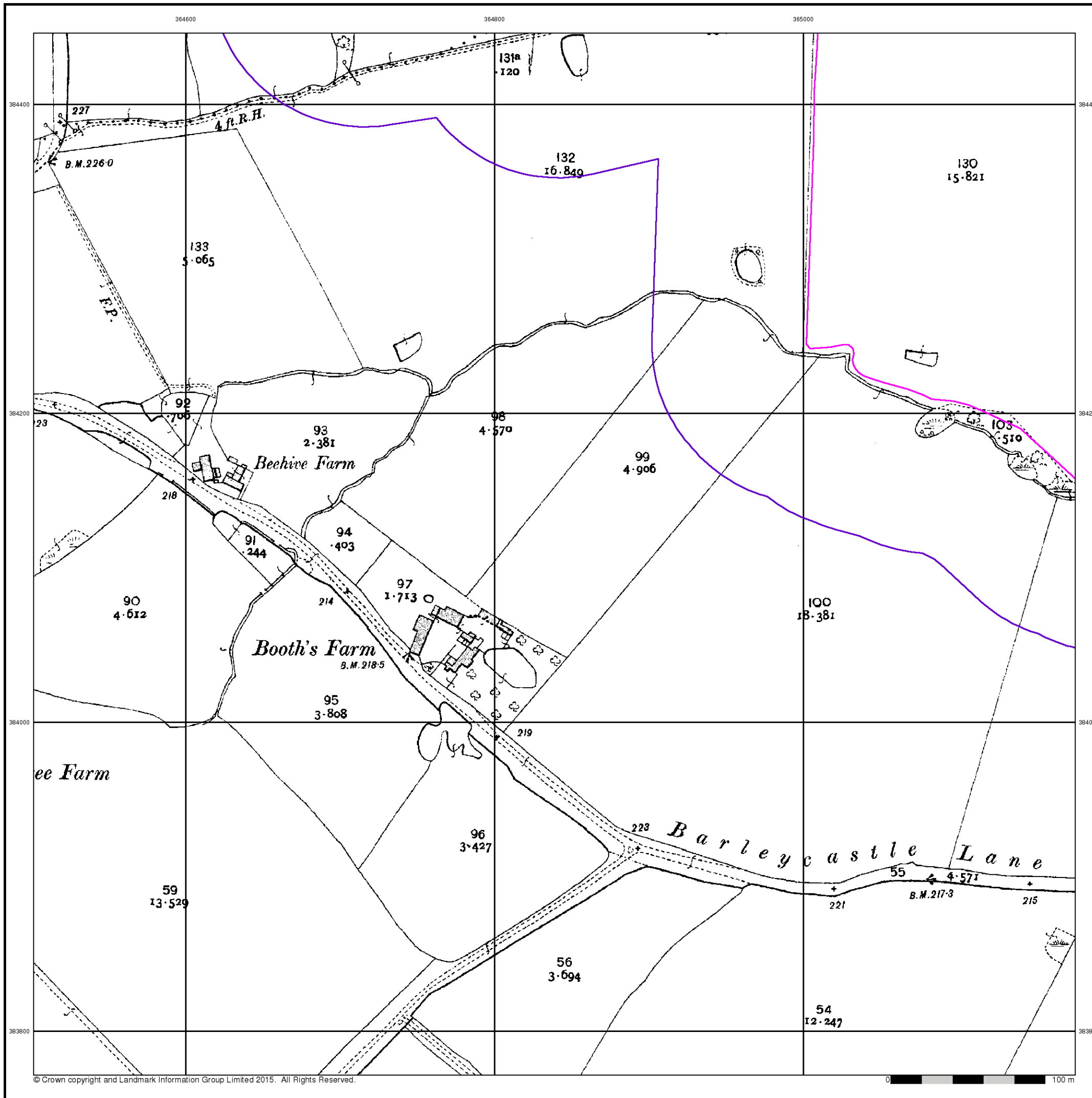


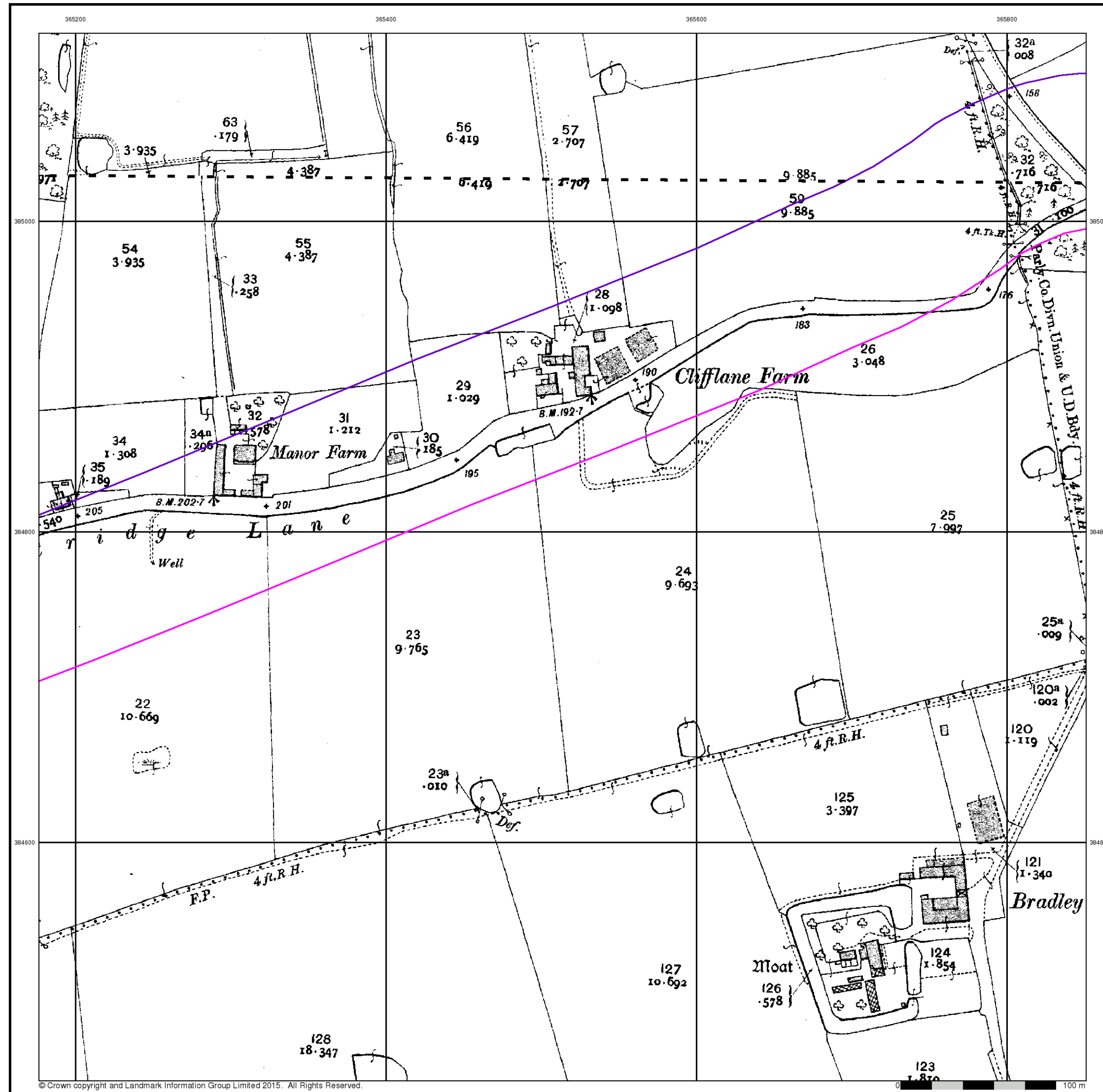
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR





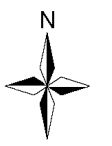
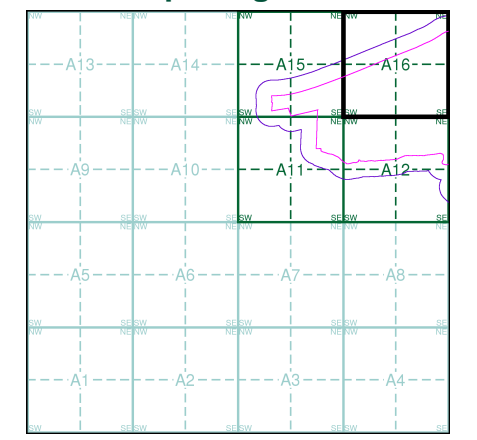
Cheshire
Published 1910
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09	1910	1:2,500
017_13	1910	1:2,500

Historical Map - Segment A16



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
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 Search Buffer (m): 100

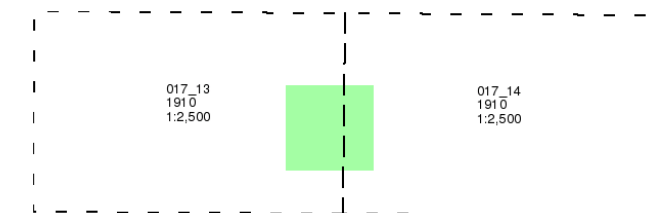
Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

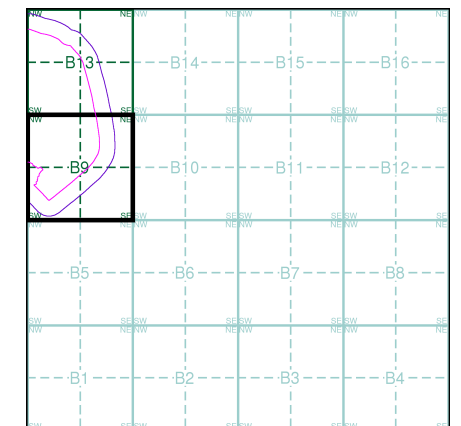
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment B9

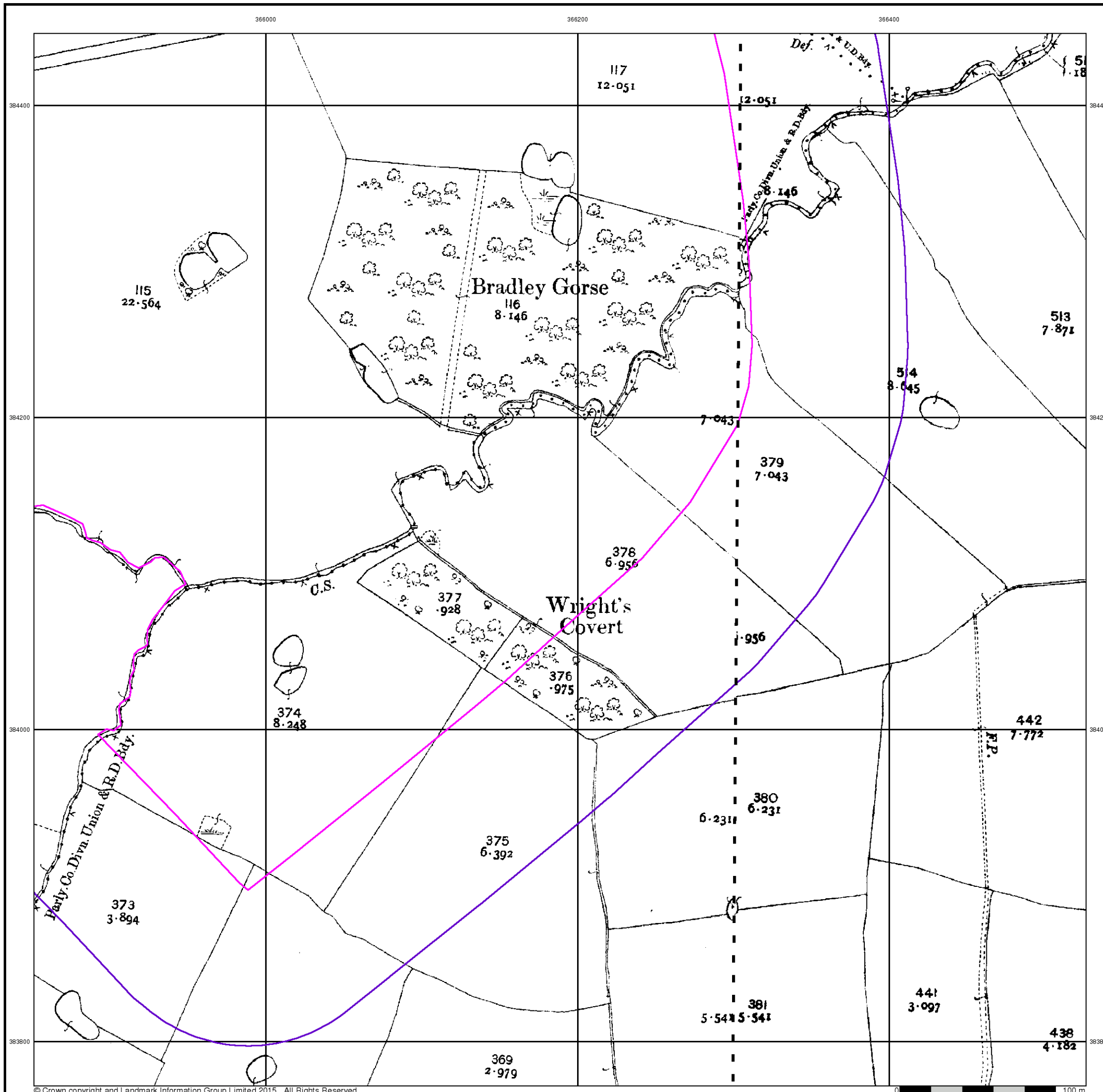


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

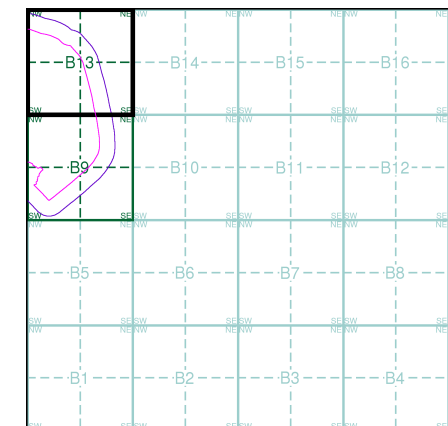


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

017_09 1910 1:2,500	017_10 1910 1:2,500
017_13 1910 1:2,500	017_14 1910 1:2,500

Historical Map - Segment B13

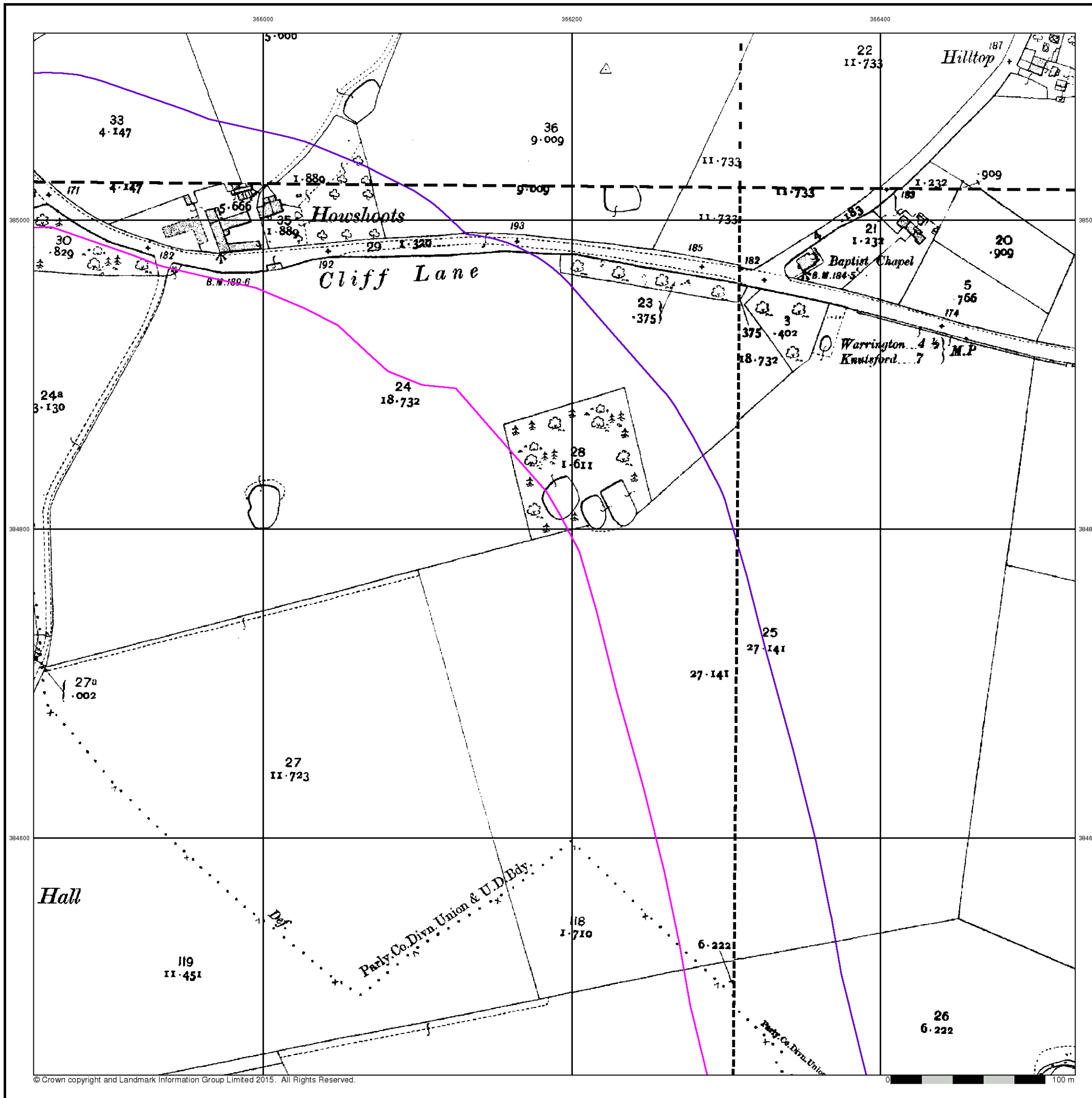


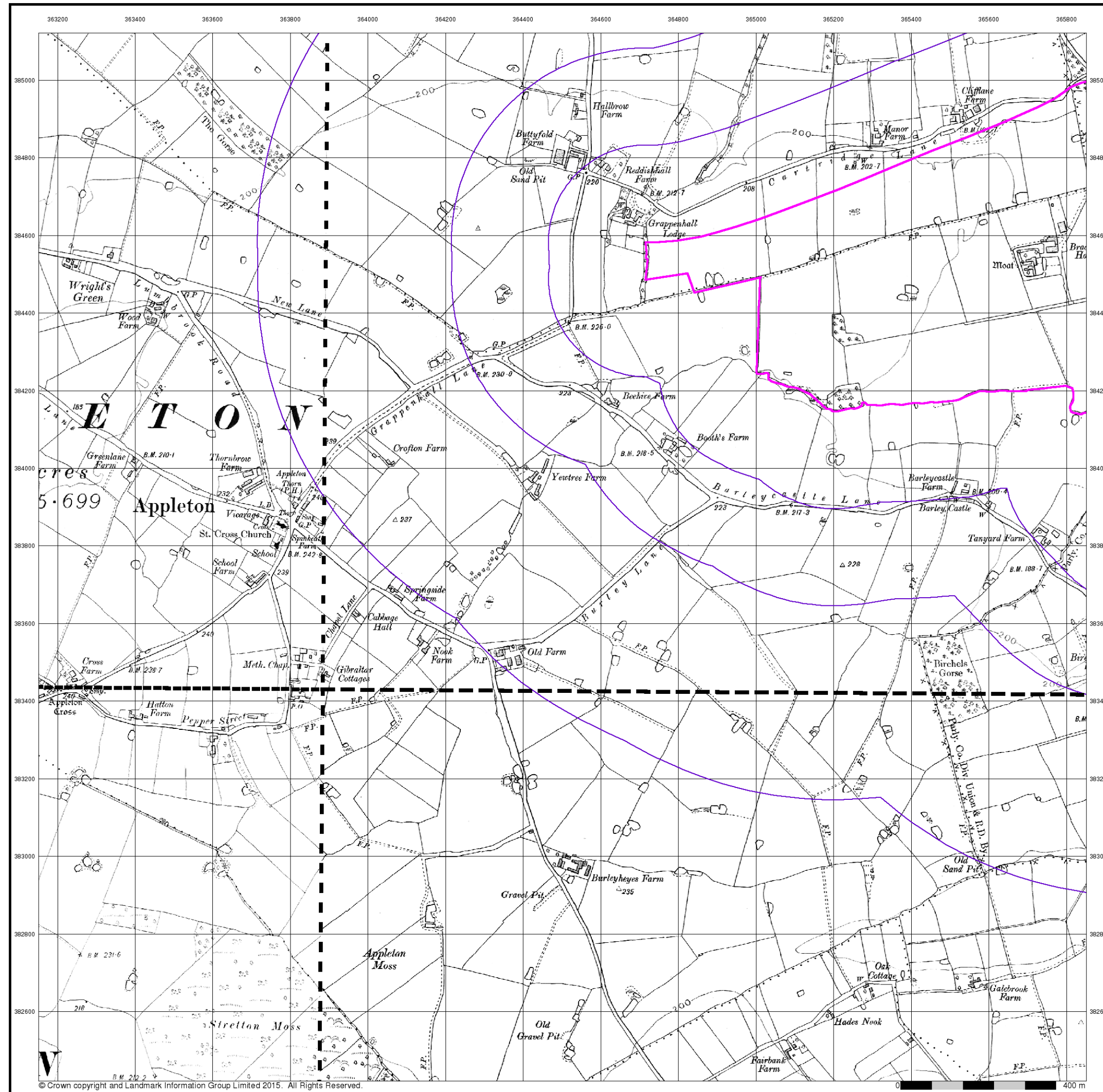
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Cheshire

Published 1910 - 1911

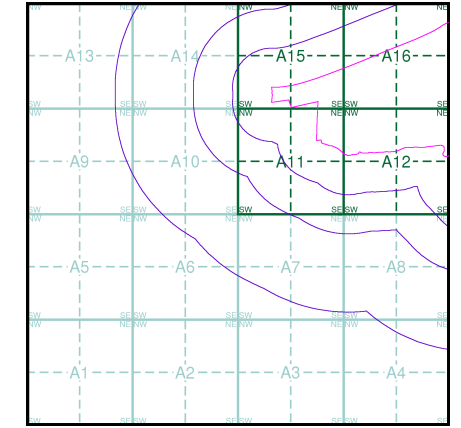
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

016SE 1911 1:10,560	017SW 1910 1:10,560
025NE 1911 1:10,560	026NW 1910 1:10,560

Historical Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

Landmark
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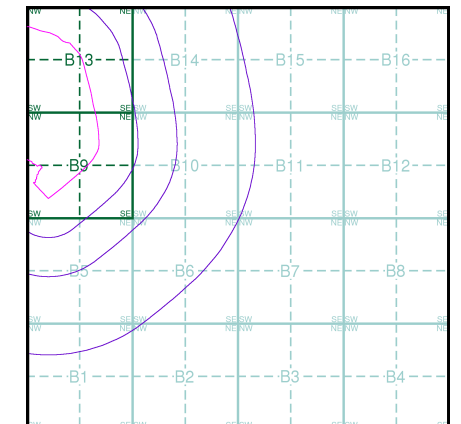
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

017SW	1910	1:10,560
026NW	1910	1:10,560

Historical Map - Slice B

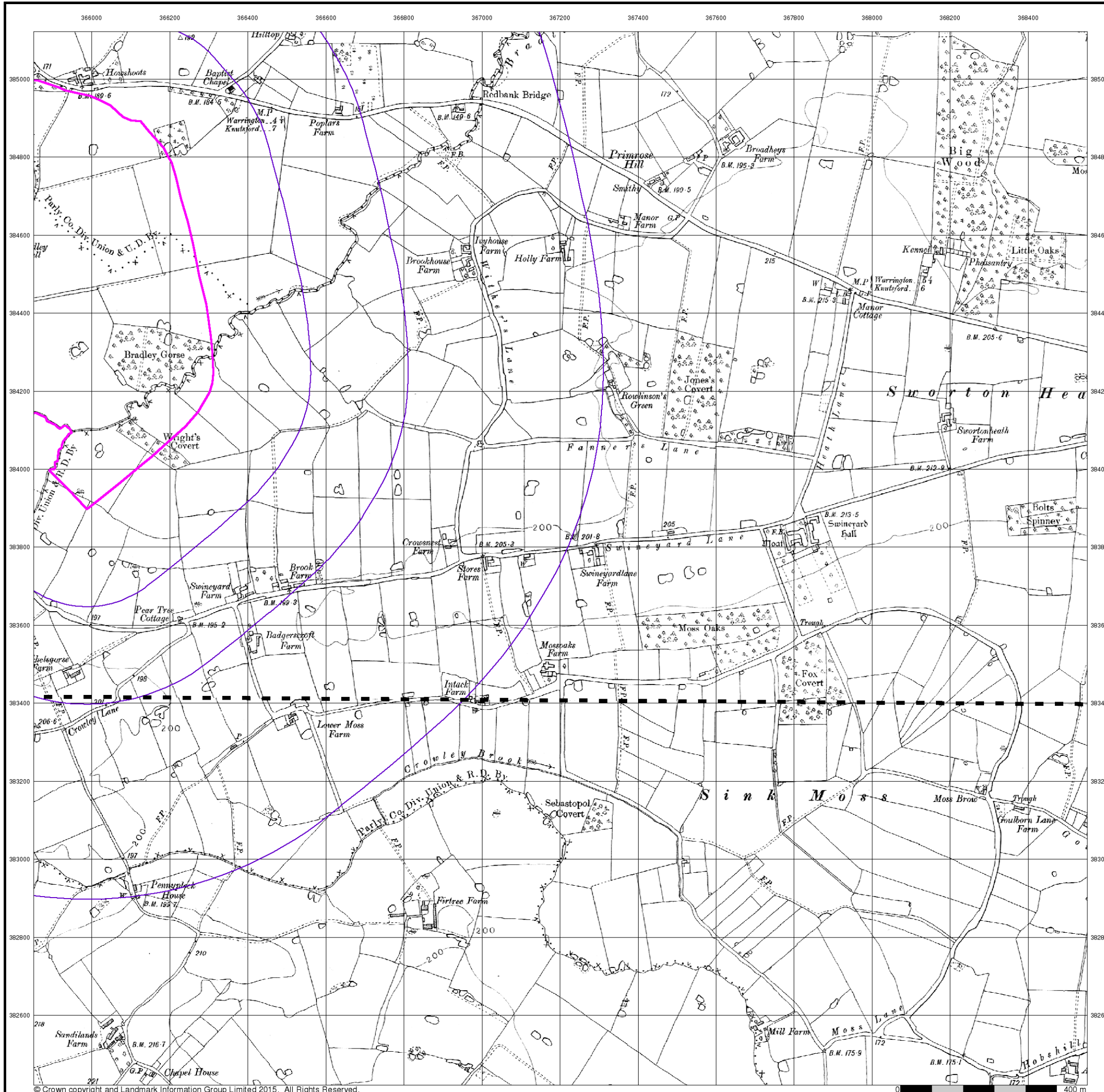


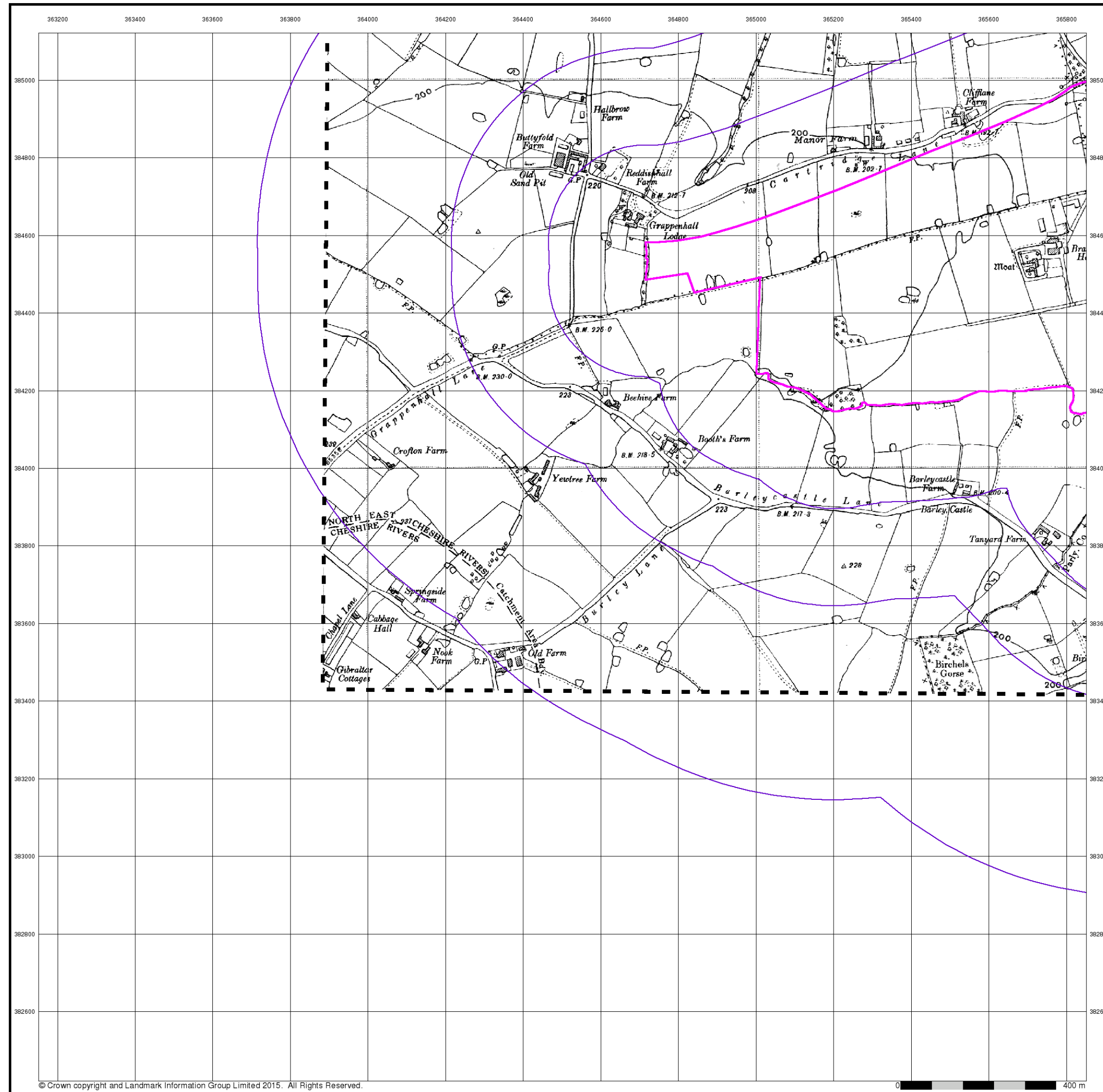
Order Details

Order Number: 135773225_1_1
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 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

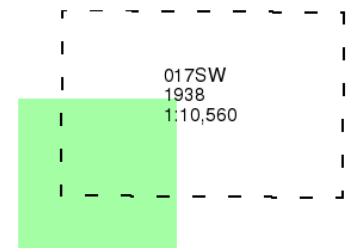
Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



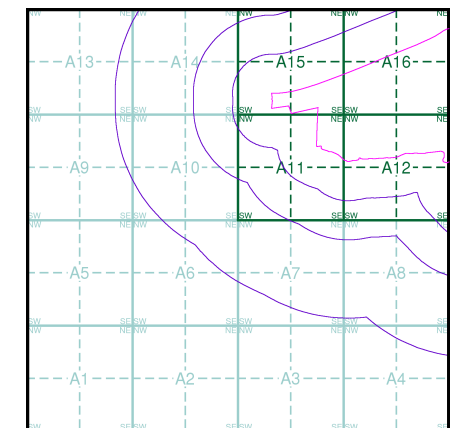


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

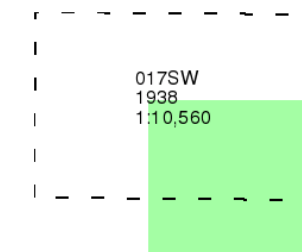
Cheshire

Published 1938

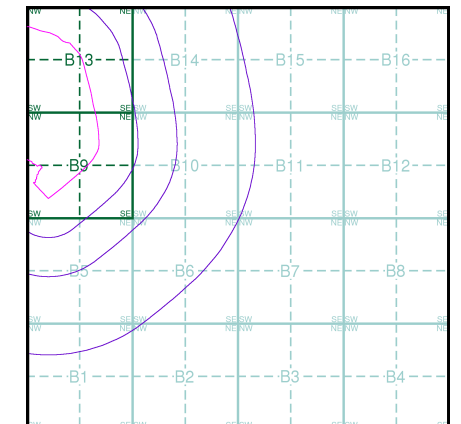
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice B

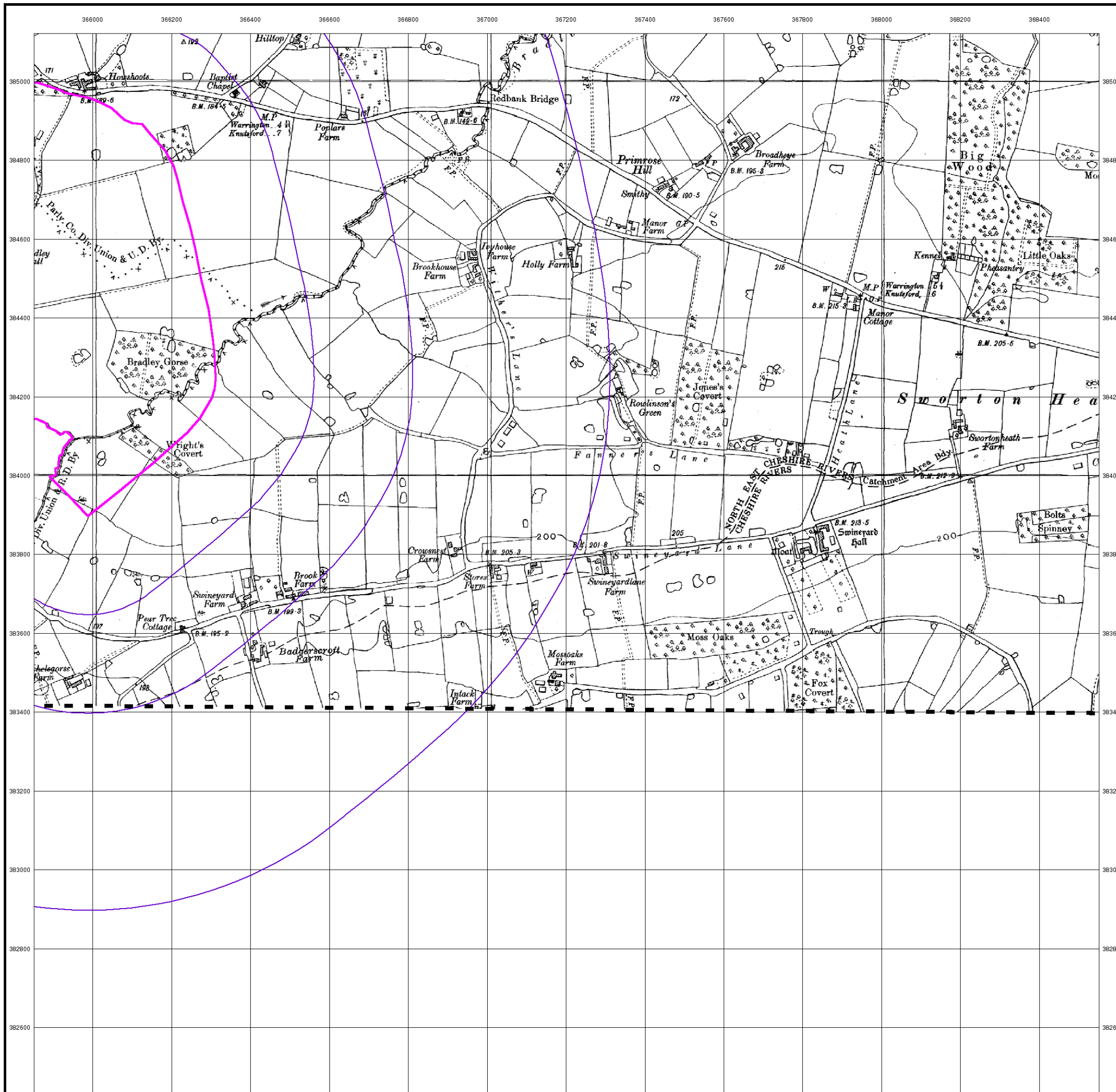


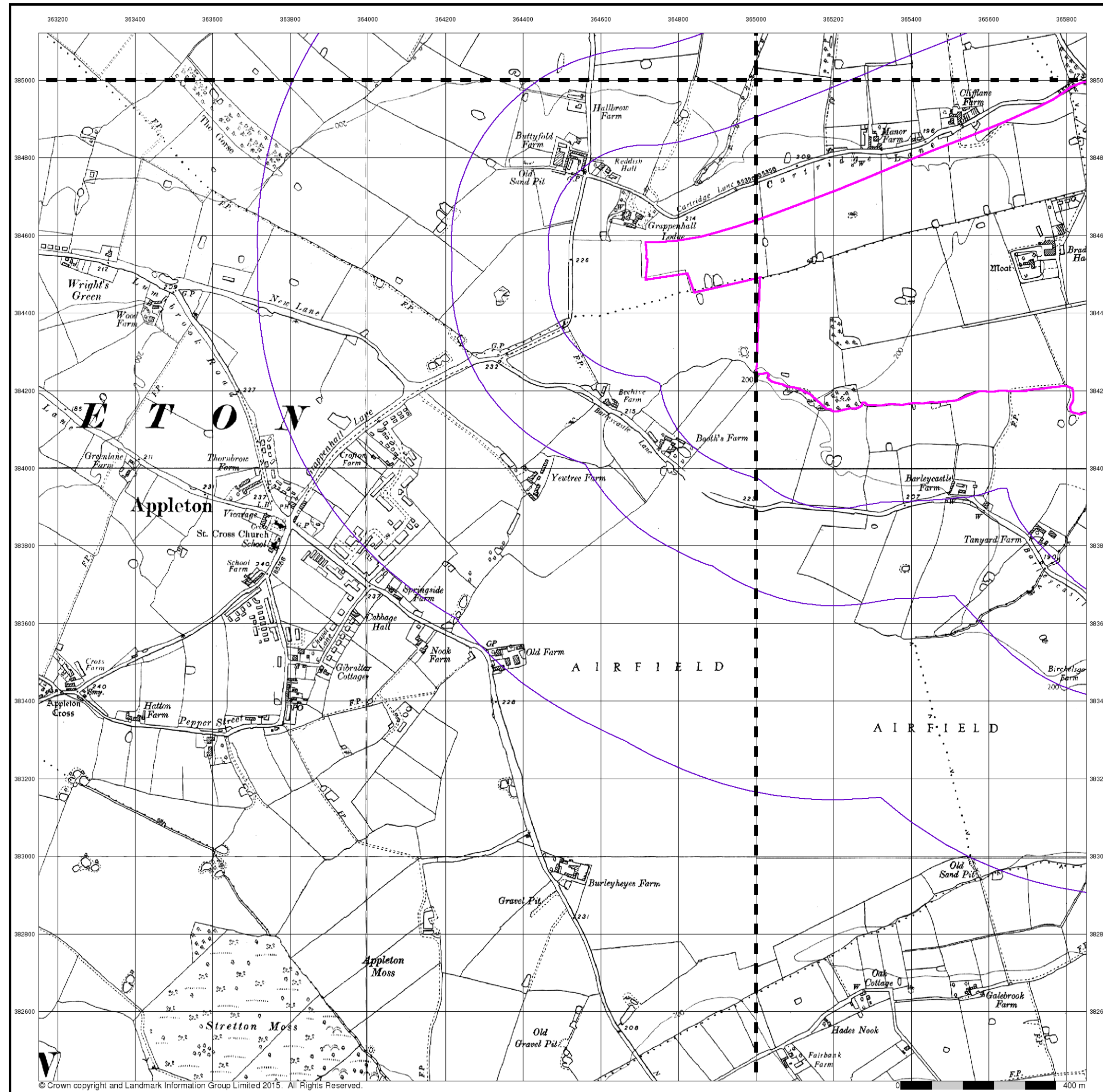
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1954

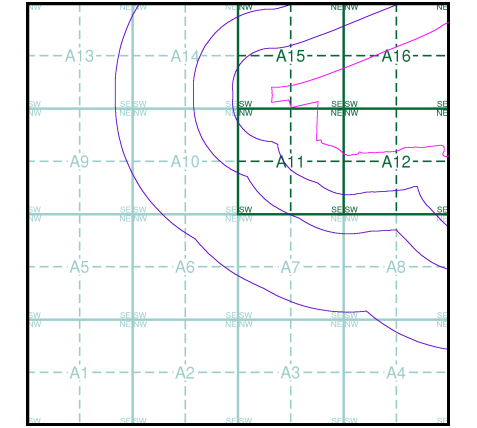
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ68NW	SJ68NE
1954	1954
1:10,560	1:10,560
SJ68SW	SJ68SE
1954	1954
1:10,560	1:10,560

Historical Map - Slice A



Order Details

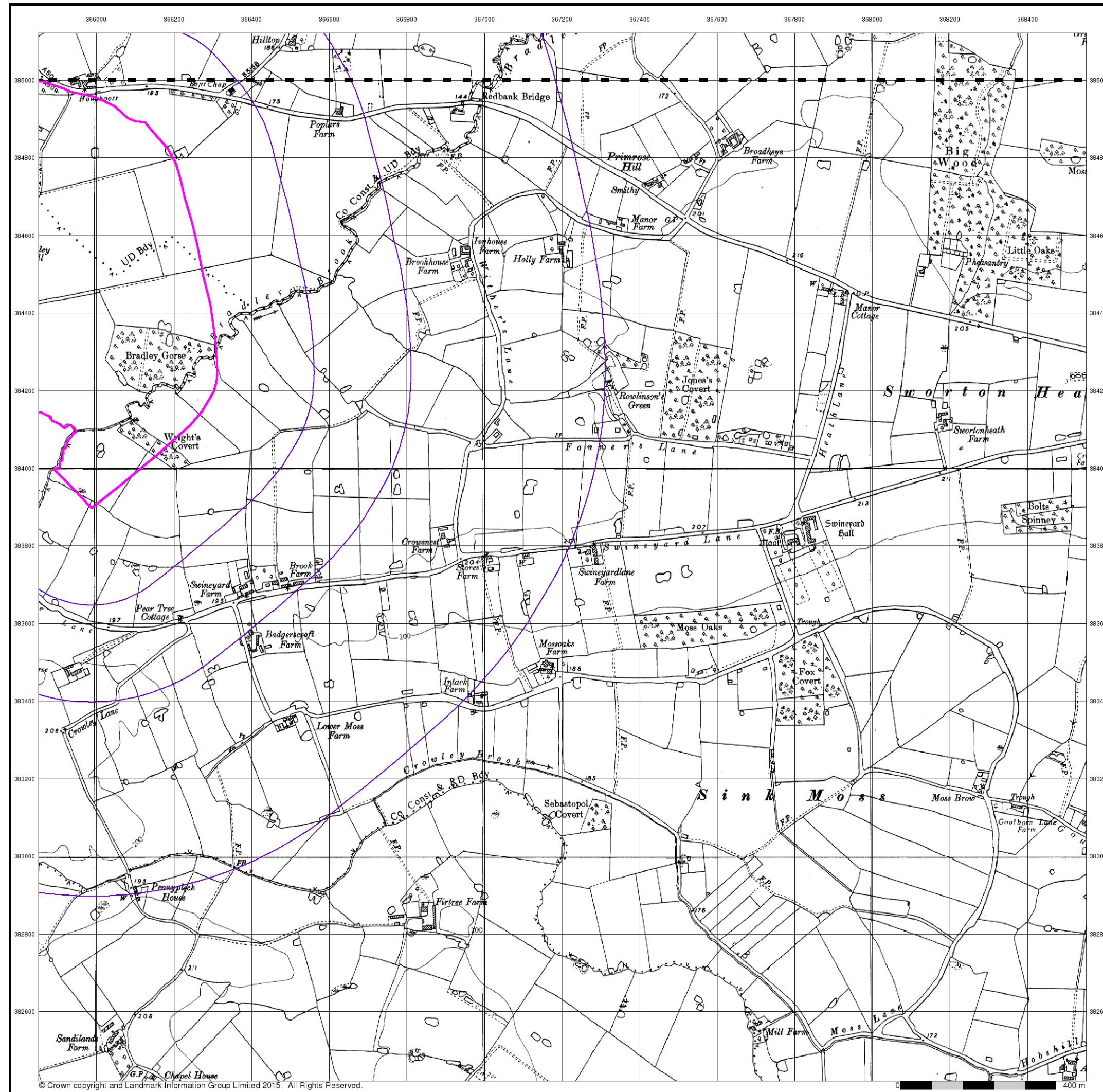
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1954

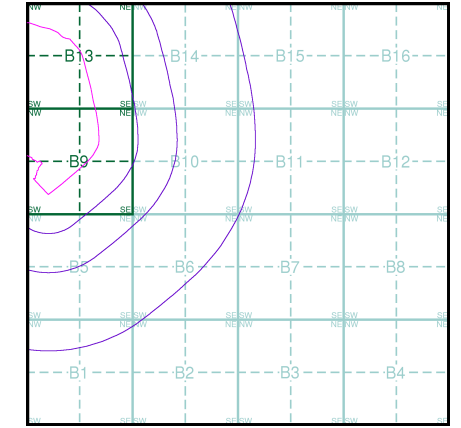
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

---	SJ68NE	1954	1:10,560
■	SJ68SE	1954	1:10,560

Historical Map - Slice B



Order Details

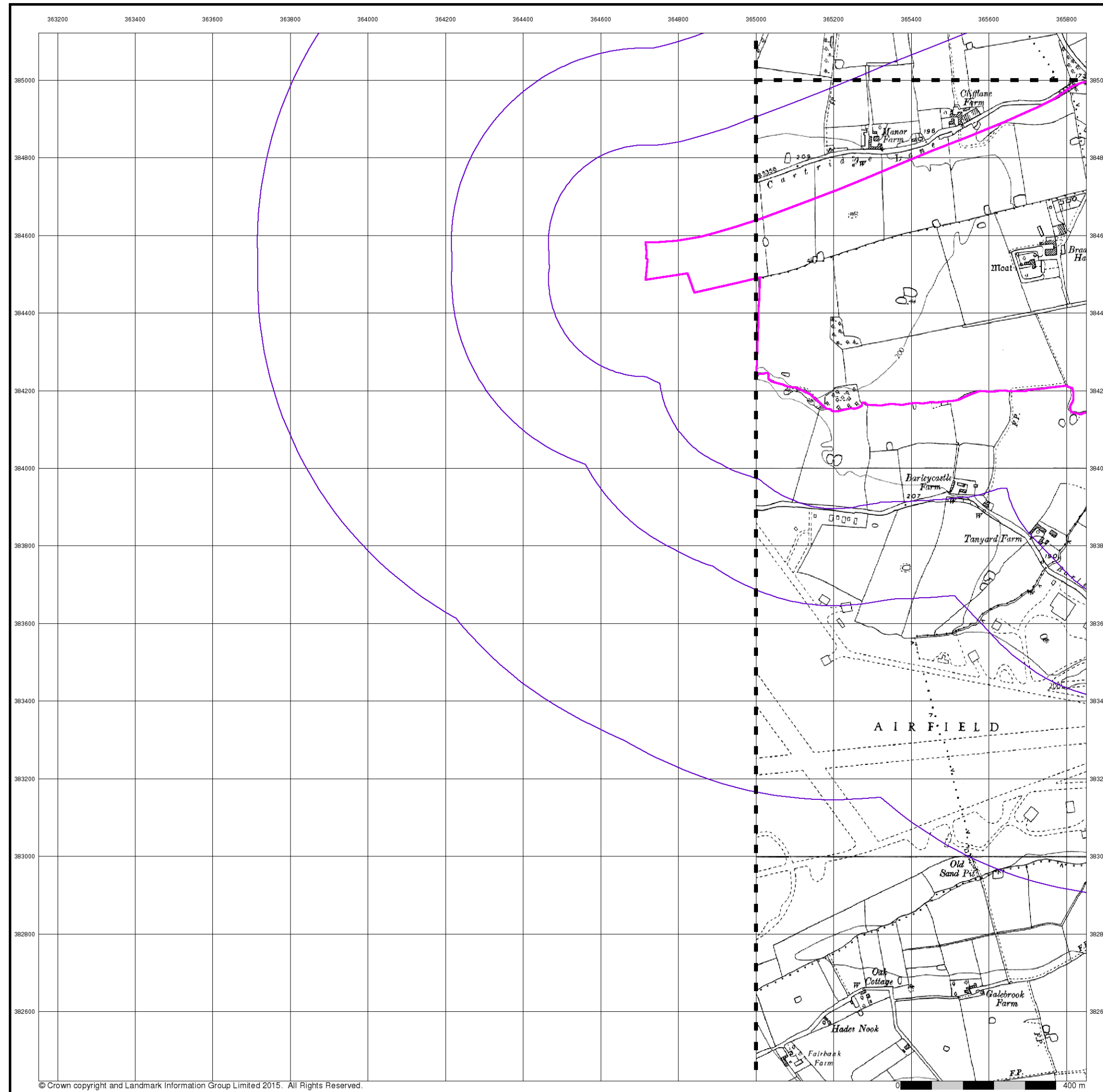
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
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 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1964 - 1966

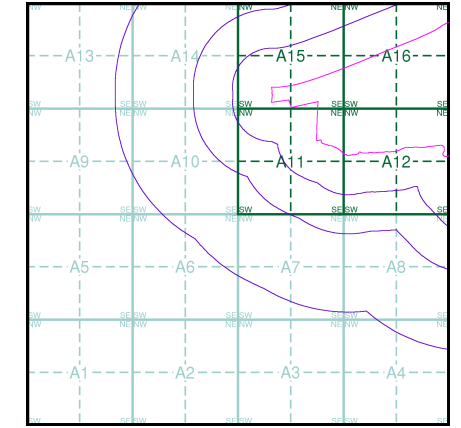
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ68NE	1966	1:10,560
SJ68SE	1964	1:10,560

Historical Map - Slice A



Order Details

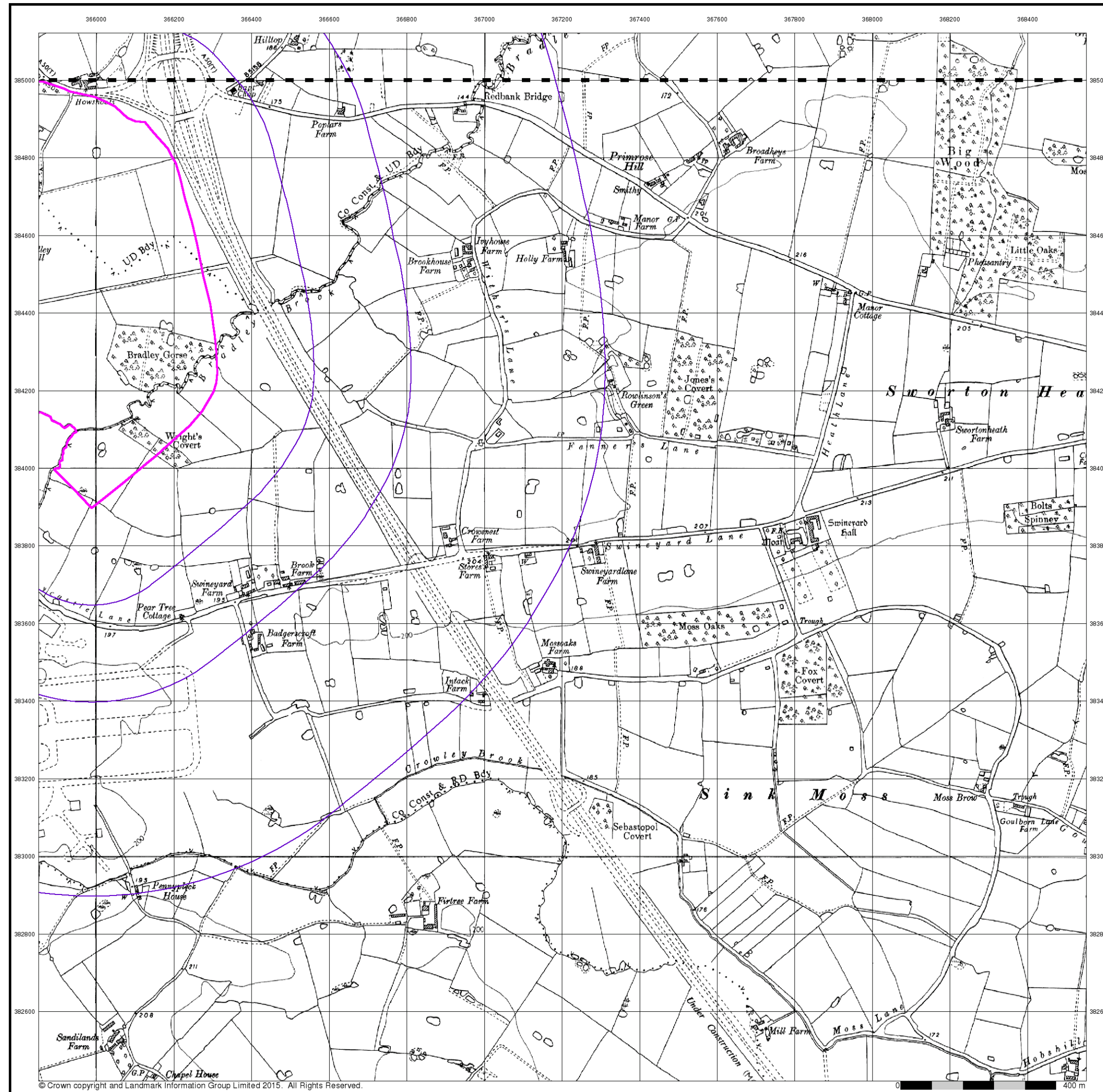
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 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1964 - 1966

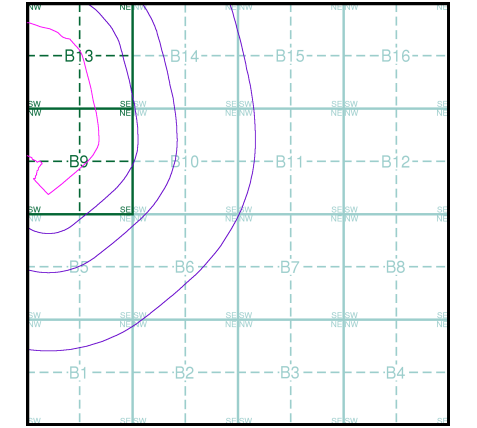
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

---	SJ68NE	1966	1:10,560
---	SJ68SE	1964	1:10,560

Historical Map - Slice B



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

Ordnance Survey Plan

Published 1967

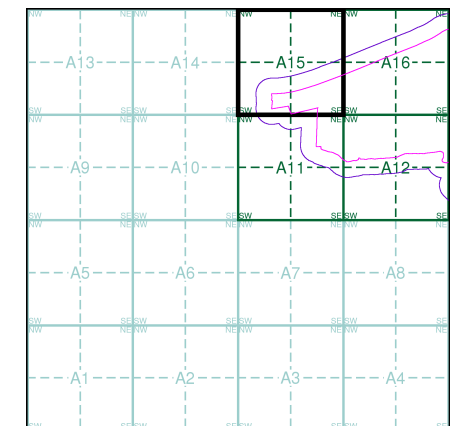
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ6485 1967 12,500	SJ6585 1967 12,500
SJ6484 1967 12,500	SJ6584 1967 12,500

Historical Map - Segment A15



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Ordnance Survey Plan

Published 1967

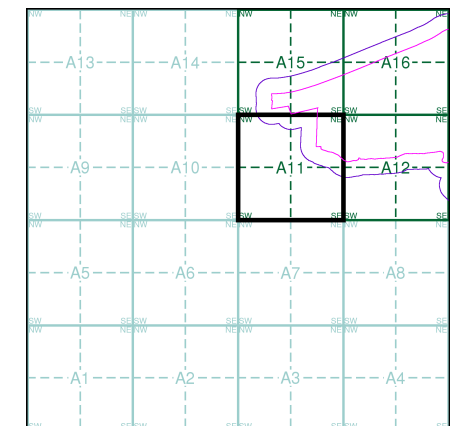
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ6484	SJ6584
1967	1967
12,500	12,500
SJ6483	SJ6583
1967	1967
12,500	12,500

Historical Map - Segment A11

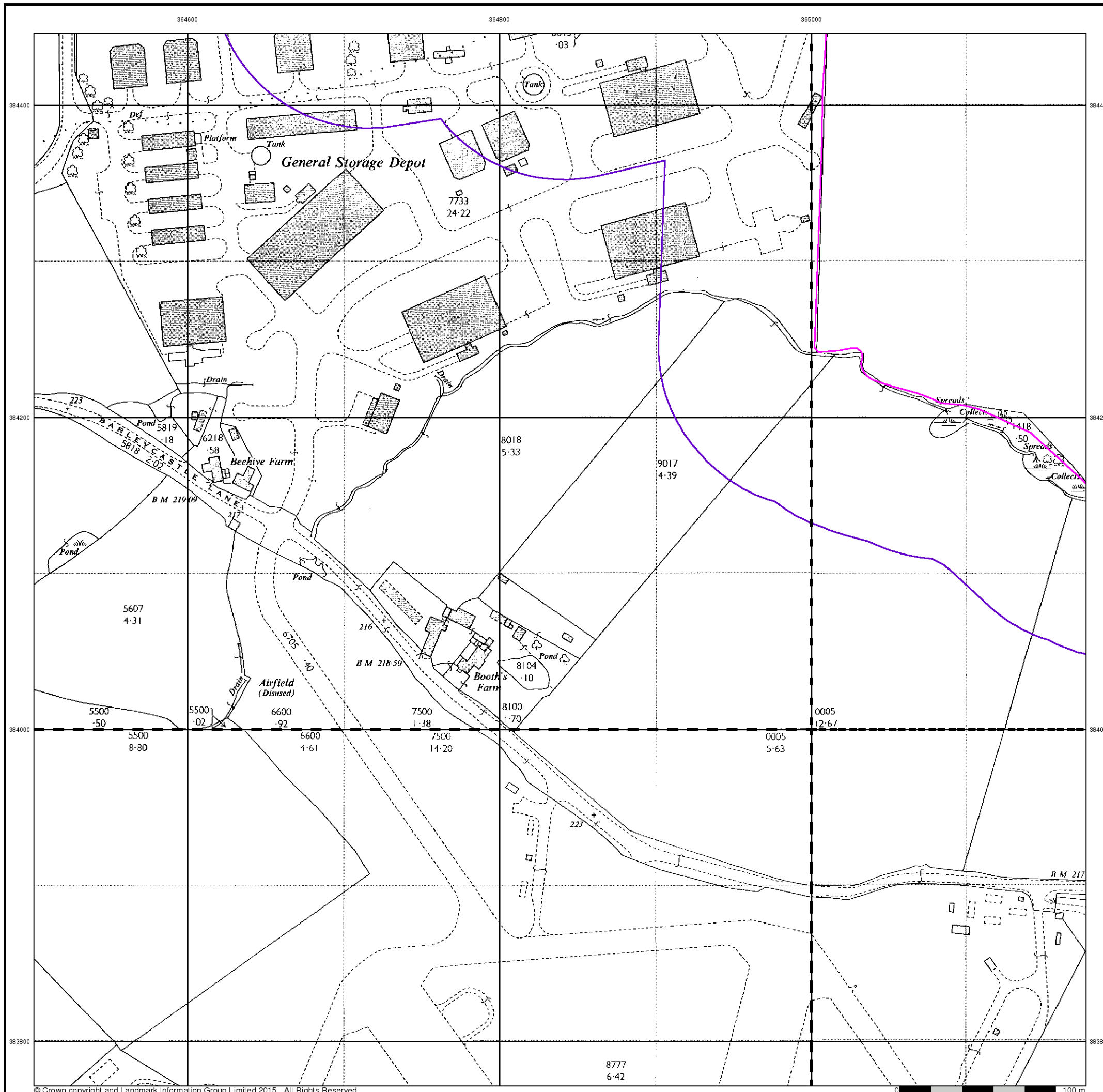


Order Details

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 National Grid Reference: 364910, 384200
 Slice: A
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Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Ordnance Survey Plan

Published 1967

Source map scale - 1:2,500

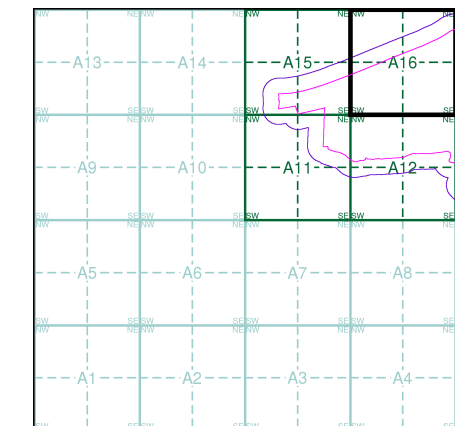
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ6585
1967
1:2,500

SJ6584
1967
1:2,500

Historical Map - Segment A16

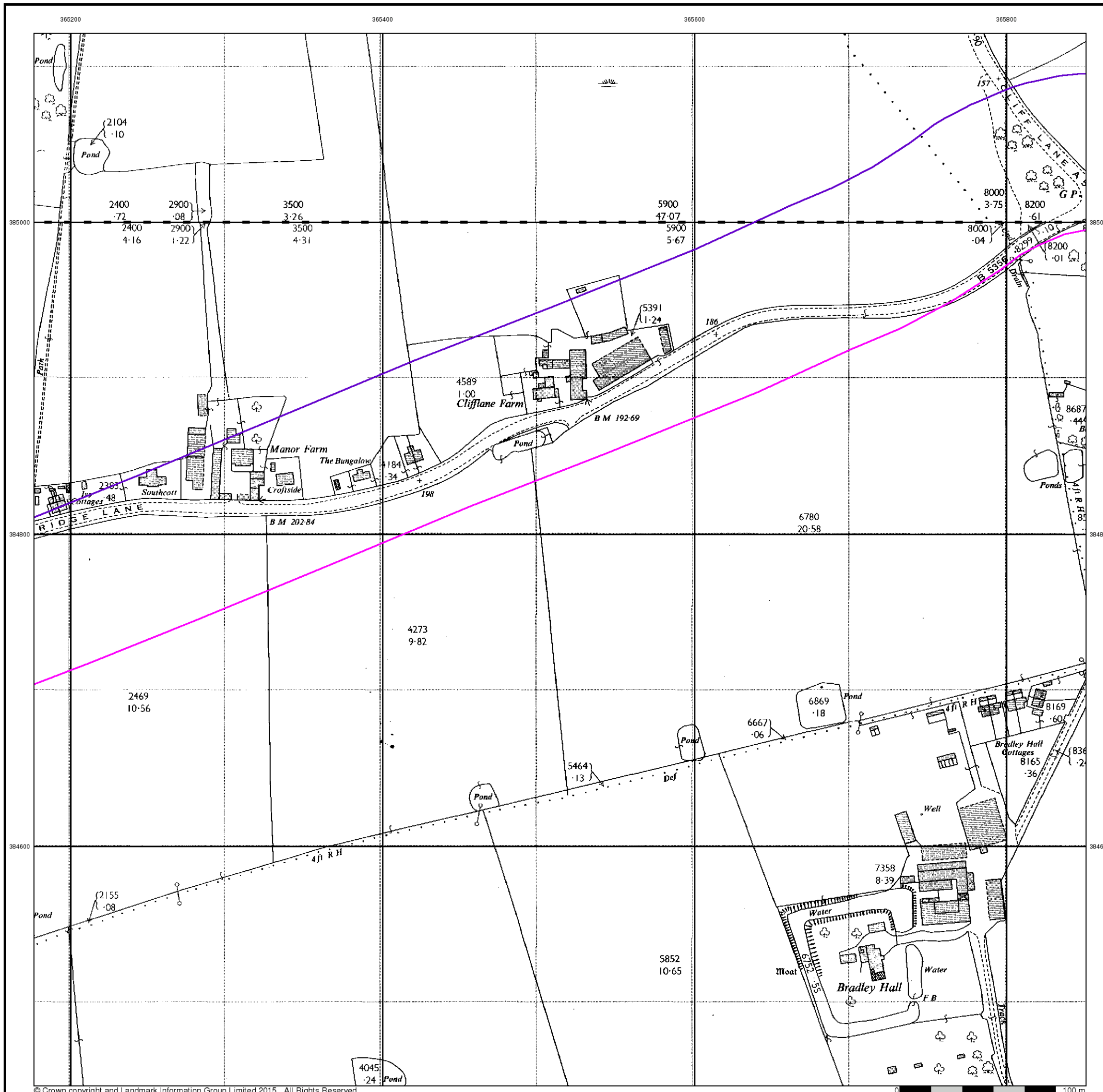


Order Details

Order Number: 135773225_1_1
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 National Grid Reference: 364910, 384200
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Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Ordnance Survey Plan

Published 1967

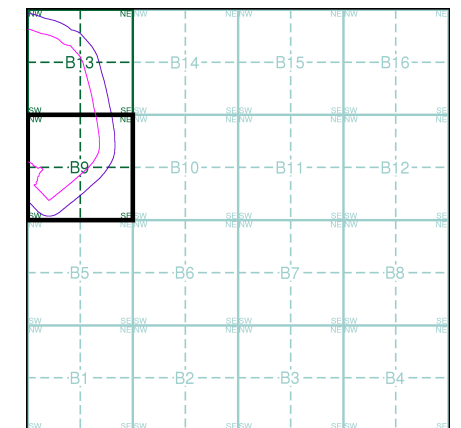
Source map scale - 1:2,500

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Map Name(s) and Date(s)

SJ6584 1967 1:2,500	SJ6684 1967 1:2,500
SJ6583 1967 1:2,500	SJ6683 1967 1:2,500

Historical Map - Segment B9

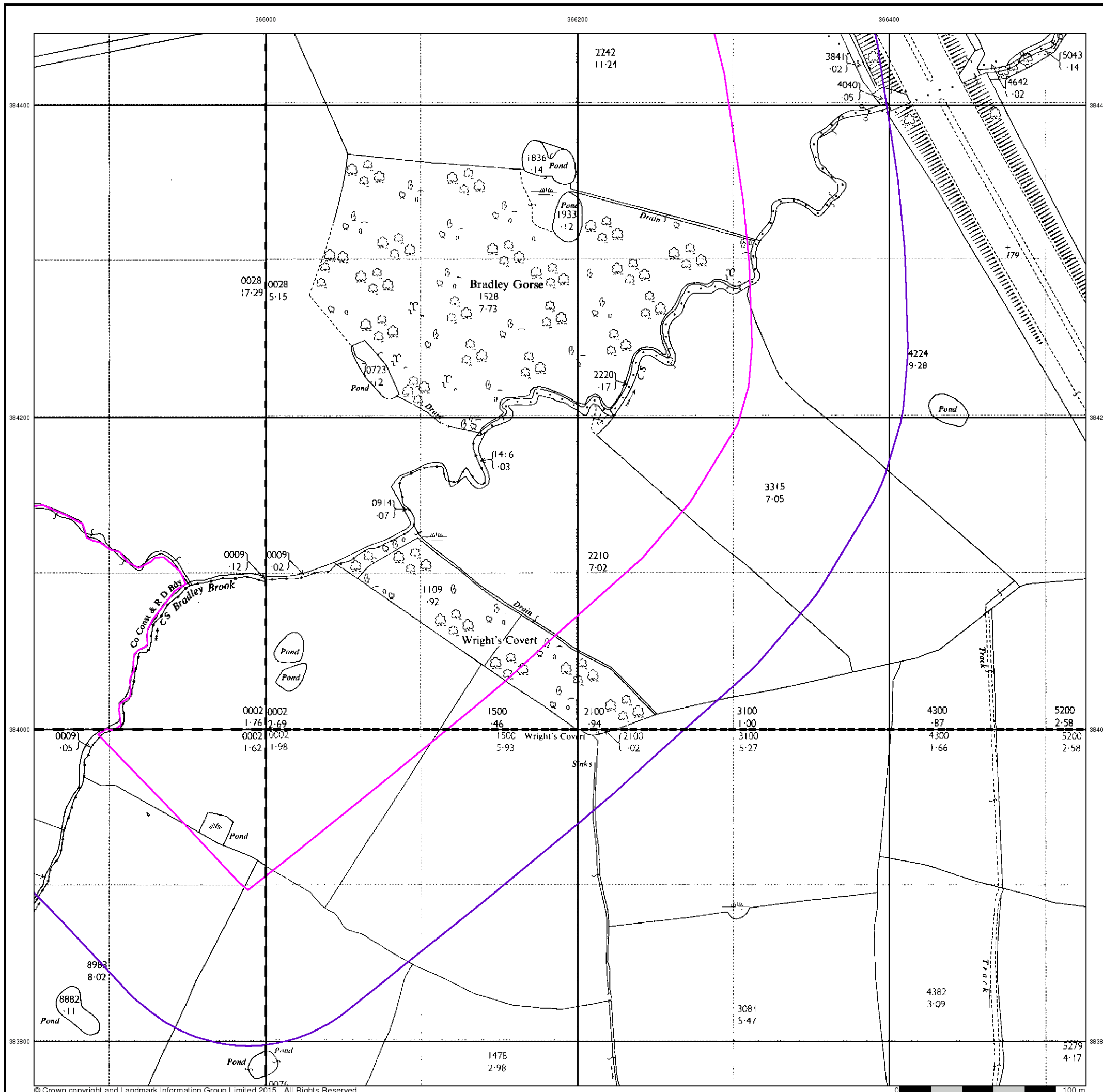


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
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Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Ordnance Survey Plan

Published 1967

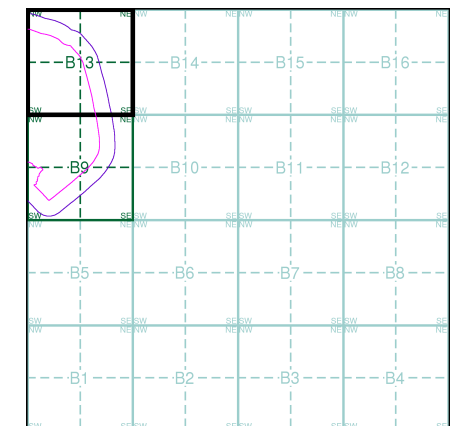
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

SJ6585	SJ6685
1967	1967
12,500	12,500
SJ6584	SJ6684
1967	1967
12,500	12,500

Historical Map - Segment B13

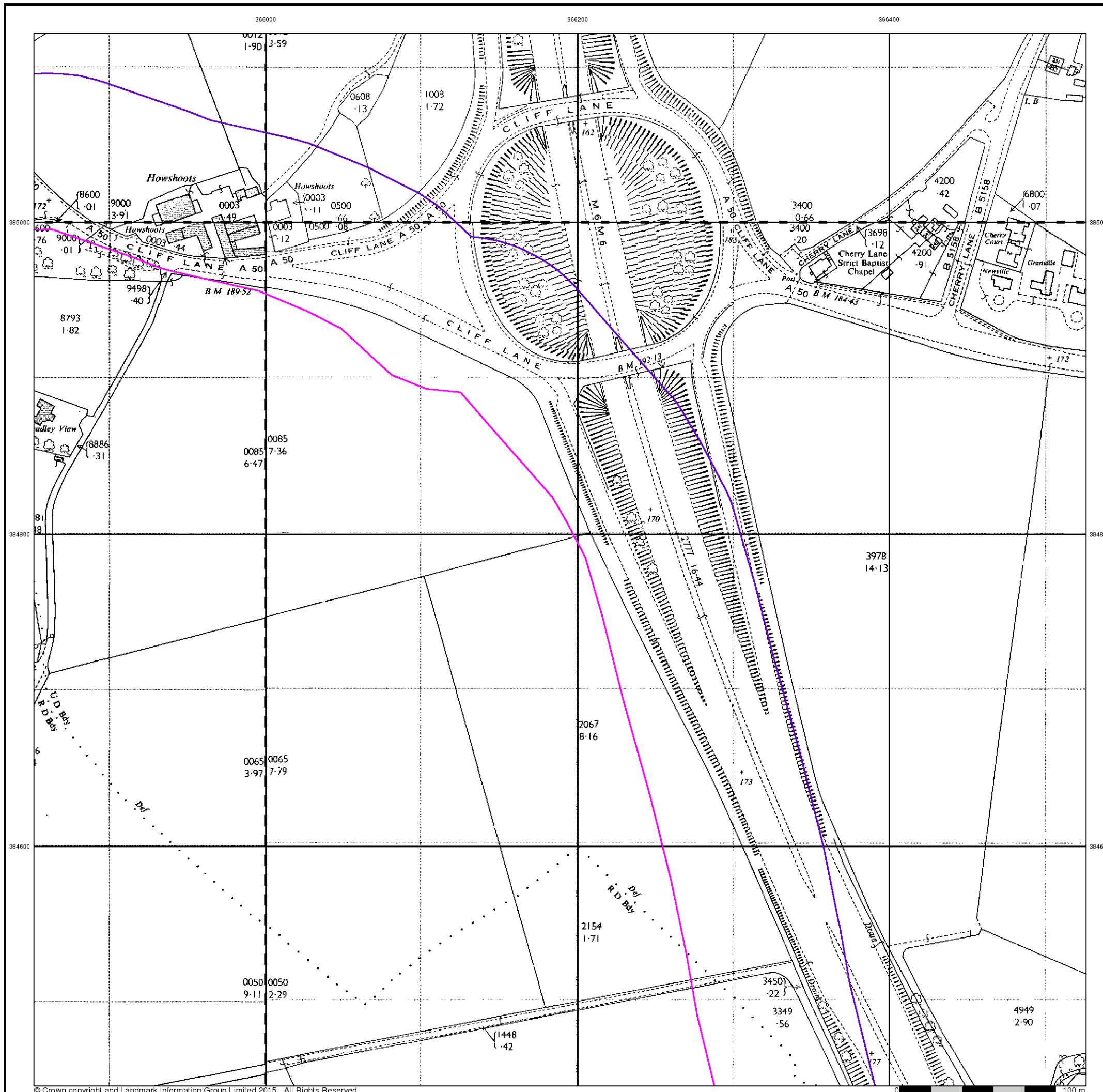


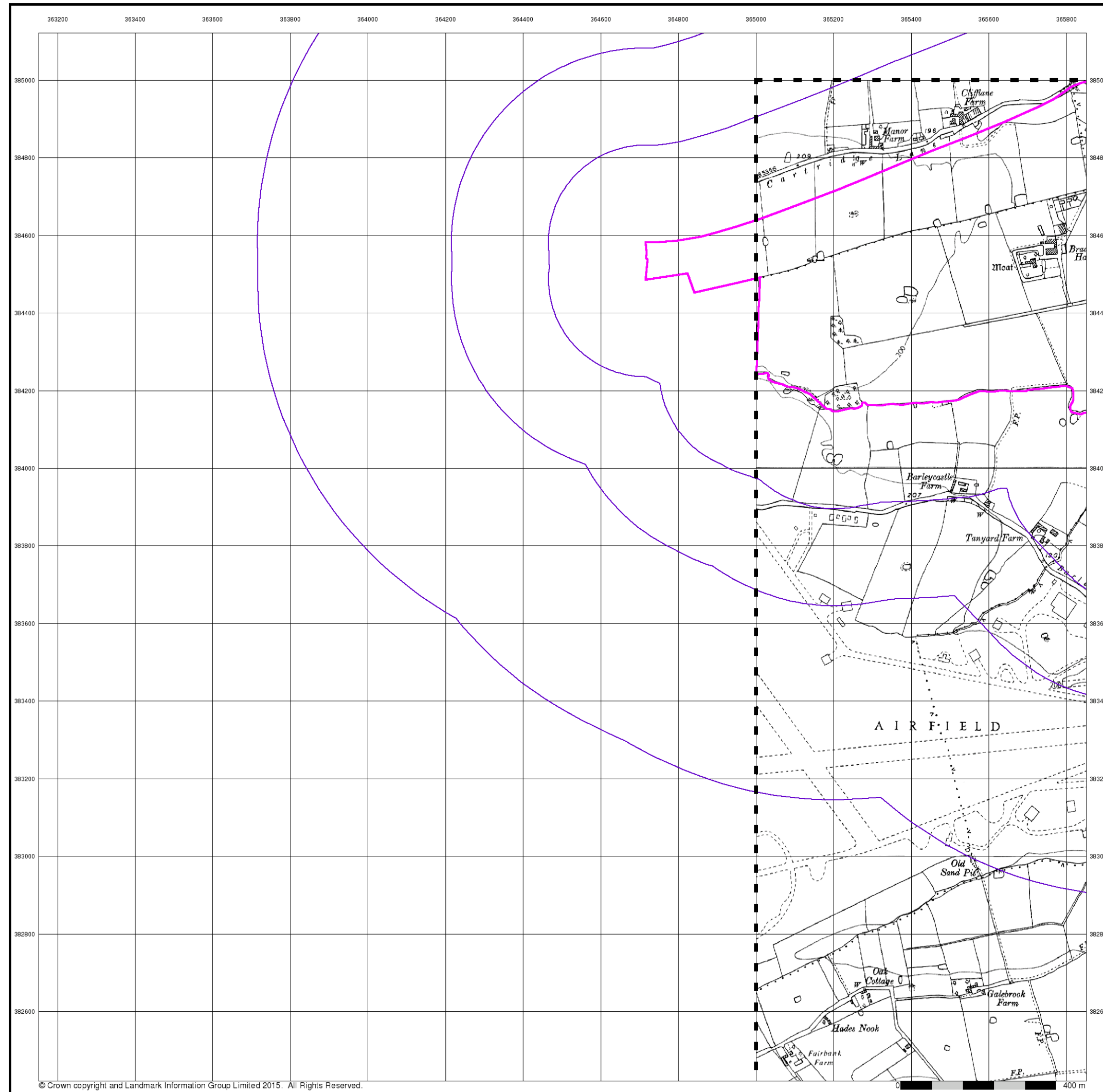
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR





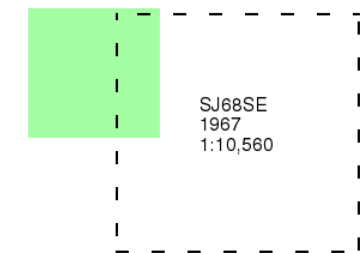
Ordnance Survey Plan

Published 1967

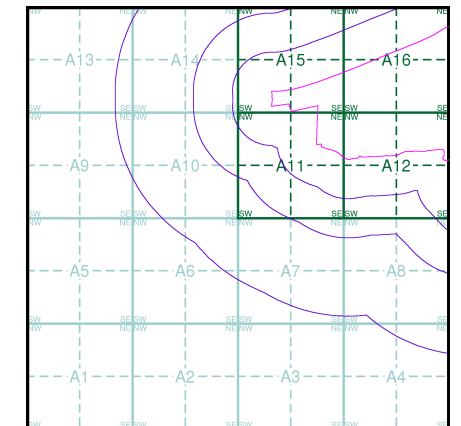
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A

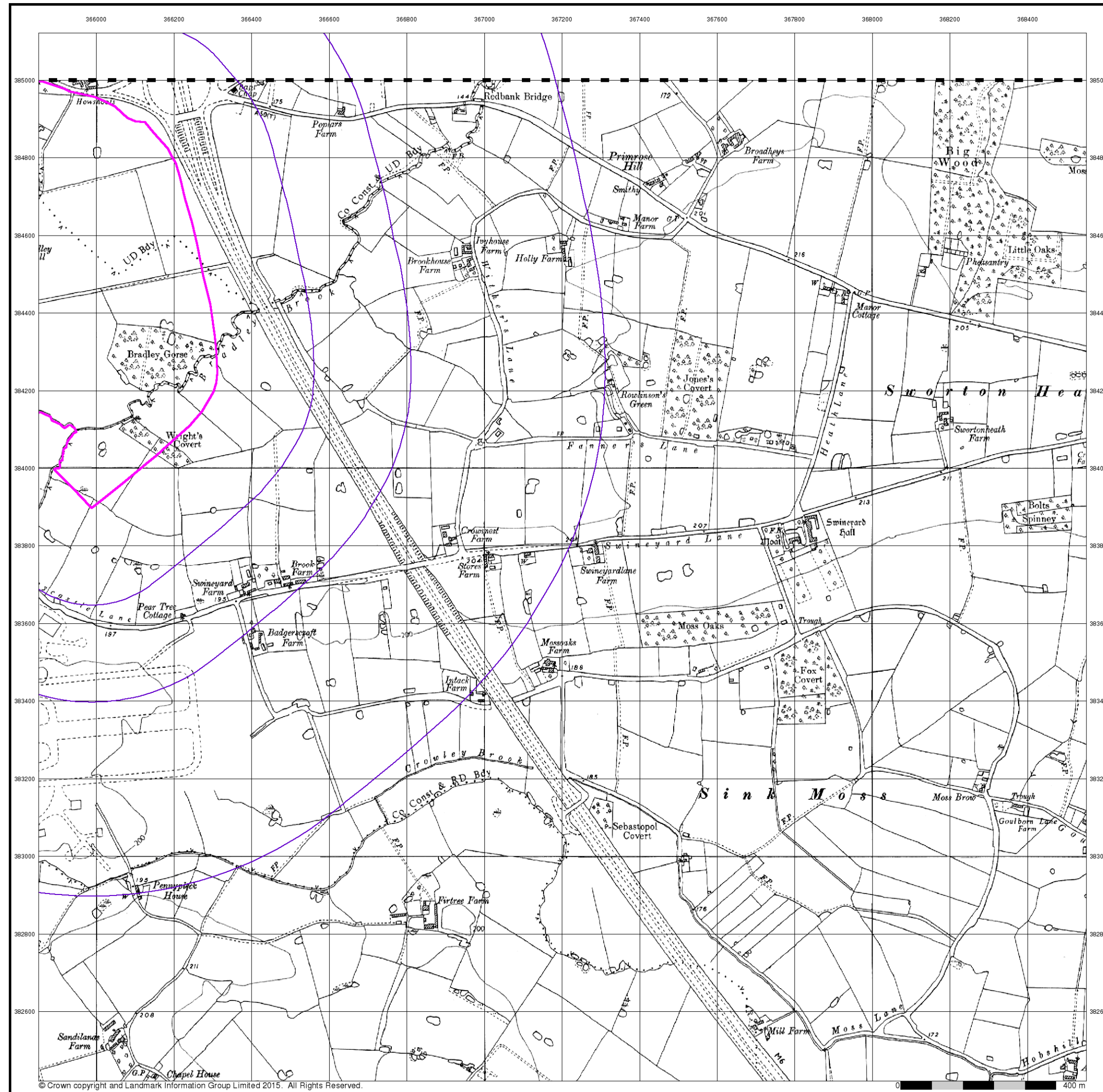


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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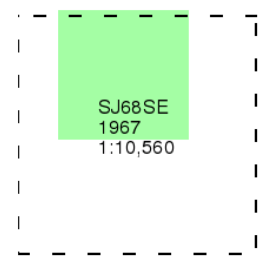
Ordnance Survey Plan

Published 1967

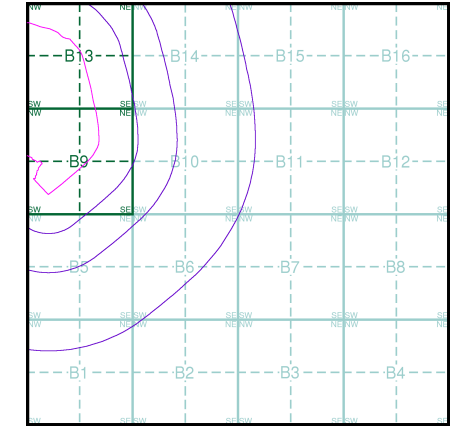
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

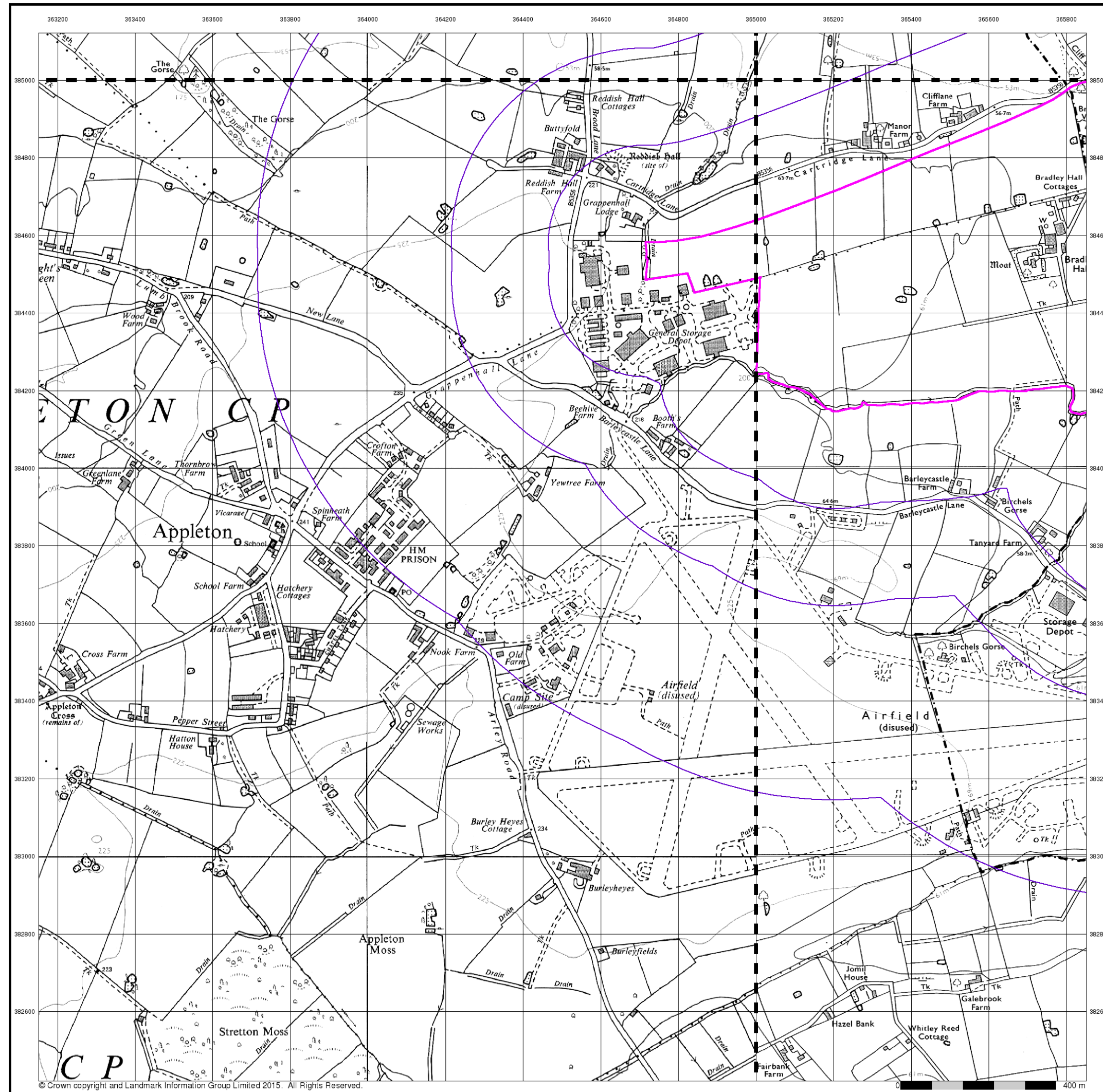
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1970 - 1971

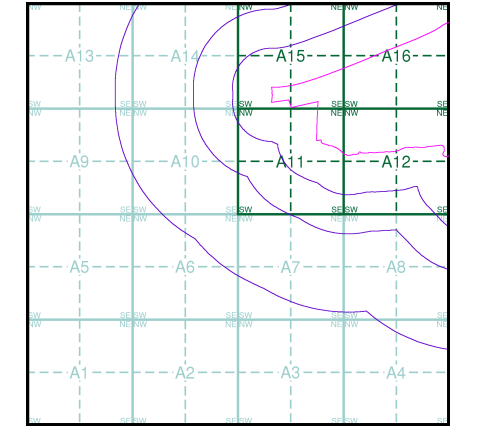
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ68NW	SJ68NE
1970	1971
1:10,000	1:10,000
SJ68SW	SJ68SE
1970	1970
1:10,560	1:10,000

Historical Map - Slice A



Order Details

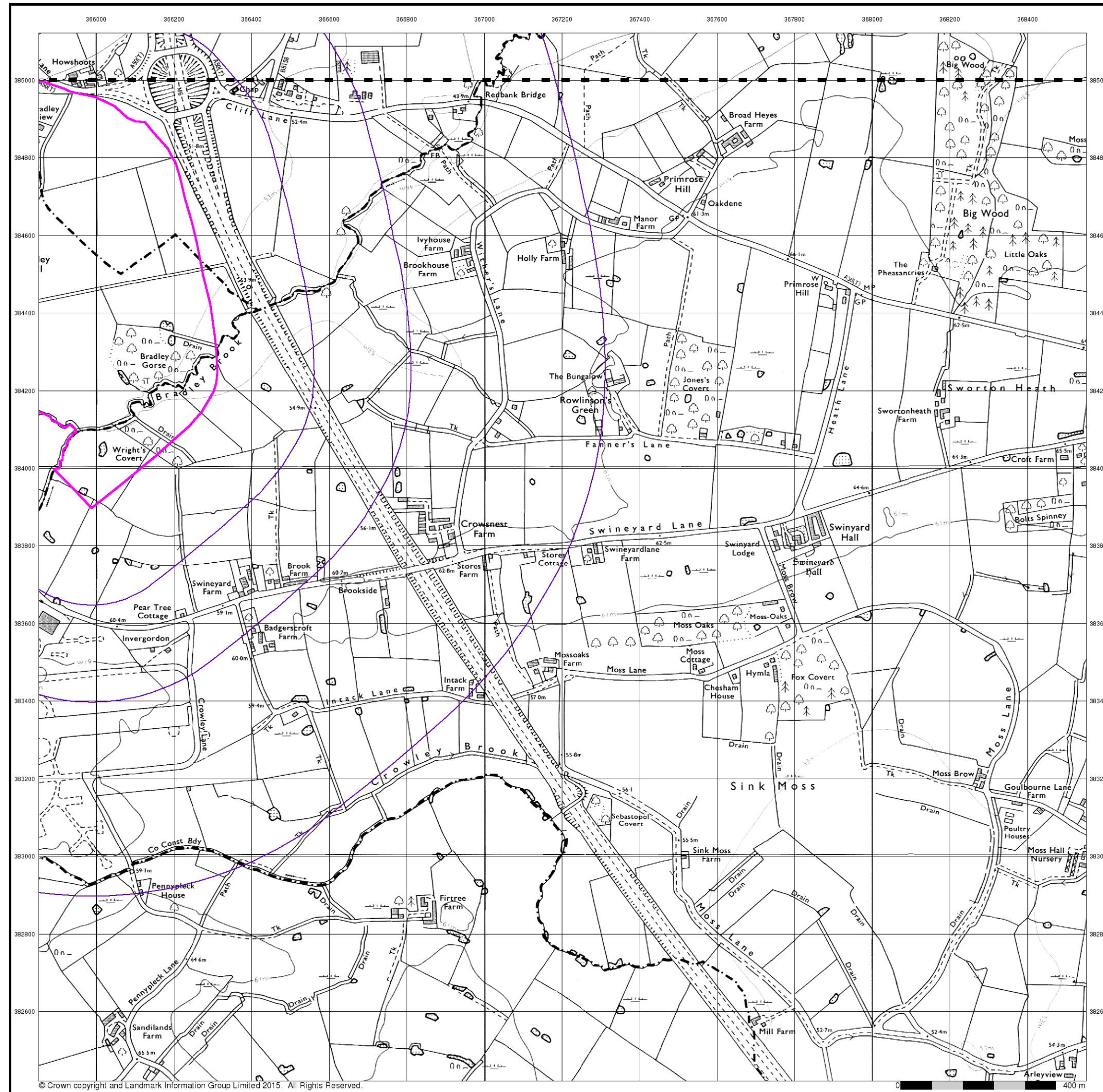
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Ordnance Survey Plan

Published 1970 - 1971

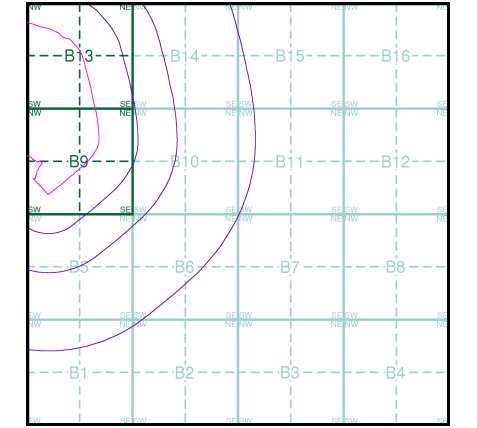
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ68NE	1971	1:10,000
SJ68SE	1970	1:10,000

Historical Map - Slice B



Order Details

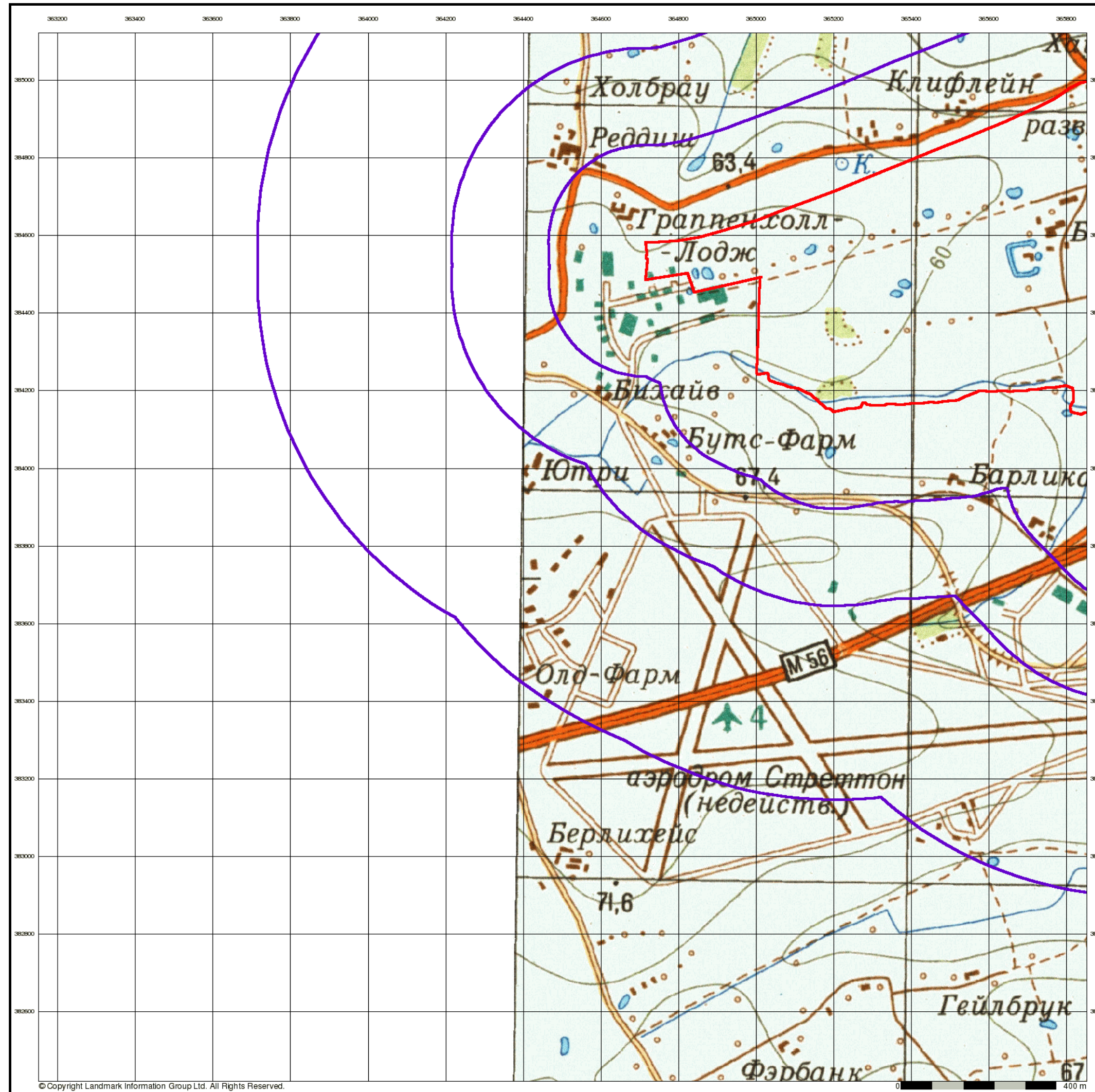
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Manchester

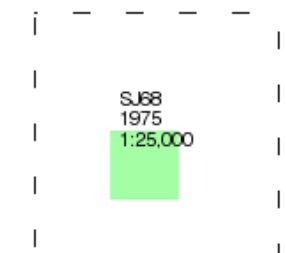
Published 1975

Source map scale - 1:25,000

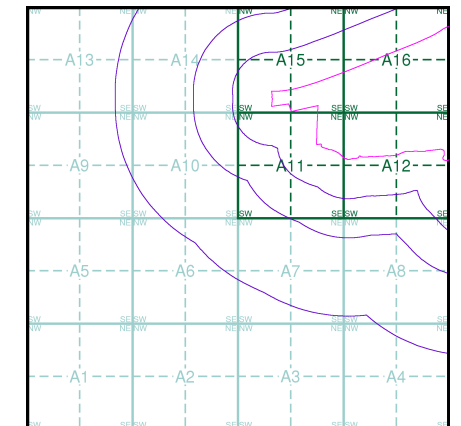
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

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Manchester

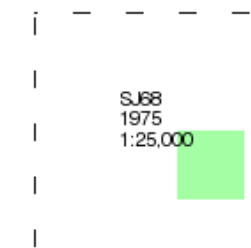
Published 1975

Source map scale - 1:25,000

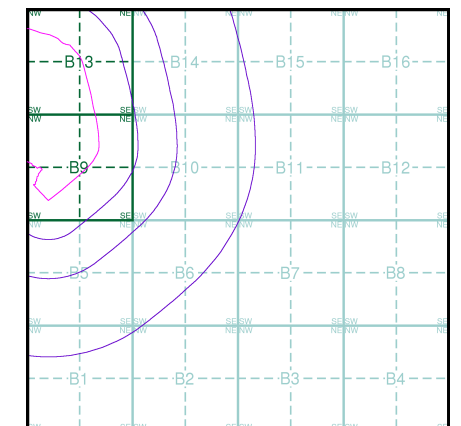
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice B

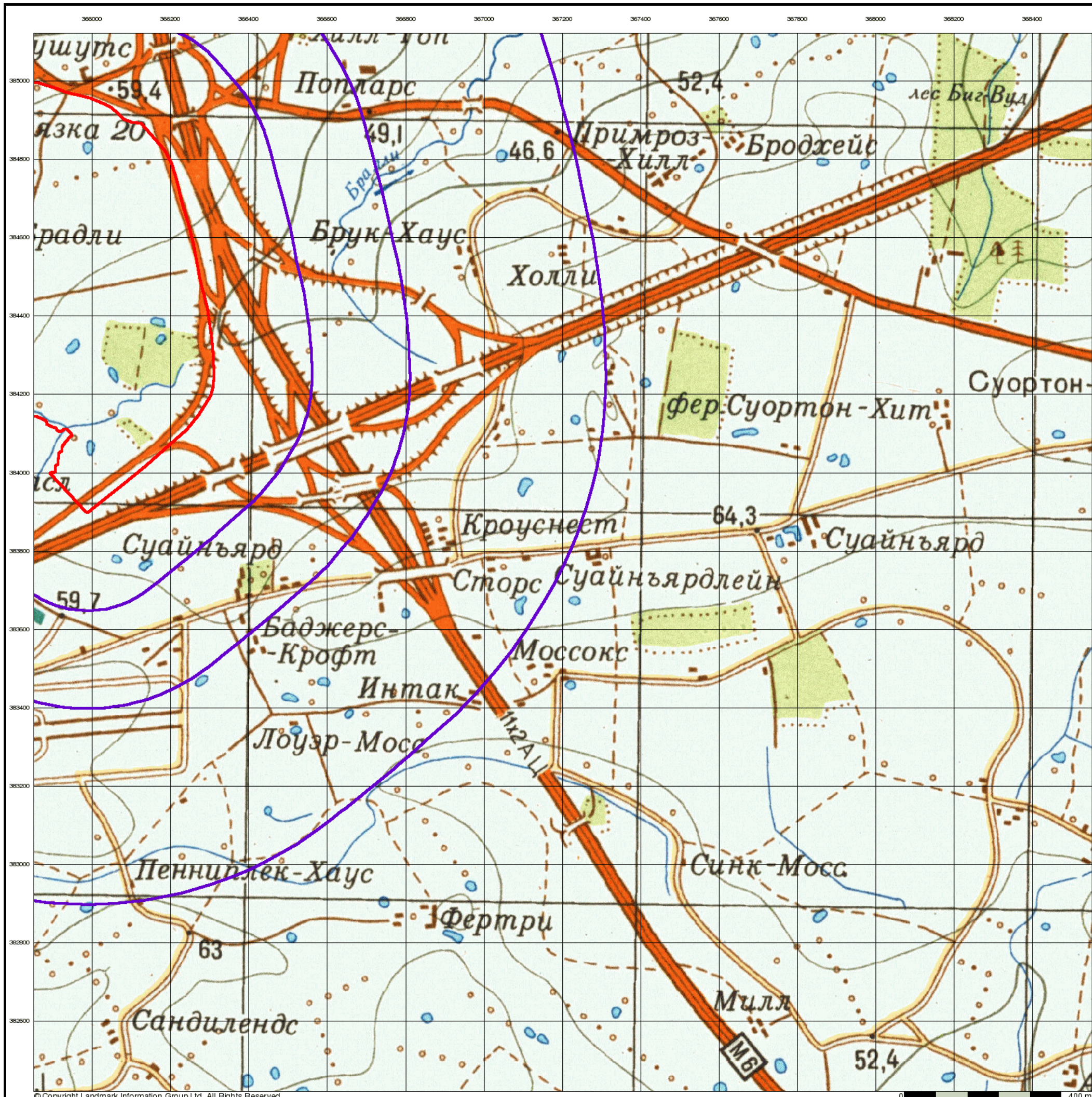


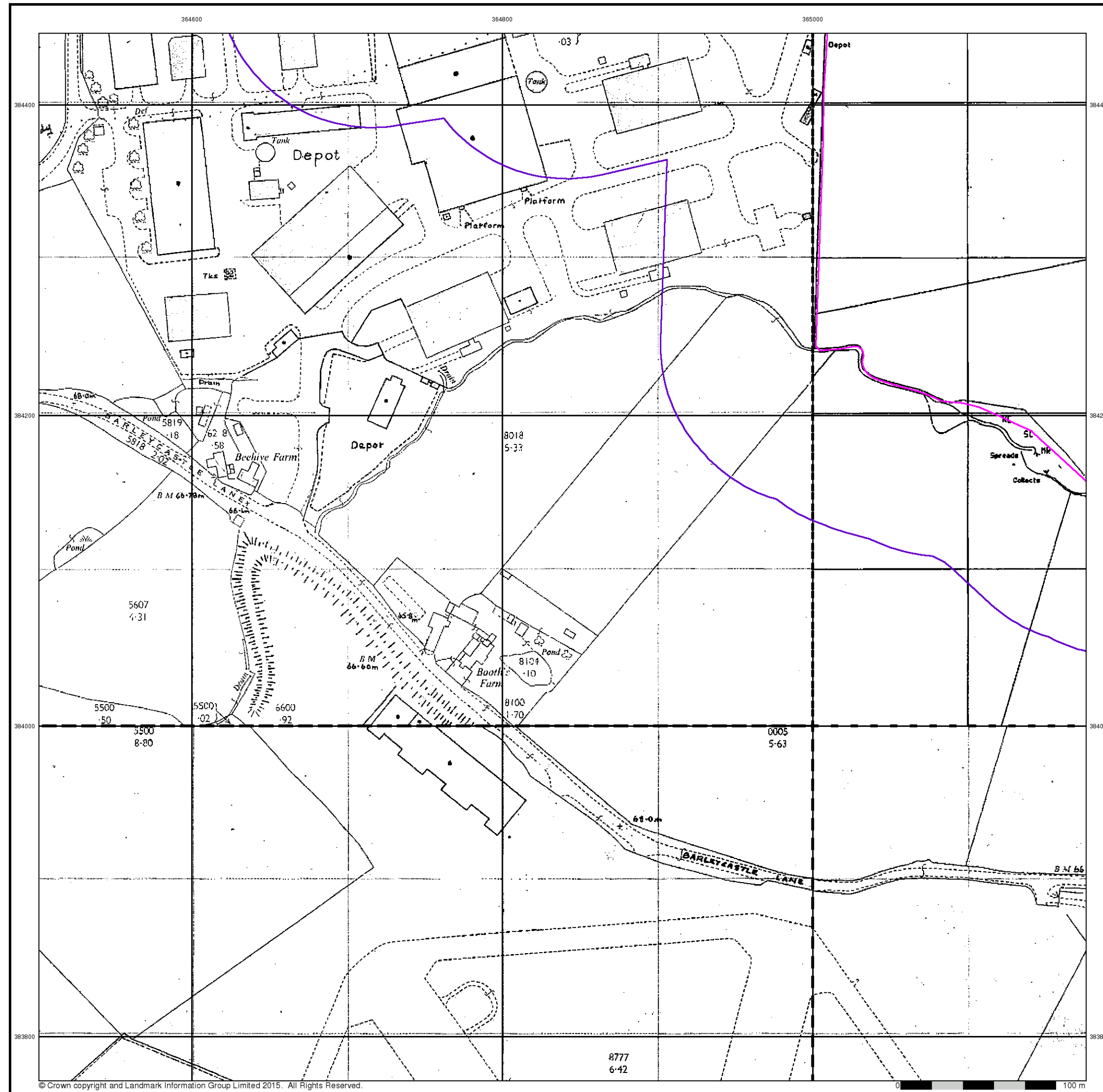
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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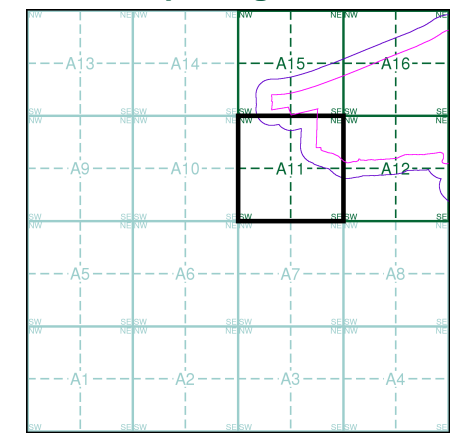
Additional SIMs
Published 1978 - 1991
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6484	SJ6584
1984	1991
12,500	12,500
■	
SJ6483	SJ6583
1978	1978
12,500	12,500

Historical Map - Segment A11



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Warrington

Published 1984

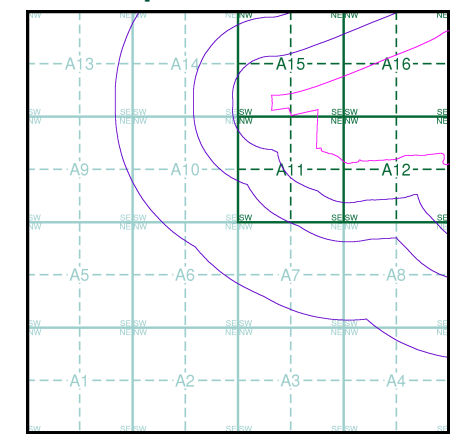
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use. They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)

SJ68NW 1984 1:10,000	SJ68NE 1984 1:10,000
SJ68SW 1984 1:10,000	SJ68SE 1984 1:10,000

Russian Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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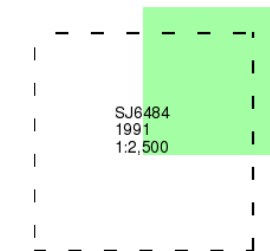
Additional SIMs

Published 1991

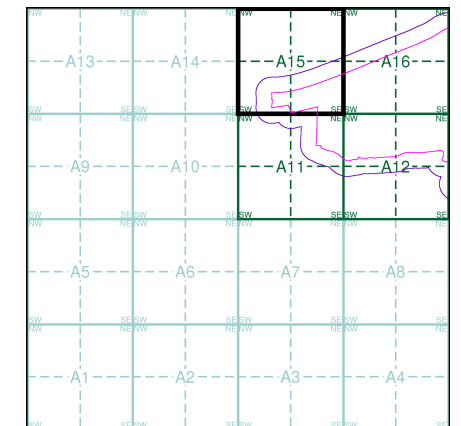
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A15



Order Details

Order Number: 135773225_1_1
Customer Ref: 1015524 - Warrington Interchange MP
National Grid Reference: 364910, 384200
Slice: A
Site Area (Ha): 93.66
Search Buffer (m): 100

Site Details

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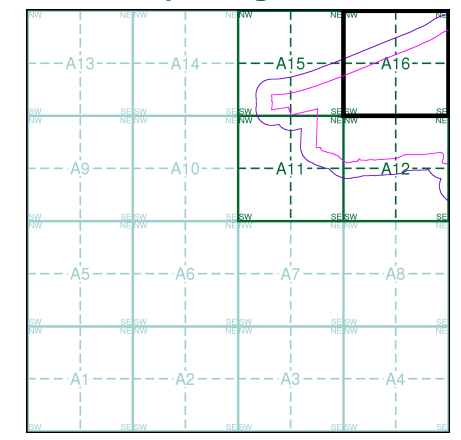
Additional SIMs
Published 1991
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6585	1991	1:2,500
SJ6584	1991	1:2,500

Historical Map - Segment A16



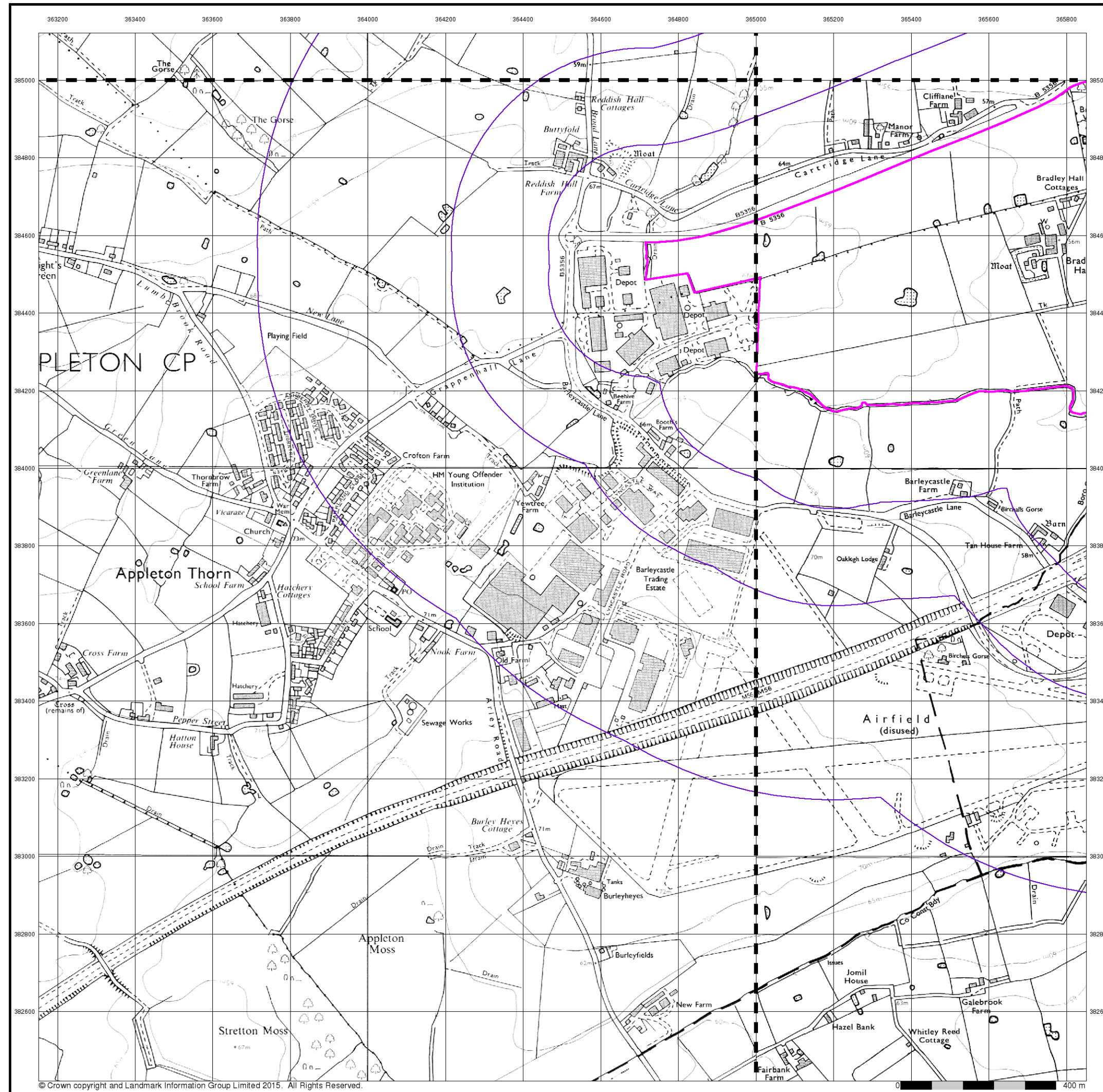
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Ordnance Survey Plan

Published 1992 - 1993

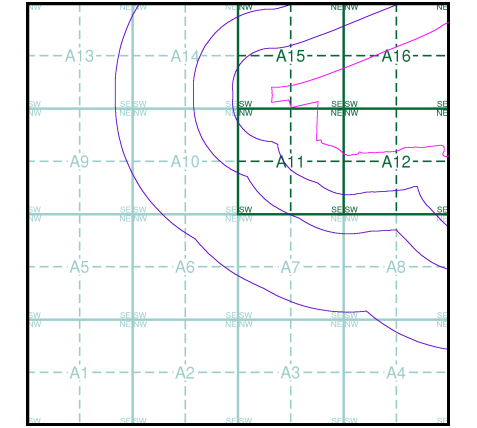
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ68NW	1993	1:10,000
SJ68SW	1992	1:10,000
SJ68SE	1992	1:10,000

Historical Map - Slice A



Order Details

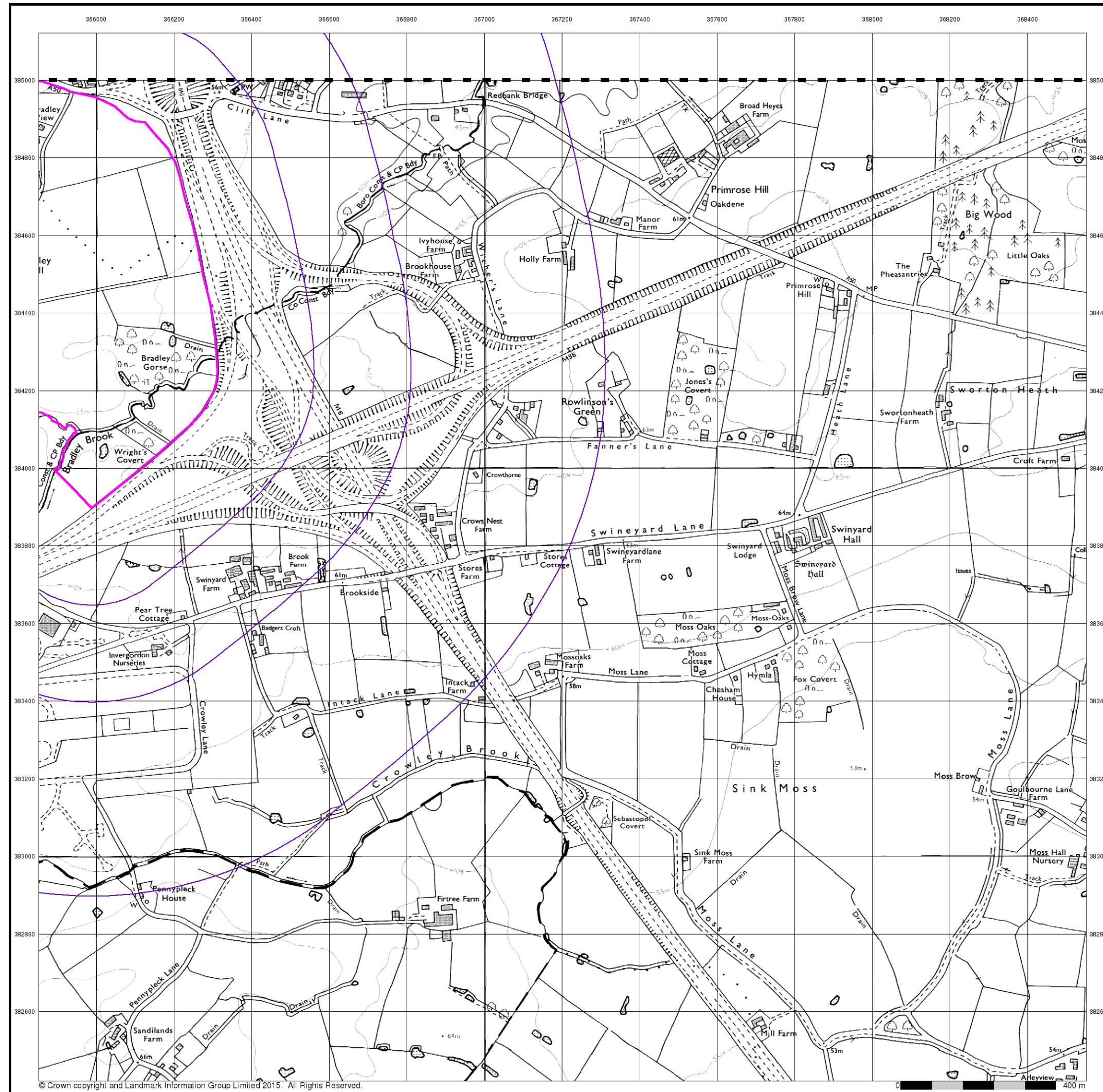
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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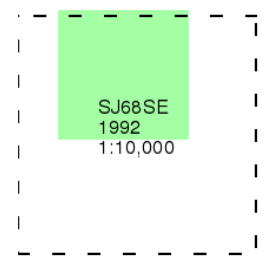
Ordnance Survey Plan

Published 1992

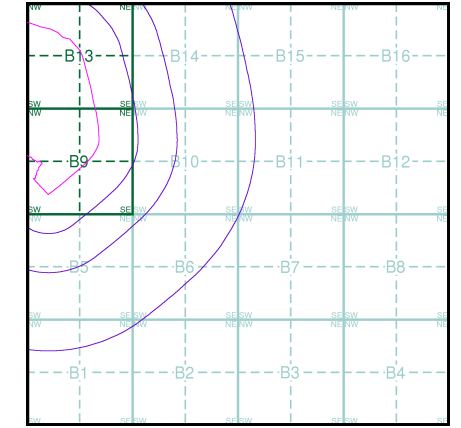
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice B



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

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Large-Scale National Grid Data

Published 1993

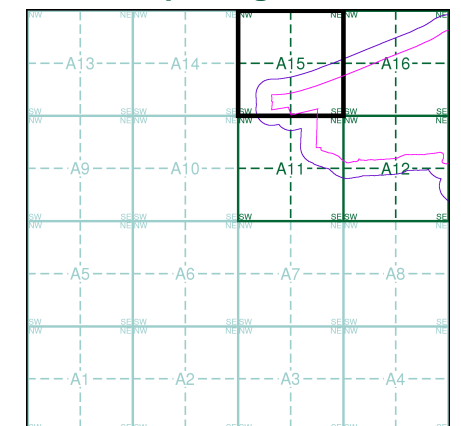
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6485	SJ6585
1993	1993
12,500	12,500
SJ6484	SJ6584
1993	1993
12,500	12,500

Historical Map - Segment A15



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1993

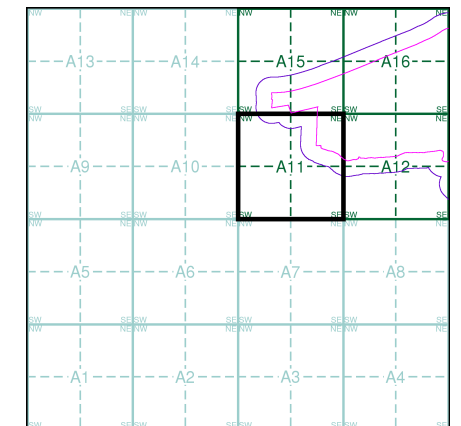
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'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6484	SJ6584
1993	1993
1:2,500	1:2,500
■	
SJ6483	SJ6583
1993	1993
1:2,500	1:2,500

Historical Map - Segment A11

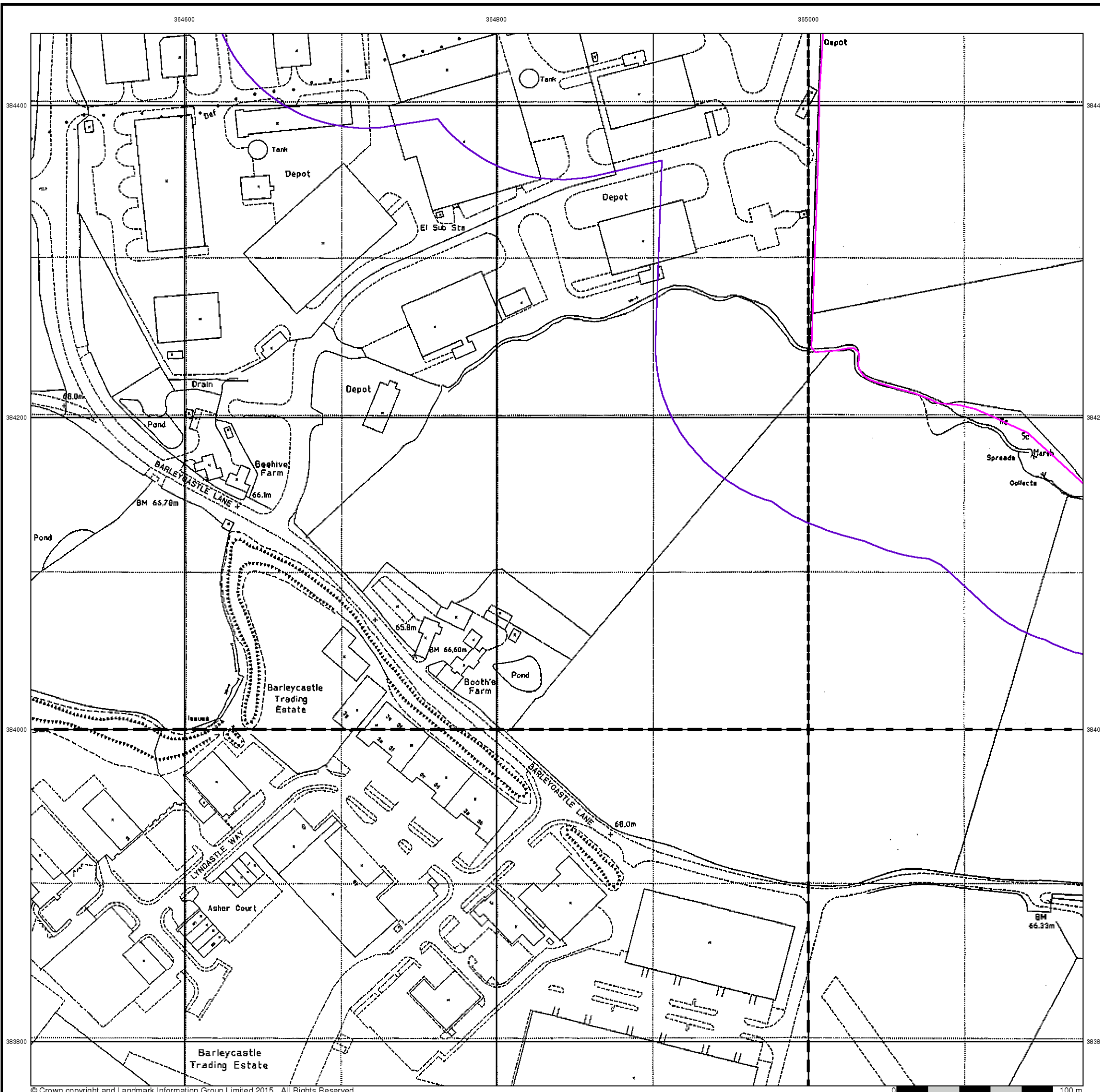


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Large-Scale National Grid Data

Published 1993

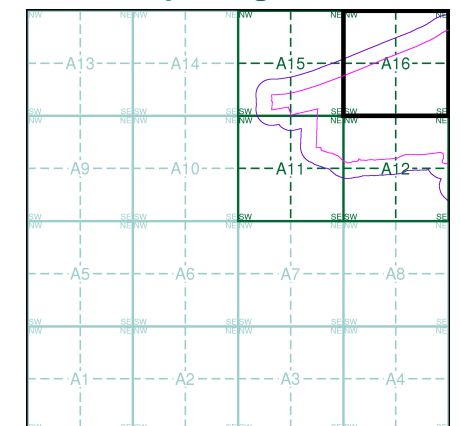
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6585	1993	1:2,500
SJ6584	1993	1:2,500

Historical Map - Segment A16



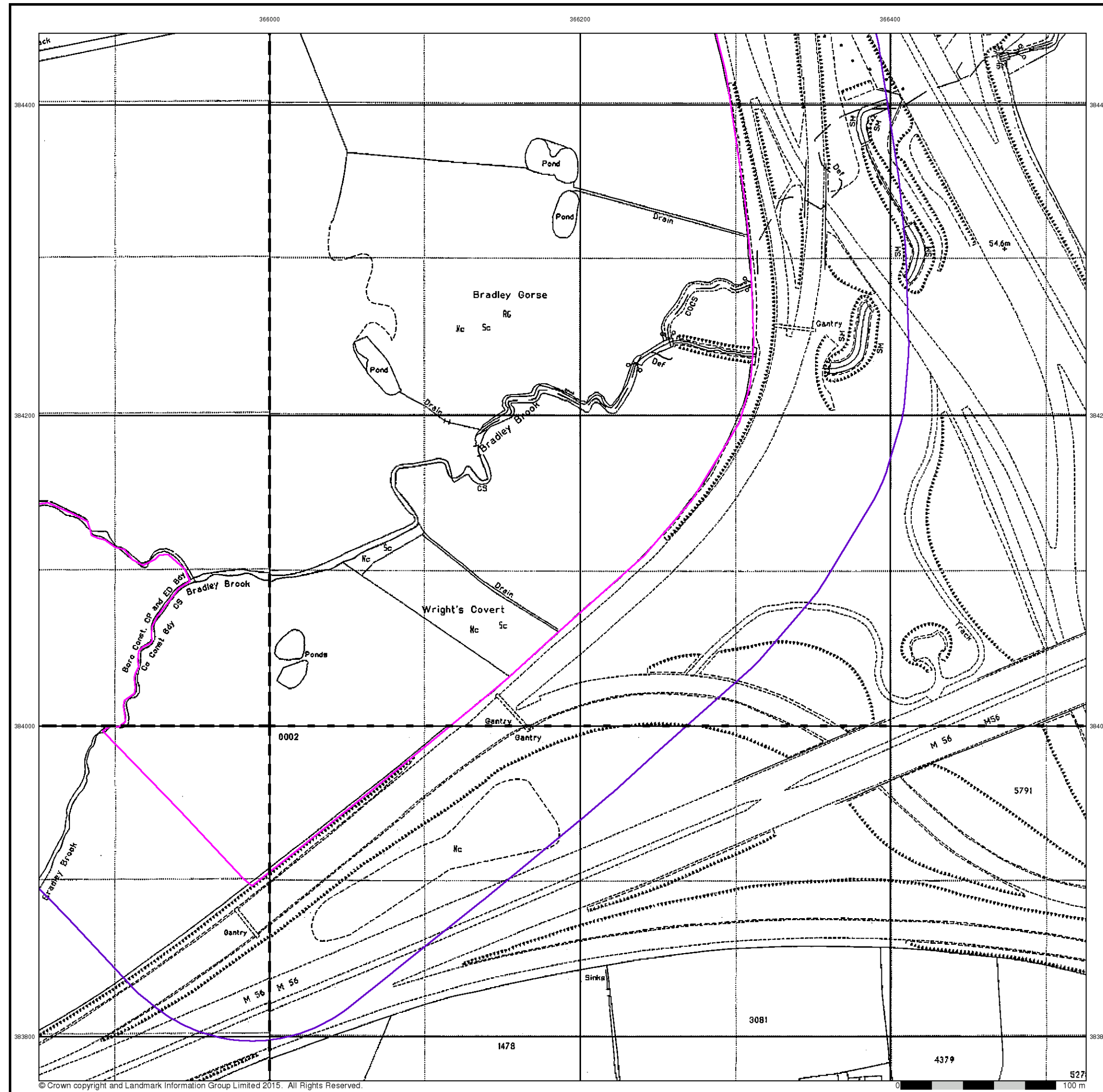
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR





Large-Scale National Grid Data

Published 1993

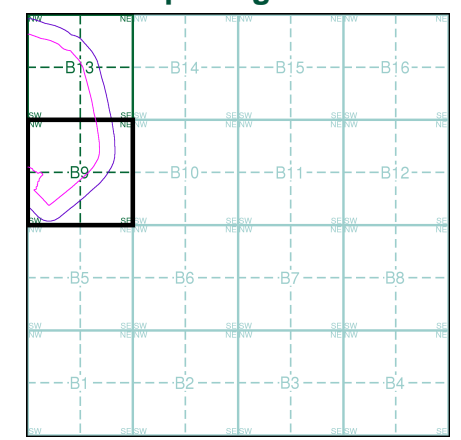
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6584	SJ6684
1993	1993
1:2,500	1:2,500
■	
SJ6583	SJ6683
1993	1993
1:2,500	1:2,500

Historical Map - Segment B9



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1993

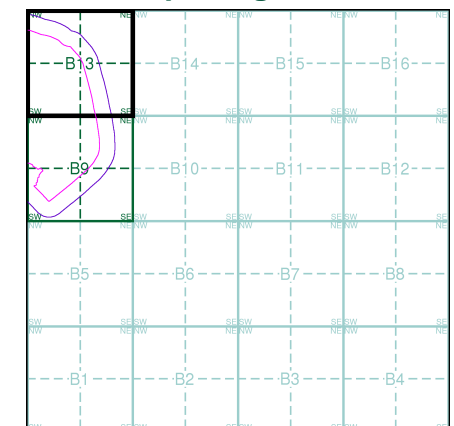
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ6585	SJ6685
1993	1993
1:2,500	1:2,500
SJ6584	SJ6684
1993	1993
1:2,500	1:2,500

Historical Map - Segment B13



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR





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10k Raster Mapping

Published 1999

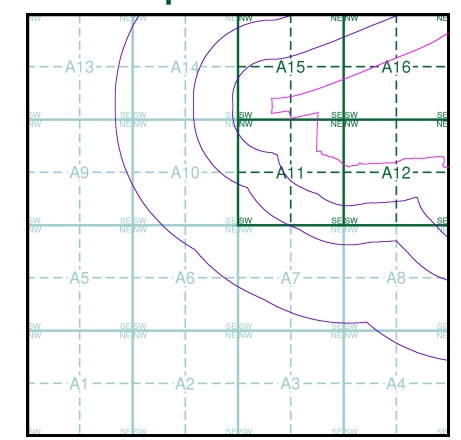
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SJ68NW	SJ68NE
1999	1999
1:10,000	1:10,000
SJ68SW	SJ68SE
1999	1999
1:10,000	1:10,000

Historical Map - Slice A



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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10k Raster Mapping

Published 1999

Source map scale - 1:10,000

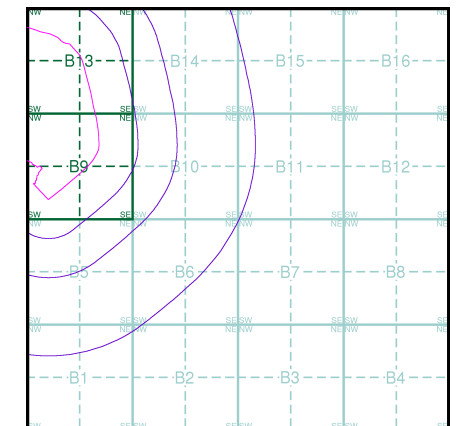
The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

---	SJ68NE	
---	1999	
---	1:10,000	

---	SJ68SE	
---	1999	
---	1:10,000	

Historical Map - Slice B

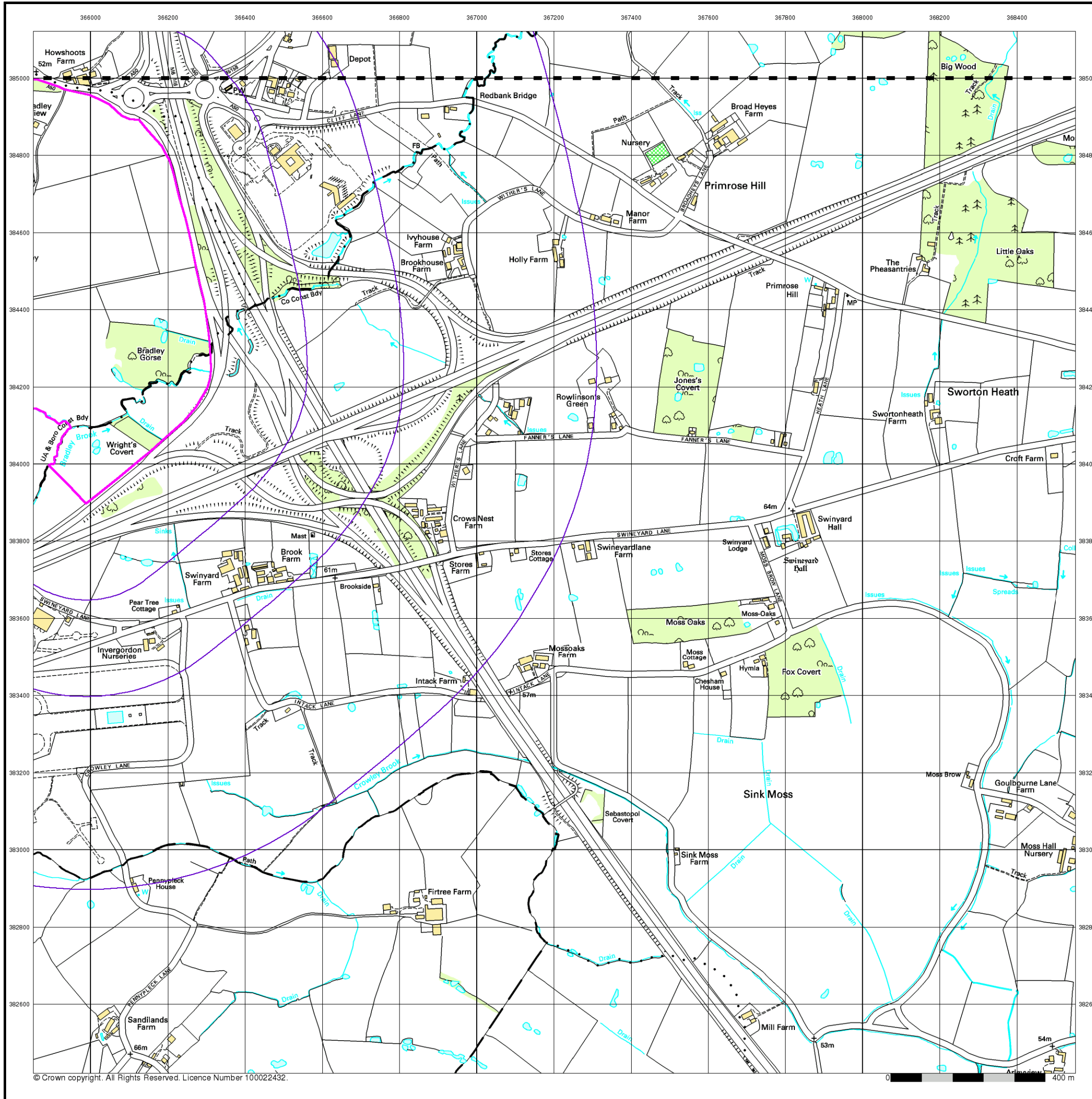


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



364600

364800

365000

385000

385000

384800

384800

384600

384600



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0 100 m

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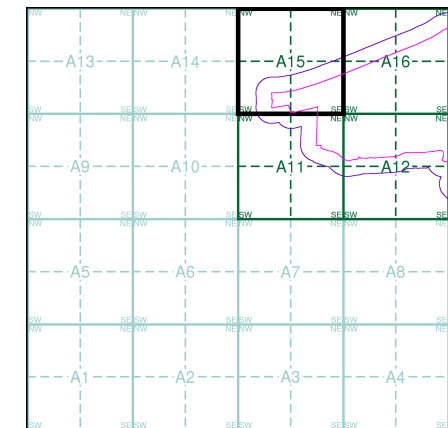
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Historical Aerial Photography

Published 2000

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Historical Aerial Photography - Segment A15



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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364600

364800

365000

384400

384400

384200

384200

384000

384000

383800

383800



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0 100 m

Envirocheck[®]

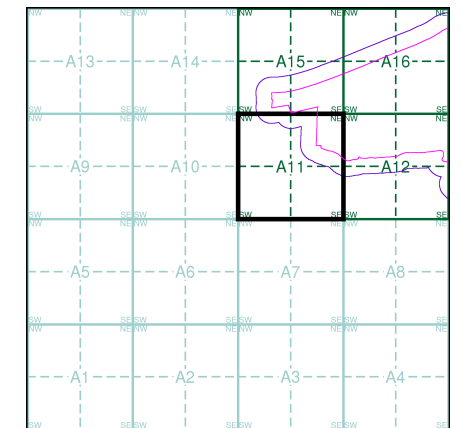
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Historical Aerial Photography

Published 2000

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Historical Aerial Photography - Segment A11



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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Web: www.envirocheck.co.uk

365200

365400

365600

365800

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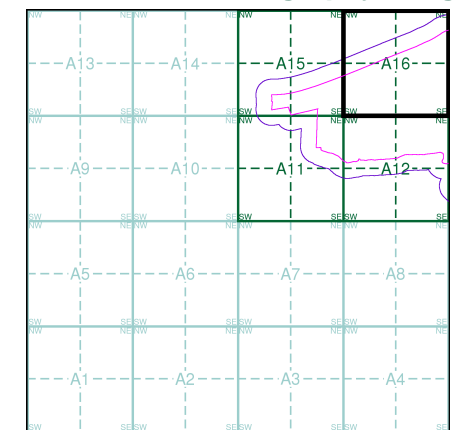
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Historical Aerial Photography

Published 2000

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Historical Aerial Photography - Segment A16



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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 Web: www.envirocheck.co.uk



366000

366200

366400

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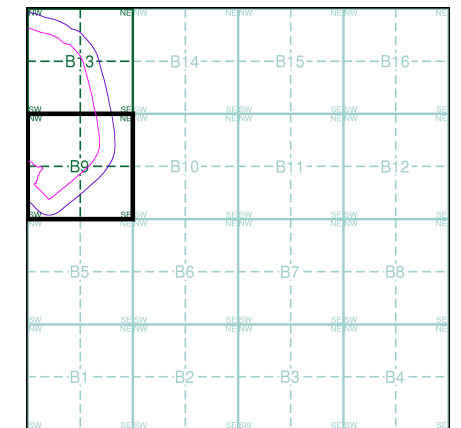
● LANDMARK INFORMATION GROUP®

Historical Aerial Photography

Published 2000

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Historical Aerial Photography - Segment B9



Order Details

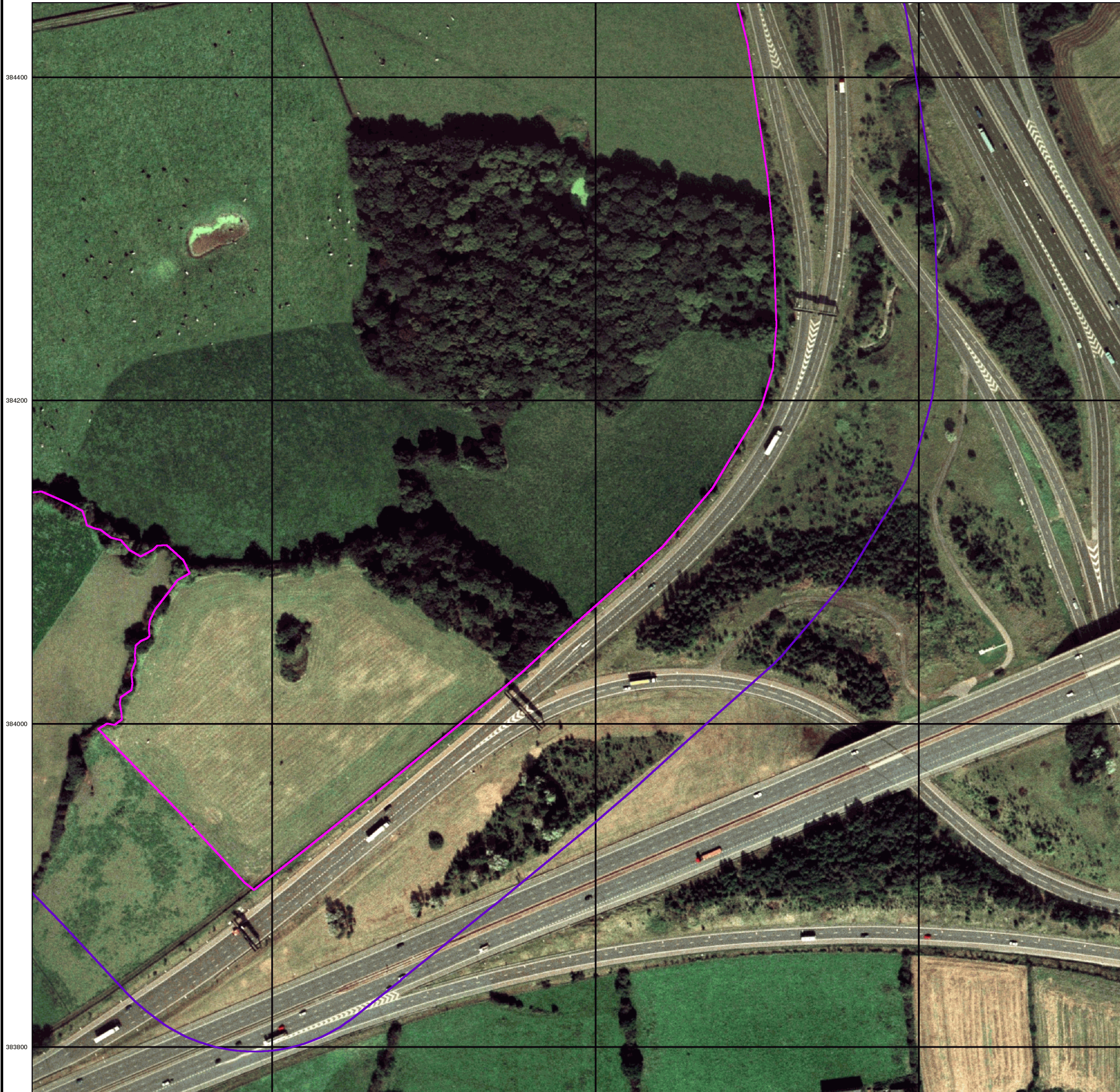
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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366000

366200

366400

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Historical Aerial Photography

Published 2000

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385000

385000

384800

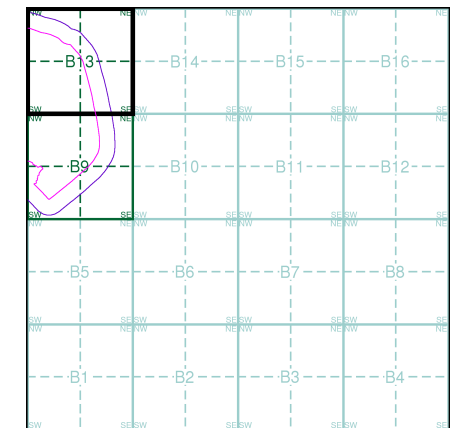
384800

384600

384600



Historical Aerial Photography - Segment B13



Order Details

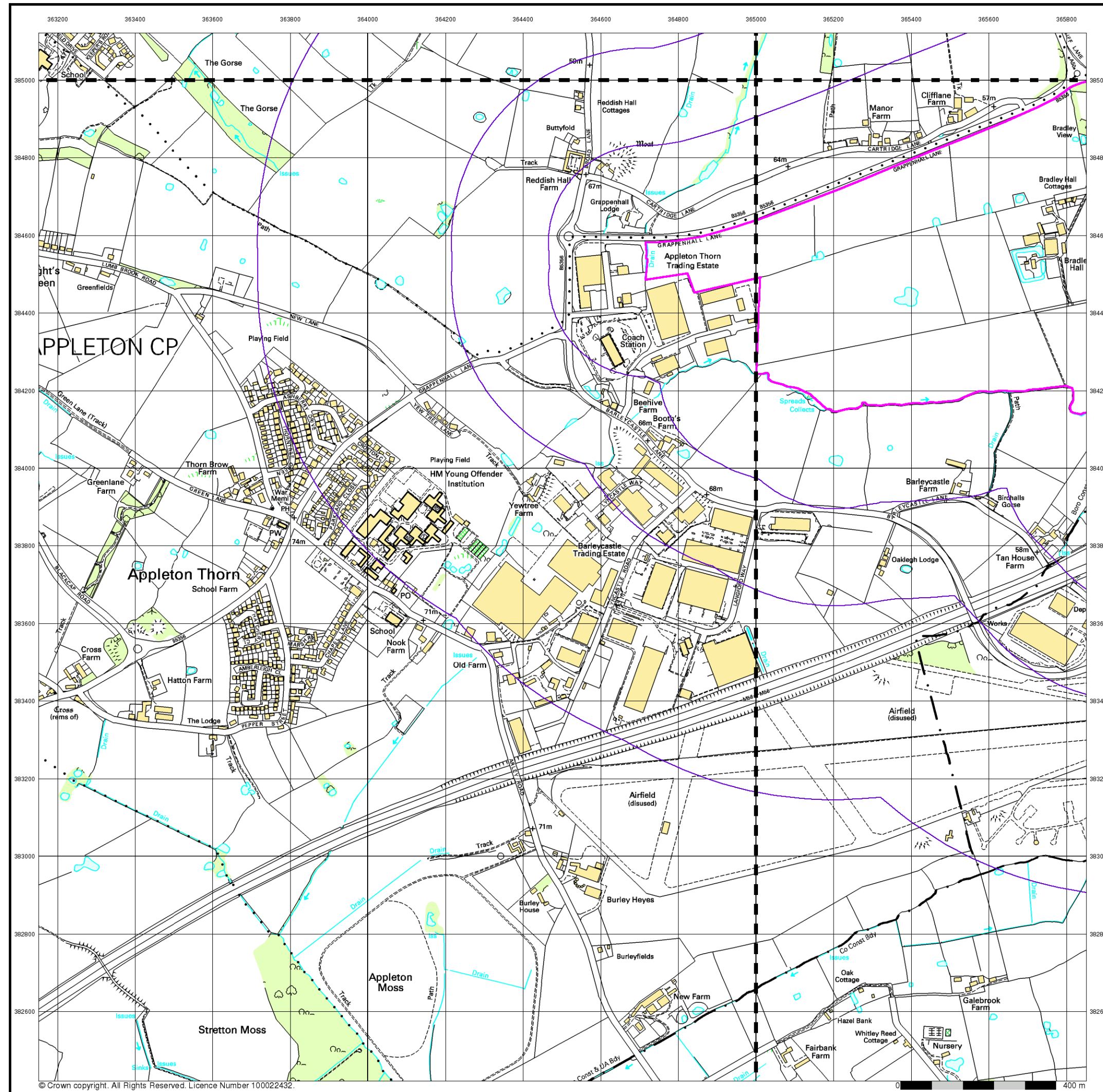
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 100

Site Details

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10k Raster Mapping

Published 2006

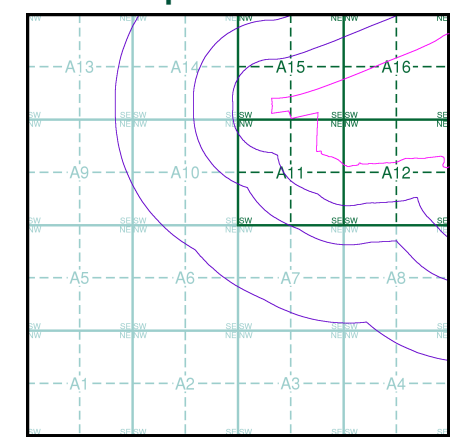
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SJ68NW	SJ68NE
2006	2006
1:10,000	1:10,000
SJ68SW	SJ68SE
2006	2006
1:10,000	1:10,000

Historical Map - Slice A



Order Details

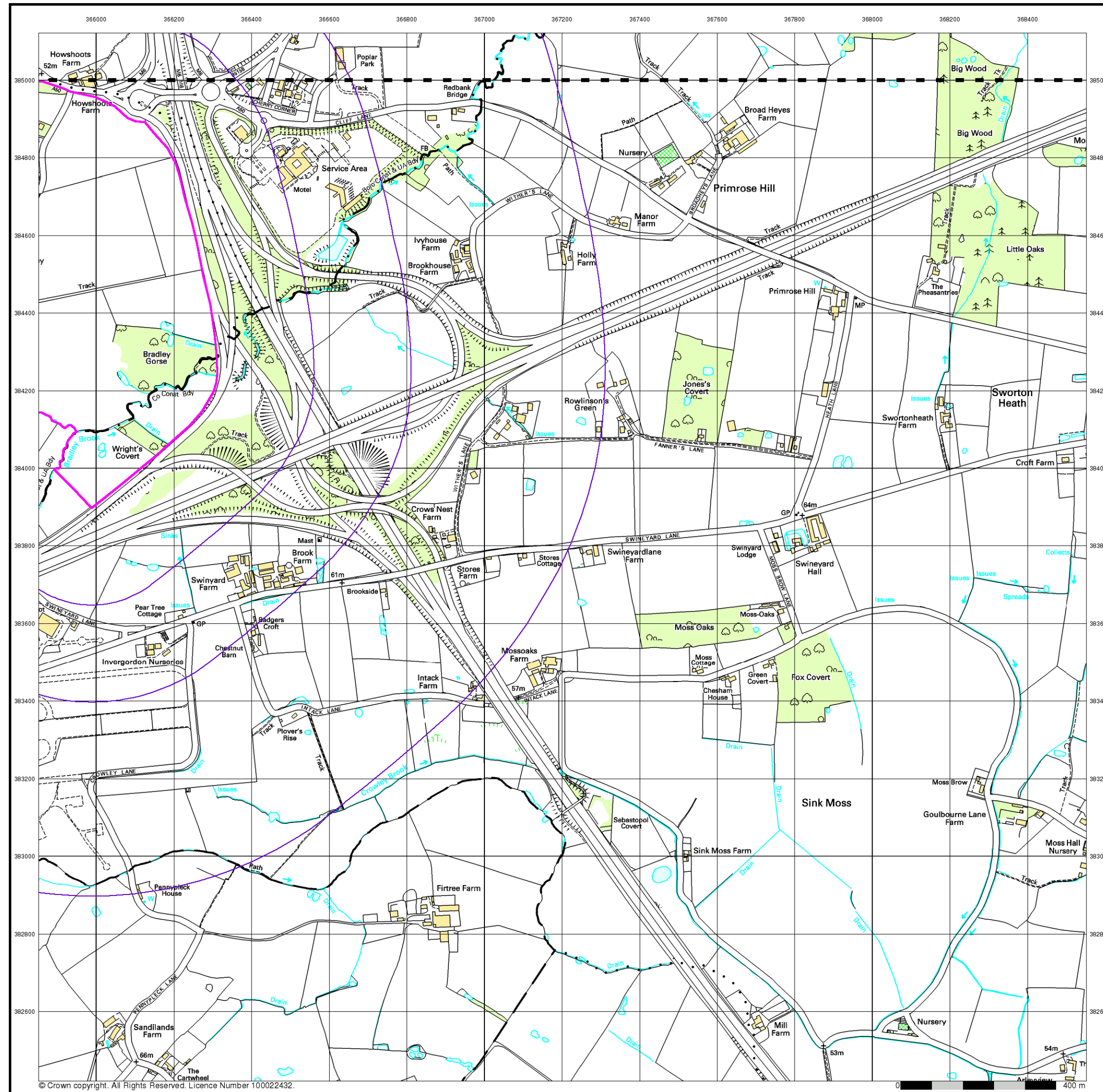
Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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10k Raster Mapping

Published 2006

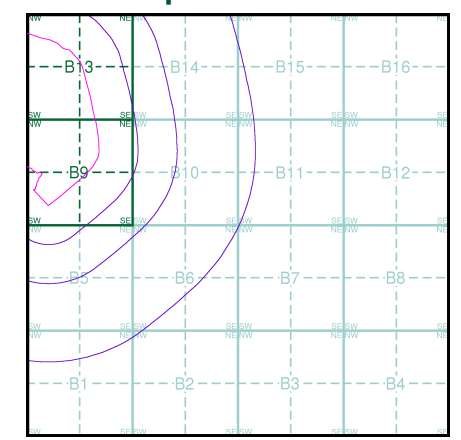
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SJ68NE	2006	1:10,000
SJ68SE	2006	1:10,000

Historical Map - Slice B



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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VectorMap Local

Published 2017

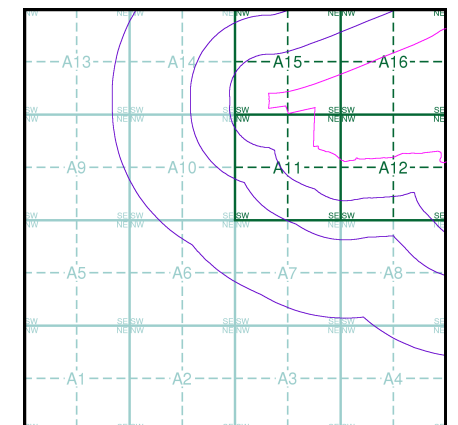
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SJ68NW 2017 Variable	SJ68NE 2017 Variable
SJ68SW 2017 Variable	SJ68SE 2017 Variable

Historical Map - Slice A

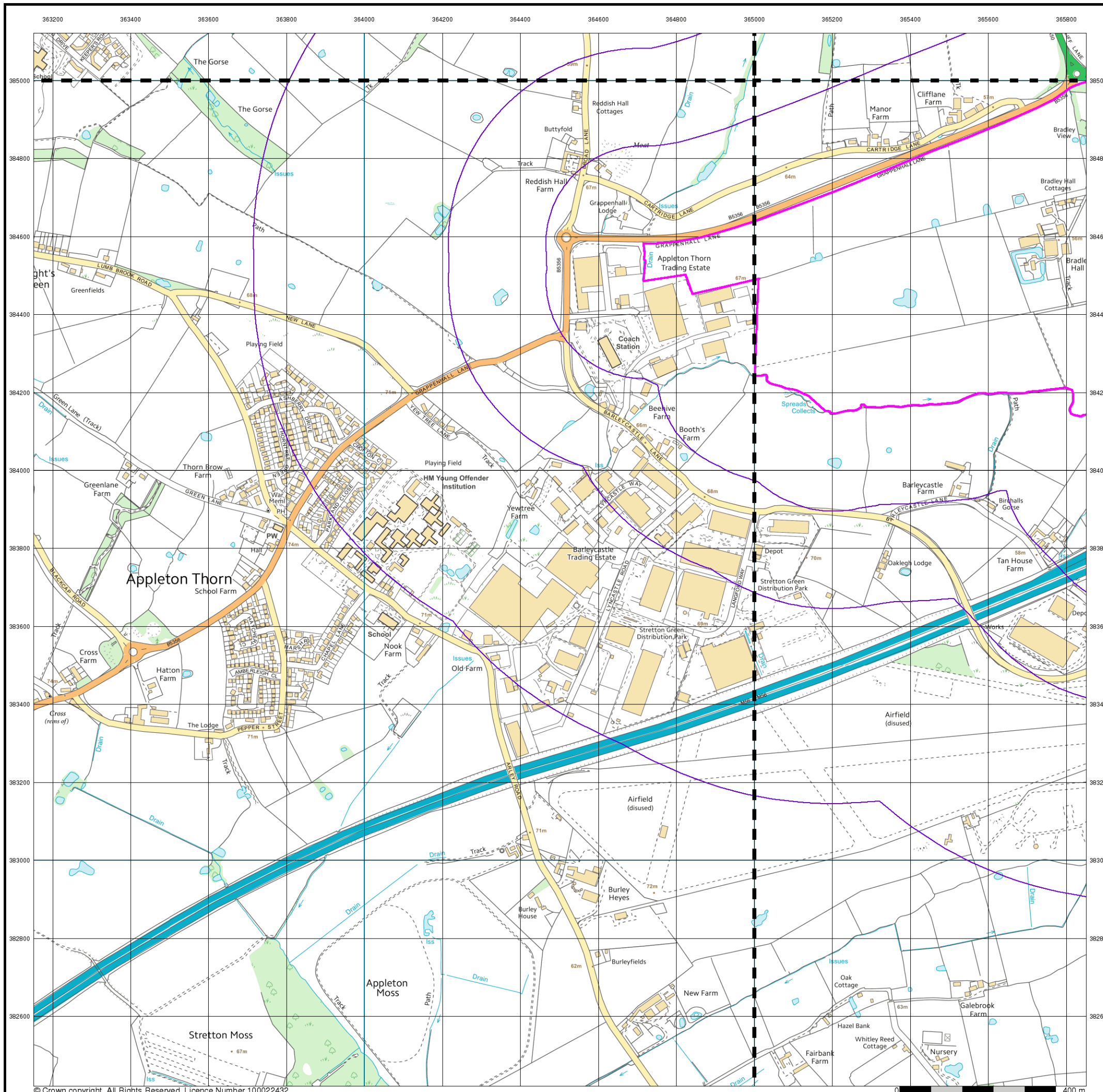


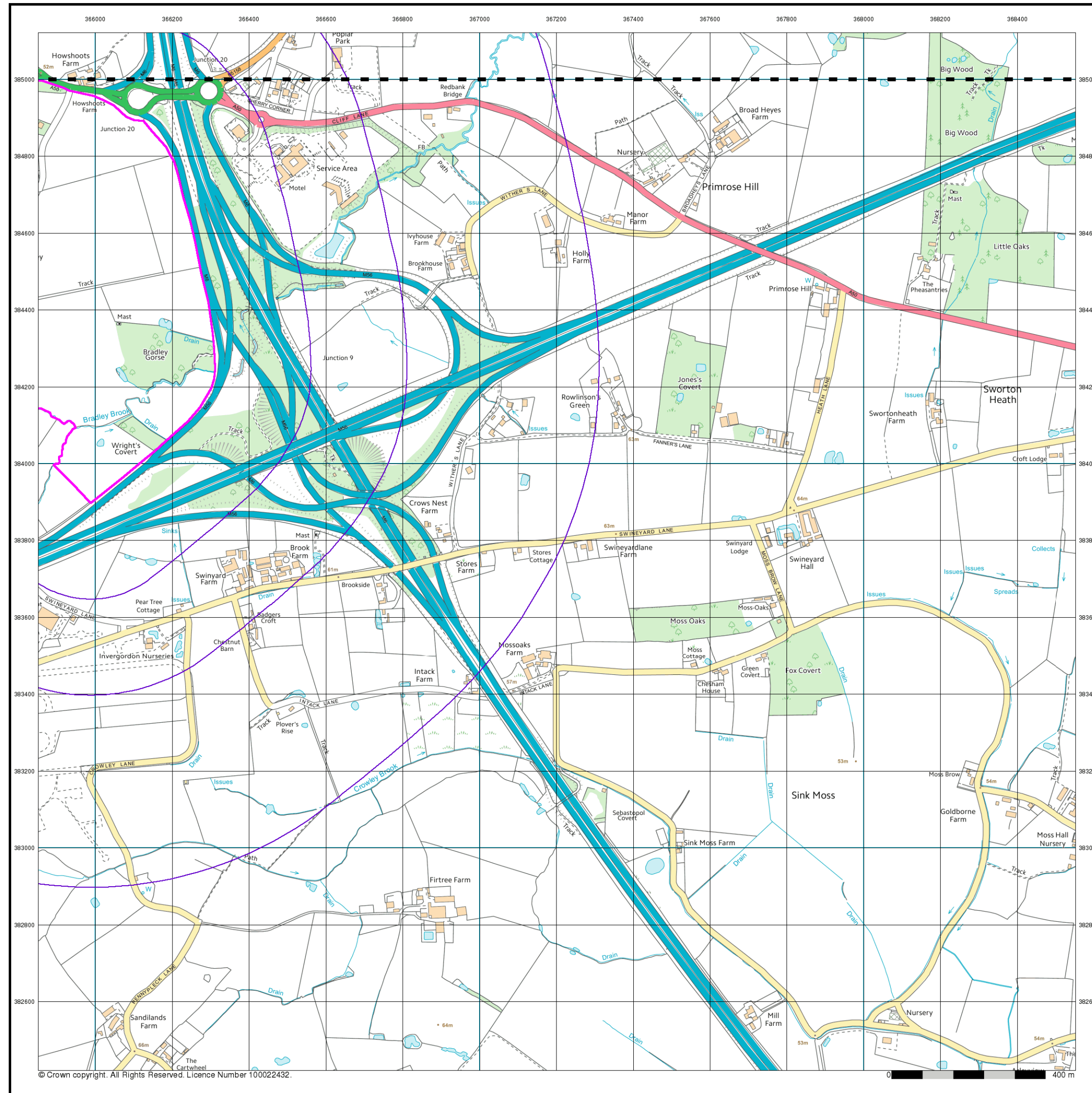
Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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VectorMap Local

Published 2017

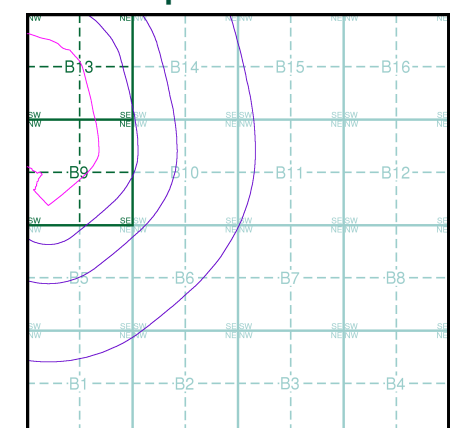
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

- - - - -
- SJ68NE |
- 2017 |
- Variable |
- - - - -
- SJ68SE |
- 2017 |
- Variable |
- - - - -

Historical Map - Slice B



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

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Appendix B: Envirocheck Report

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

135773225_1_1

Customer Reference:

1015524 - Warrington Interchange MP

National Grid Reference:

364910, 384200

Slice:

A

Site Area (Ha):

93.66

Search Buffer (m):

1000

Site Details:

Warrington Interchange Masterplan

WARRINGTON

WA4 4SR

Client Details:

Mr J Allen

Cundall

Partnership House

4th Floor

Regents Farm Road, Gosforth

Newcastle Upon Tyne

NE3 3AF

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	11
Hazardous Substances	13
Geological	14
Industrial Land Use	17
Sensitive Land Use	29
Data Currency	30
Data Suppliers	36
Useful Contacts	37

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Peter Brett Associates Copyright Notice

The cavity data presented has been extracted from the PBA enhanced version of the original DEFRA national cavity databases. PBA/DEFRA retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by PBA. In no event shall PBA/DEFRA or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3		3	1	
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4		1	1	
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4	Yes			
Pollution Incidents to Controlled Waters	pg 4		3	4	2
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
Substantiated Pollution Incident Register					
River Quality Chemistry Sampling Points					
Water Abstractions					
Water Industry Act Referrals					
Groundwater Vulnerability	pg 6	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 6	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 6	5	13	6	6

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 11	3	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 11			1	
Potentially Infilled Land (Water)	pg 11		5	10	20
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)	pg 13			1	
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents	pg 13			1	
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 14	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 14	Yes	Yes		Yes
BGS Recorded Mineral Sites	pg 15			1	
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District	pg 15	Yes	n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 15	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 15	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 17		10	34	40
Fuel Station Entries					
Points of Interest - Commercial Services	pg 24		10	14	12
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 27	1	3	2	2
Points of Interest - Public Infrastructure	pg 28	1	1		1
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 29	2			1
Areas of Unadopted Green Belt	pg 29	1			
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 29			1	
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (E)	0	1	365050 384250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (NE)	0	1	364950 384300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (NE)	0	1	365000 384300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16SE (NE)	0	1	365800 384650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15SW (NW)	0	1	364800 384450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A16SW (NE)	0	1	365250 384600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15SW (NW)	0	1	364750 384550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	0	1	366300 384198
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NE (NE)	0	1	365700 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (N)	0	1	364905 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (NE)	0	1	365050 384400
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A15SE (NE)	0	1	365050 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (E)	0	1	365000 384198
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (N)	3	1	364900 384400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	5	1	365250 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	17	1	365900 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	25	1	366300 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (NE)	43	1	364905 384198
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15NE (N)	55	1	365000 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A11NE (N)	56	1	364905 384350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	60	1	366150 383950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11NE (SE)	62	1	365000 384150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	75	1	365500 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SE (N)	88	1	365000 384750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	96	1	366300 384800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	98	1	365250 384900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A16NW (NE)	107	1	365400 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	115	1	366300 384850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15SW (N)	119	1	364700 384700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	121	1	366300 384000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (S)	131	1	364905 384100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (SE)	148	1	365500 383600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	160	1	366400 384050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	181	1	366450 384550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	182	1	366350 384900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	202	1	366450 384050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	220	1	366100 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(E)	220	1	366500 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SE (SE)	246	1	365050 383900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	266	1	366200 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15NE (N)	276	1	365000 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NE)	288	1	366250 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	308	1	366200 385200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	334	1	366250 385200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A15NE (N)	340	1	364905 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12SW (SE)	346	1	365200 383800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A15NE (N)	375	1	364900 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	377	1	365300 385200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NE)	400	1	366300 385250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (SE)	450	1	365600 383600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (SE)	452	1	365350 383600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14NE (NW)	485	1	364350 384900
1	Discharge Consents Operator: Mr G. Stokes Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Three Properties(Tanhouse Cottage) Barleycastle Lane, Appleton, Warrington, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016992285 Permit Version: 1 Effective Date: 12th July 1991 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Bradley Brook Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m	A12SE (E)	47	2	365800 384100
1	Discharge Consents Operator: Mr Paul And Mrs Lynda Johnson Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Three Properties(Tanhouse Cottage) Barleycastle Lane, Appleton, Warrington, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016992285 Permit Version: 1 Effective Date: 12th July 1991 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Bradley Brook Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m	A12SE (E)	47	2	365800 384100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: Barbara Woodward Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Three Properties(Tanhouse Cottage) Barleycastle Lane, Appleton, Warrington, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016992285 Permit Version: 1 Effective Date: 12th July 1991 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Bradley Brook Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m</p>	A12SE (E)	47	2	365800 384100
2	<p>Discharge Consents</p> <p>Operator: Janvier Limited Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Four Dwellings At Grappenhall Ridge, Broad Lane, Grappenhall, Warrington, Wa4 3hs Authority: Environment Agency, North West Region Catchment Area: River Mersey (Etherow) Reference: 016892237 Permit Version: 1 Effective Date: 30th January 2004 Issued Date: 30th January 2004 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Tributary Of Morris Brook Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A15NW (NW)	271	2	364570 384810
3	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Buildmix Location: Appleton Thorn Industrial Estate, Warrington, Wa4 4st Authority: Warrington Borough Council, Environmental Health Department Permit Reference: EP08/2 Dated: 16th July 2008 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement Status: Permitted Positional Accuracy: Manually positioned within the geographical locality</p>	A11NW (NW)	82	3	364694 384407
4	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Haulmark Equipment Ltd Location: Barley Castle Lane, Appleton Thorn, Warrington, Wa4 4rb Authority: Warrington Borough Council, Environmental Health Department Permit Reference: EP12/01 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG3/16 Mobile screening and crushing processes Status: Application Not Yet Authorised Positional Accuracy: Manually positioned to the address or location</p>	A11NW (W)	301	3	364712 384166
	<p>Nearest Surface Water Feature</p>	A16NE (NE)	0	-	365808 384976
5	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Private Sewage: Sewage Works And Septic Tanks Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Crude Sewage Note: Bradley Brook; Sewage Incident Date: 14th April 1996 Incident Reference: 96710760 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A11NW (NW)	88	2	364700 384400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Pollution Found Source Not Determined Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Morris Brook Incident Date: 26th November 1993 Incident Reference: 93742190 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A15SW (N)	112	2	364800 384700
7	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Private Sewage (Non-PLC): Sewerage Systems Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Crude Sewage Note: Bradley Brook; Sewage Incident Date: 23rd September 1996 Incident Reference: 96712078 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	A11NW (NW)	145	2	364600 384400
8	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Unknown Note: Bradley Brook Incident Date: 30th March 1995 Incident Reference: 95710651 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A8NE (SE)	273	2	365800 383700
9	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Bradley Brook Incident Date: 2nd September 1995 Incident Reference: 95712228 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A15NE (N)	281	2	364900 384900
10	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Bradley Brook; White Diesel Incident Date: 6th January 1993 Incident Reference: 93740021 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A11NW (W)	287	2	364700 384200
11	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Other Oil Note: Booths Farm Stream; Oil Film Incident Date: 14th December 1993 Incident Reference: 93742287 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m</p>	A11SW (SW)	335	2	364700 384100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	Pollution Incidents to Controlled Waters Property Type: Spillage; Accident In Transit Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Other Chemicals Note: Bradley Brook Incident Date: 15th September 1995 Incident Reference: 95712370 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (SE)	554	2	365300 383600
13	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Bradley Brook; Oil Incident Date: 19th November 1996 Incident Reference: 96712380 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A7NW (SW)	759	2	364600 383600
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 16 West Cheshire Scale: 1:100,000	A11NE (NE)	0	2	364905 384198
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A11NE (NE)	0	1	364905 384198
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A11NE (E)	0	1	365000 384198
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A11NE (NE)	0	1	364993 384310
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A11NE (E)	0	1	365000 384198
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
14	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A16NE (NE)	0	4	365813 384962
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 52.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (NW)	0	4	364714 384487

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 40.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (NW)	0	4	364719 384540
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 352.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	A12SE (SE)	0	4	365804 383824
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 408.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (E)	0	4	365652 384193
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 530.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A11NE (E)	1	4	365151 384161
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 577.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A11NE (NW)	2	4	364872 384264
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (E)	5	4	365651 384192
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 277.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (E)	7	4	365615 384040
23	OS Water Network Lines Watercourse Form: Marsh Watercourse Length: 15.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A11NE (E)	10	4	365144 384175
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 121.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (N)	105	4	364751 384687

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 35.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (NW)	107	4	364610 384610
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (NW)	110	4	364608 384604
27	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SW (NW)	115	4	364619 384643
28	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 60.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15SE (N)	138	4	364859 384739
29	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NE (N)	173	4	364897 384786
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 562.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NE (N)	187	4	364927 384811
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NE (N)	191	4	364919 384812
32	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 13.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NW (N)	312	4	364822 384909
33	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 8.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NW (N)	321	4	364801 384912

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 9.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NW (N)	321	4	364810 384915
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 61.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A15NW (N)	330	4	364810 384924
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 17.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A11SW (SW)	419	4	364629 384055
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 37.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A11SW (SW)	426	4	364632 384034
38	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 33.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (S)	600	4	364977 383589
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 81.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (S)	632	4	364991 383550
40	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 16.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A14SW (W)	684	4	364033 384474
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 994.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Crowley Brook Catchment Name: Mersey Primacy: 1	(SE)	910	4	365853 382942
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 149.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A4NE (SE)	960	4	365701 382982

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 282.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SE (NW)	964	4	363770 384765

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Macclesfield Borough Council - Has not been able to supply Landfill data		0	5	365412 383566
	Local Authority Landfill Coverage Name: Warrington Unitary Council - Has not been able to supply Landfill data		0	3	364905 384198
	Local Authority Landfill Coverage Name: Cheshire County Council - Has supplied landfill data		0	6	365412 383566
	Local Authority Landfill Coverage Name: Vale Royal Borough Council - Has supplied landfill data		911	7	365466 382911
44	Potentially Infilled Land (Non-Water) Bearing Ref: NW Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1992	A14NE (NW)	371	-	364412 384793
45	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A12NW (E)	4	-	365408 384164
46	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12NW (E)	11	-	365479 384160
47	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A11NE (E)	20	-	365074 384192
48	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1938	A15SW (NW)	113	-	364604 384593
49	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A12SW (E)	115	-	365425 384052
50	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	A11SE (SE)	298	-	365160 383851
51	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A12SW (SE)	303	-	365307 383855
52	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A11SW (SW)	337	-	364778 383993
53	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8NE (SE)	351	-	365816 383592
54	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1899	A11SW (W)	359	-	364673 384104
55	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1899	A11NW (W)	371	-	364627 384126
56	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NE (SE)	413	-	365741 383568
57	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A8NE (SE)	415	-	365594 383709
58	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A14NE (NW)	442	-	364324 384785
59	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8NE (SE)	454	-	365771 383500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
60	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8NW (SE)	539	-	365201 383607
61	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1899	A10NE (W)	646	-	364173 384136
62	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (SW)	742	-	364651 383590
63	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (S)	744	-	364751 383539
64	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (S)	765	-	364763 383512
65	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (SW)	772	-	364639 383563
66	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (S)	798	-	364746 383483
67	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7SE (S)	820	-	364931 383372
68	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7SE (S)	822	-	365141 383326
69	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8SW (SE)	829	-	365329 383326
70	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (S)	832	-	364631 383499
71	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8SE (SE)	848	-	365635 383128
72	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A10NW (W)	866	-	363930 384122
73	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7NW (SW)	924	-	364535 383447
74	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8SW (S)	946	-	365263 383202
75	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A7SW (S)	948	-	364579 383395
76	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8SW (SE)	967	-	365425 383113
77	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A8SW (S)	973	-	365221 383174
78	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	A6NE (SW)	973	-	364243 383636
79	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	A4NW (SE)	989	-	365459 383063

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
80	<p>Control of Major Accident Hazards Sites (COMAH)</p> <p>Name: Wardel Services Group (Aka Wdcl) Location: Appleton Thorn Trading Estate, Barley Castle Lane, APPLETON, WA4 4RD Reference: Not Supplied Type: Upper Tier Status: Record Ceased To Be Supplied Under COMAH Regulations Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	338	8	364863 383936
81	<p>Planning Hazardous Substance Consents</p> <p>Name: P C Downing & Sons (Haulage) Ltd Location: Barley Gate Lane, Appleton, Warrington, Cheshire, WA4 6RB Authority: Warrington Borough Council, Environmental and Regeneration Application Ref: Not Given Hazardous: Part C, Flammable Substance (Not in Parts A&B), Substances flammable in air above their Bpt, as a liquid or with gas at >1.4bar, amount held is >=25t Substance: air above their Bpt, as a liquid or with gas at >1.4bar, amount held is >=25t Maximum Quantity: 1200 Application date: 29th June 1994 Decision: Application revoked or cancelledCancelled Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	329	9	364844 383955

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Triassic Rocks (Undifferentiated)	A11NE (NE)	0	1	364905 384198
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NE (NE)	0	1	364905 384198
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (S)	0	1	364876 384000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A11SE (S)	183	1	364928 384017
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A15SW (NW)	202	1	364558 384707
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14SW (W)	728	1	363949 384517
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: <15 mg/kg	A6NW (SW)	959	1	364061 383715

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	BGS Recorded Mineral Sites Site Name: Buttyfold Farm Location: , Appleton Thorn, Warrington, Cheshire Source: British Geological Survey, National Geoscience Information Service Reference: 95247 Type: Opencast Status: Ceased Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Glaciofluvial Deposits, Devensian Commodity: Sand Positional Accuracy: Located by supplier to within 10m	A14NE (NW)	371	1	364417 384801
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	CBSCB Compensation District Description: In an area which may be affected by historic brine pumping (the Compensation District). The Law Society recommend that all property transactions should obtain a CON29M search. The CBSCB website: http://www.cheshirebrine.com/ has information regarding how to obtain a search and other information regarding the continuing functions of the Board. Contact details are included in the Useful Contacts section. Source: Cheshire Brine Subsidence Compensation Board (CBSCB)	A8NW (SE)	0	10	365410 383570
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (N)	0	1	364907 384227
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384221
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A15NE (N)	5	1	365000 385000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (SE)	183	1	365000 384019
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SE (S)	208	1	364928 384017
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NE (NE)	0	1	364905 384198
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A11NE (E)	0	1	365000 384198

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Mark Thompson Transport Ltd Location: Stretton Distribution Centre, Grappenhall Lane, Appleton, Warrington, WA4 4QT Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A15SW (NW)	47	-	364671 384531
83	<p>Contemporary Trade Directory Entries</p> <p>Name: Chris Walley Transport Ltd Location: Unit 1a, Stretton Distribution Centre, Grappenhall Lane, Appleton, Warrington, WA4 4QT Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A15SW (NW)	57	-	364661 384504
84	<p>Contemporary Trade Directory Entries</p> <p>Name: M Goundry Transport Location: Cliff Lane Farm, Cartridge Lane, Grappenhall, Warrington, Cheshire, WA4 4SH Classification: Road Haulage Services Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A16NW (NE)	56	-	365503 384896
85	<p>Contemporary Trade Directory Entries</p> <p>Name: C & L Autos Location: Grappenhall Lane, Appleton, Warrington, WA4 4QT Classification: Garage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11NW (NW)	70	-	364671 384433
85	<p>Contemporary Trade Directory Entries</p> <p>Name: Baldwins Crane Hire Ltd Location: Grappenhall Lane, Appleton, Warrington, WA4 4QT Classification: Crane Hire, Sales & Service Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11NW (NW)	91	-	364653 384421
86	<p>Contemporary Trade Directory Entries</p> <p>Name: Cargo Sped Ltd Location: Grappenhall La, Appleton, Warrington, Cheshire, WA4 4QT Classification: Freight Forwarders Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A15SW (NW)	86	-	364631 384594
87	<p>Contemporary Trade Directory Entries</p> <p>Name: M & S Transport Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11NE (N)	108	-	364897 384312
88	<p>Contemporary Trade Directory Entries</p> <p>Name: Star World Location: Grappenhall Lane, Appleton, Warrington, WA4 4QT Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A15SW (NW)	115	-	364603 384511
89	<p>Contemporary Trade Directory Entries</p> <p>Name: Howley Quay Motors Location: 4, Grappenhall Lane, Appleton, WARRINGTON, WA4 4QT Classification: Car Body Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11NW (NW)	164	-	364558 384444
90	<p>Contemporary Trade Directory Entries</p> <p>Name: M & S Transport Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11NW (W)	213	-	364760 384256
91	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Mot Centre Location: Barleycastle La, Appleton, Warrington, Cheshire, WA4 4RG Classification: Garage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A12SE (SE)	271	-	365669 383844

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
92	<p>Contemporary Trade Directory Entries</p> <p>Name: Bridgewater Contracts Ltd Location: Broad La, Grappenhall, Warrington, Cheshire, WA4 3HU Classification: Carpet, Curtain & Upholstery Cleaners Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A15NW (NW)	284	-	364570 384825
93	<p>Contemporary Trade Directory Entries</p> <p>Name: Haulmark Equipment Ltd Location: Haulmark Equipment, Barleycastle Lane, Warrington, WA4 4RB Classification: Machine Tools - Manufacturers & Distributors Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11NW (W)	293	-	364718 384172
94	<p>Contemporary Trade Directory Entries</p> <p>Name: T D G Location: Barley Castle Lane, Appleton, Warrington, WA4 4RG Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (SE)	318	-	365793 383647
94	<p>Contemporary Trade Directory Entries</p> <p>Name: Tdg Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A8NE (SE)	318	-	365793 383647
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Beeline Transport (Northern) Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4RD Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	333	-	364842 383952
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Tibbett & Britten Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4RD Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	333	-	364842 383952
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Stoford Transport Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4RD Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	333	-	364842 383952
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Taylors Of Martley Haulage Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4RD Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	333	-	364842 383952
95	<p>Contemporary Trade Directory Entries</p> <p>Name: Stoford Transport Location: Lyncastle Rd, Barleycastle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SE (S)	333	-	364842 383952
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Combined Chemical Services (Uk) Ltd Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Chemicals - Distributors & Wholesalers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	360	-	364702 384047
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Hewden Stuart Crane Hire Ltd Location: Lyncastle Road, Barley Castle Lane, Appleton, Warrington, WA4 4RJ Classification: Crane Hire, Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	360	-	364702 384047

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Alpine Cleaning Services Location: Unit 3E, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4ST Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	370	-	364722 384003
96	<p>Contemporary Trade Directory Entries</p> <p>Name: G T Cars Ltd Location: Unit 3ga, Lyncastle Way, Barleycastle Lane, Appleton, WARRINGTON, WA4 4ST Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	373	-	364710 384013
96	<p>Contemporary Trade Directory Entries</p> <p>Name: T R Bitz Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, WARRINGTON, WA4 4ST Classification: Classic Car Specialists Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	373	-	364710 384013
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Vehicle Restorations Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Car Body Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	382	-	364704 384006
96	<p>Contemporary Trade Directory Entries</p> <p>Name: Print My Tablecloth Location: Unit 3ga, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Printers Textile Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	382	-	364704 384006
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Cheshire Commercial Vehicle Repairs Ltd Location: Unit 3c, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	363	-	364767 383969
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Light Freight Commercials Ltd Location: Unit 3c, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	363	-	364767 383969
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Commercial Engineering Ltd Location: Unit 3C, Lyncastle Way, Barley Castle Lane, Appleton, Warrington, WA4 4ST Classification: Commercial Vehicle Bodybuilders & Repairers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	363	-	364767 383969
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Commercial Engineering Location: Unit 3c, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Commercial Vehicle Bodybuilders & Repairers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	363	-	364767 383969
97	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Commercial Engineering Ltd Location: Unit 3c, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	363	-	364767 383969
98	<p>Contemporary Trade Directory Entries</p> <p>Name: Warrington Commercials Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Classification: Commercial Vehicle Bodybuilders & Repairers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SE (S)	388	-	364847 383887

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
98	<p>Contemporary Trade Directory Entries</p> <p>Name: C M S Danskin Acoustics Location: Unit 2 Lyncastle Road, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4SN Classification: Insulation Materials Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A11SW (S)	411	-	364805 383883
99	<p>Contemporary Trade Directory Entries</p> <p>Name: Maxi Haulage Ltd Location: Stretton Green Distribution Park, Langford Way, Appleton, Warrington, WA4 4TQ Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SE (S)	416	-	364997 383780
100	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Location: Stretton Green Distribution Park, Langford Way, Appleton, Warrington, Cheshire, WA4 4TQ Classification: Freight Forwarders Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SE (S)	427	-	364919 383815
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Fast Cash 4 Scrap Cars Warrington Aeg Location: Lyncastle Way, Warrington, Cheshire, WA4 4ST Classification: Car Breakers & Dismantlers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A11SW (SW)	463	-	364669 383924
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Zenith Logistics Services Uk Ltd Location: Lyncastle Way, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4ST Classification: Distribution Services Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A11SW (SW)	463	-	364669 383924
101	<p>Contemporary Trade Directory Entries</p> <p>Name: All Seasons Groundcare Location: Unit 4d, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4ST Classification: Agricultural Machinery - Sales & Service Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A11SW (SW)	463	-	364669 383924
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Specialist Waste Recycling Location: 1, Asher Court, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Reclaiming - Waste Products Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	489	-	364644 383912
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Bowman Specialised Liquids Ltd Location: 1 Asher Court, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	490	-	364642 383912
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Branded Tablecloths Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Printers Textile Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A11SW (SW)	501	-	364636 383904
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Caldwell Filtration Ltd Location: 3d, Asher Court, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4ST Classification: Wire Products - Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	501	-	364636 383904
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Clean Print Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Printers Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A11SW (SW)	501	-	364636 383904

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Acrypol Products Ltd Location: 4, Asher Court, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Waterproof Material Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	508	-	364631 383899
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Y2k Coatings Ltd Location: 4, Asher Court, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4ST Classification: Aviation Engineers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	508	-	364631 383899
101	<p>Contemporary Trade Directory Entries</p> <p>Name: Fairbrothers Ltd Location: Asher Court, Lyncastle Way, Barleycastle La, Appleton, Warrington, Cheshire, WA4 4ST Classification: Bus & Coach Operators & Stations Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A11SW (SW)	508	-	364644 383885
102	<p>Contemporary Trade Directory Entries</p> <p>Name: Curtis Holt Tool Bank Location: Toolbank House, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Builders' Tools & Equipment Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	474	-	364620 383966
102	<p>Contemporary Trade Directory Entries</p> <p>Name: Toolbank Location: Toolbank House, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Builders' Tools & Equipment Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	474	-	364620 383966
103	<p>Contemporary Trade Directory Entries</p> <p>Name: Express Cargo Forwarding Ltd Location: Unit 6/9, Stretton Green Distribution Park, Langford Way, Appleton, Warrington, WA4 4TQ Classification: Freight Forwarders Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SE (S)	475	-	364888 383774
104	<p>Contemporary Trade Directory Entries</p> <p>Name: Skelton Transport Group Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A11SW (SW)	502	-	364713 383834
105	<p>Contemporary Trade Directory Entries</p> <p>Name: Chemi Clean Location: Unit 3g, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Cleaning Materials & Equipment Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A11SW (SW)	540	-	364561 383934
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Appleton Location: Eddie Stobart, Stretton Green Distribution Park, Langford Way, Warrington, WA4 4TQ Classification: Freight Forwarders Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (S)	580	-	365007 383599
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Eddie Stobart Ltd Location: Eddie Stobart, Stretton Green Distribution Park, Langford Way, Warrington, WA4 4TQ Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NE (S)	580	-	365007 383599

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
106	<p>Contemporary Trade Directory Entries</p> <p>Name: Eddie Stobart Ltd Location: Eddie Stobart, Stretton Green Distribution Park, Langford Way, Warrington, WA4 4TQ Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NE (S)	580	-	365007 383599
107	<p>Contemporary Trade Directory Entries</p> <p>Name: Cape Industrial Services Ltd Location: Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	583	-	364573 383850
107	<p>Contemporary Trade Directory Entries</p> <p>Name: Cape Plant Ltd Location: Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Classification: Industrial Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	583	-	364573 383850
108	<p>Contemporary Trade Directory Entries</p> <p>Name: Rentokil Pest Control Location: Barleycastle Trad Est, Warrington, Cheshire, WA4 4RD Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A11SW (SW)	591	-	364619 383795
109	<p>Contemporary Trade Directory Entries</p> <p>Name: Ryder Ltd Location: Carlin Buildings, Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4TG Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A11SW (SW)	603	-	364501 383909
110	<p>Contemporary Trade Directory Entries</p> <p>Name: Eddie Stobart Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4SN Classification: Freight Forwarders Status: Active Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NW (SW)	655	-	364644 383696
110	<p>Contemporary Trade Directory Entries</p> <p>Name: Greenalls Services Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Distribution Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NW (SW)	681	-	364636 383670
111	<p>Contemporary Trade Directory Entries</p> <p>Name: Wincanton Logistics Location: Lyncastle Road, Barley Castle Lane, Appleton, Warrington, WA4 4SN Classification: Distribution Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (S)	721	-	364817 383532
112	<p>Contemporary Trade Directory Entries</p> <p>Name: Baldwins Industrial Services Plc Location: Lyncastle Road, Barley Castle Lane, Appleton, Warrington, WA4 4SN Classification: Crane Hire, Sales & Service Status: Inactive Positional Accuracy: Automatically positioned in the proximity of the address</p>	A7NW (SW)	731	-	364613 383625
113	<p>Contemporary Trade Directory Entries</p> <p>Name: S J Tabner Ltd Location: Unit 10 Appleton Thorn Trading Estate, Lyncastle Road, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	774	-	364439 383714
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Able Installation & Service Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4SN Classification: Electrical Engineers Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	797	-	364559 383582

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
114	<p>Contemporary Trade Directory Entries</p> <p>Name: S I G Construction Accessories Location: Unit 2,Warrington South Distribution Park, Appleton, Warrington, Cheshire, WA4 4SN Classification: Builders' Merchants Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	797	-	364559 383582
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Kuehne + Nagel Ltd Location: Whitehouse Industrial E,Lyncastle Road, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A7NW (SW)	800	-	364605 383550
115	<p>Contemporary Trade Directory Entries</p> <p>Name: S I G Geotechnical Location: Lyncastle Rd,Barleycastle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Builders' Merchants Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	811	-	364608 383535
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Rentokil Specialist Hygiene Location: Lyncastle Rd,Barleycastle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Commercial Cleaning Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	811	-	364608 383535
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Currie European Transport Location: Lyncastle Road, Barleycastle Lane, Appleton, WARRINGTON, WA4 4SN Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	811	-	364608 383535
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Mark Thompson Location: Lyncastle Rd,Barleycastle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	811	-	364608 383535
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Rentokil Property Care Location: Lyncastle rd Barleycastle la, Appleton, Warrington, Cheshire, WA4 4SN Classification: Damp & Dry Rot Control Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	811	-	364608 383535
115	<p>Contemporary Trade Directory Entries</p> <p>Name: Rentokil Pest Control Location: Lyncastle Rd,Barleycastle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A7NW (SW)	811	-	364608 383535
116	<p>Contemporary Trade Directory Entries</p> <p>Name: Bluegroup Location: Unit 3c, Appleton Thorn Trading Estate, Lyncastle Road, Warrington, WA4 4SN Classification: Recycling Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	841	-	364427 383631
116	<p>Contemporary Trade Directory Entries</p> <p>Name: R J Edwards & Sons Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	849	-	364393 383654
117	<p>Contemporary Trade Directory Entries</p> <p>Name: Lowndes & Sons Transport Ltd Location: Lyncastle Rd,Barley Castle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location</p>	A7NW (SW)	918	-	364544 383448

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	<p>Contemporary Trade Directory Entries</p> <p>Name: F B Atkins & Sons Ltd Location: Lyncastle Road, Barley Castle Lane, Appleton, Warrington, WA4 4SN Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A7NW (SW)	920	-	364559 383438
118	<p>Contemporary Trade Directory Entries</p> <p>Name: Cheaper Utilities Location: 30a, Ashberry Drive, Appleton Thorn, Warrington, WA4 4QS Classification: Gas Suppliers Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A10SW (W)	937	-	363890 384044
119	<p>Contemporary Trade Directory Entries</p> <p>Name: Elebert Bros Ltd Location: 16, Ashberry Drive, Appleton Thorn, Warrington, WA4 4QS Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A10NW (W)	951	-	363827 384150
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Euroform Products Ltd Location: Unit 2 Lyncastle Road, Barleycastle Lane, Appleton, Warrington, Cheshire, WA4 4SN Classification: Plaster Manufacturers & Suppliers Status: Active Positional Accuracy: Manually positioned to the address or location</p>	A6NE (SW)	956	-	364339 383557
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Recycling Systems (Europe) Ltd Location: Lyncastle Rd, Barley Castle La, Appleton, Warrington, Cheshire, WA4 4SN Classification: Recycling Centres Status: Inactive Positional Accuracy: Manually positioned within the geographical locality</p>	A6NE (SW)	967	-	364338 383542
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Arleys Angels Location: 2, Old Farm, Burley Lane, Appleton, Warrington, WA4 4RP Classification: Cleaning Services - Domestic Status: Active Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	972	-	364347 383527
120	<p>Contemporary Trade Directory Entries</p> <p>Name: Arleys Angels Ltd Location: 2, Old Farm, Burley Lane, Appleton, Warrington, Cheshire, WA4 4RP Classification: Cleaning Services - Domestic Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	A6NE (SW)	972	-	364347 383527
121	<p>Contemporary Trade Directory Entries</p> <p>Name: Maxi Haulage Location: Plot B, Priory Works, Lyncastle Rd, Barleycastle La, Appleton, Warrington, Cheshire, WA4 4RE Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	A6SE (SW)	995	-	364468 383405
122	<p>Points of Interest - Commercial Services</p> <p>Name: R J Edwards & Sons Ltd Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A15SE (N)	19	11	364900 384447
123	<p>Points of Interest - Commercial Services</p> <p>Name: Mark Thompson Transport Ltd Location: Stretton Distribution Centre, Grappenhall Lane, Appleton, Warrington, WA4 4QT Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A15SW (NW)	47	11	364671 384531
123	<p>Points of Interest - Commercial Services</p> <p>Name: Star World Location: Unit 4a Stretton Distribution Centre, Grappenhall Lane, Appleton, Warrington, WA4 4QT Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A15SW (NW)	114	11	364604 384506

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
124	Points of Interest - Commercial Services Name: M Goundry Transport Location: Cliff Lane Farm, Cartridge Lane, Grappenhall, Warrington, WA4 4SH Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A16NW (NE)	56	11	365503 384896
125	Points of Interest - Commercial Services Name: Mark Thompson Transport Location: Stretton Distribution Centre, Grappenhall Lane, Appleton, Warrington, WA4 4QT Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11NW (NW)	70	11	364671 384433
125	Points of Interest - Commercial Services Name: C & L Autos Location: Grappenhall Lane, Appleton, Warrington, WA4 4QT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11NW (NW)	70	11	364671 384433
126	Points of Interest - Commercial Services Name: M & S Transport Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11NE (N)	108	11	364897 384311
127	Points of Interest - Commercial Services Name: Appleton MOT Centre Location: Airfield House, Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11NW (NW)	198	11	364744 384281
127	Points of Interest - Commercial Services Name: M & S Transport Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11NW (W)	213	11	364760 384256
127	Points of Interest - Commercial Services Name: M & S Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11NW (W)	214	11	364759 384256
128	Points of Interest - Commercial Services Name: Norbert Dentressangle Location: Barleycastle Lane, Appleton, Warrington, WA4 4RG Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NE (SE)	318	11	365793 383647
129	Points of Interest - Commercial Services Name: Grappenhall Motor Services Location: Unit 3b Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	362	11	364786 383955
129	Points of Interest - Commercial Services Name: Grappenhall Motor Company Location: Unit 3b Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	363	11	364785 383954
130	Points of Interest - Commercial Services Name: Appleton Commercial Engineering Ltd Location: Unit 3c Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	363	11	364767 383969
130	Points of Interest - Commercial Services Name: Cheshire Commercial Vehicle Repairs Ltd Location: Unit 3c Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	363	11	364767 383968

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
130	Points of Interest - Commercial Services Name: T R Bitz Location: Unit 3g Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	373	11	364710 384013
130	Points of Interest - Commercial Services Name: T R Bitz Location: Unit 3g Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	373	11	364710 384013
130	Points of Interest - Commercial Services Name: Appleton Vehicle Restorations Location: Unit 3g Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	374	11	364710 384012
130	Points of Interest - Commercial Services Name: G T Cars Ltd Location: Unit 3ga Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SW (SW)	374	11	364710 384012
130	Points of Interest - Commercial Services Name: Barley Castle Salvage Location: Unit 3g Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A11SW (SW)	374	11	364710 384012
130	Points of Interest - Commercial Services Name: Light Freight Commercials Ltd Location: Unit 3g Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11SW (SW)	400	11	364693 383993
131	Points of Interest - Commercial Services Name: Warrington Commercials Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SE (S)	389	11	364847 383887
132	Points of Interest - Commercial Services Name: Maxi Haulage Ltd Location: Stretton Green Distribution Park, Langford Way, Appleton, Warrington, WA4 4TQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11SE (S)	417	11	364997 383780
133	Points of Interest - Commercial Services Name: Express Cargo Forwarding Ltd Location: Unit 3-9, Stretton Green Distrbion Park, Warrington, Cheshire, WA4 4TQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A11SE (S)	475	11	364888 383774
134	Points of Interest - Commercial Services Name: Rhodar Ltd Location: 7 Asher Court Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A11SW (SW)	537	11	364618 383870
134	Points of Interest - Commercial Services Name: Bagnall (UK) Ltd Location: 8 Asher Court Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A11SW (SW)	537	11	364622 383866

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
134	<p>Points of Interest - Commercial Services</p> <p>Name: Bagnall UK Ltd Location: 7 Asher Court Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location</p>	A11SW (SW)	537	11	364618 383870
134	<p>Points of Interest - Commercial Services</p> <p>Name: Bagnall UK Ltd Location: 7 Asher Court Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location</p>	A11SW (SW)	537	11	364618 383870
134	<p>Points of Interest - Commercial Services</p> <p>Name: Thermac Location: Lexia House Lyncastle Way, Barleycastle Lane, Appleton, Warrington, WA4 4ST Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location</p>	A11SW (SW)	612	11	364594 383789
135	<p>Points of Interest - Commercial Services</p> <p>Name: Eddie Stobart Ltd Location: Stretton Green Distribution Park, Langford Way, Appleton, Warrington, WA4 4TQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A7NE (S)	577	11	365011 383600
135	<p>Points of Interest - Commercial Services</p> <p>Name: Appleton Location: Stretton Green Distribution Park, Langford Way, Appleton, Warrington, WA4 4TQ Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A7NE (S)	578	11	365011 383600
136	<p>Points of Interest - Commercial Services</p> <p>Name: Currie European Transport Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A7NW (SW)	811	11	364608 383535
136	<p>Points of Interest - Commercial Services</p> <p>Name: Currie European Transport Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A7NW (SW)	812	11	364607 383534
137	<p>Points of Interest - Commercial Services</p> <p>Name: R J Edwards & Sons Ltd Location: Lyncastle Road, Barleycastle Lane, Appleton, Warrington, WA4 4SN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A6NE (SW)	850	11	364392 383654
138	<p>Points of Interest - Commercial Services</p> <p>Name: Bluegroup Location: Appleton Thorn Trading Estate, Appleton, Warrington, WA4 4SN Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location</p>	A6NE (SW)	966	11	364319 383562
139	<p>Points of Interest - Commercial Services</p> <p>Name: Maxi Haulage Location: Plot B, Priory Works, Lyncastle Rd, Barleycastle La, Appleton, Warrington, Cheshire, WA4 4RE Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location</p>	A6SE (SW)	995	11	364468 383405
140	<p>Points of Interest - Manufacturing and Production</p> <p>Name: H Sinker & Sons Location: Bradley Hall Farm, Cliff Lane, Grappenhall, Warrington, WA4 4SL Category: Farming Class Code: Livestock Farming Positional Accuracy: Positioned to address or location</p>	A16SE (E)	0	11	365713 384532

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
141	Points of Interest - Manufacturing and Production Name: Tank Location: WA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A11NW (N)	39	11	364833 384415
142	Points of Interest - Manufacturing and Production Name: J M Cross & Partners Location: Cliff Lane Farm, Cartridge Lane, Grappenhall, Warrington, WA4 4SH Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A16NW (NE)	55	11	365503 384895
142	Points of Interest - Manufacturing and Production Name: J M Cross & Partners Location: Cliff Lane Farm, Cartridge Lane, Grappenhall, Warrington, WA4 4SH Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A16NW (NE)	56	11	365503 384896
143	Points of Interest - Manufacturing and Production Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	371	11	365778 383592
143	Points of Interest - Manufacturing and Production Name: Works Location: WA4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	381	11	365765 383589
144	Points of Interest - Manufacturing and Production Name: Tank Location: WA4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A7NW (S)	774	11	364822 383468
145	Points of Interest - Manufacturing and Production Name: Tank Location: CW9 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A4NE (SE)	903	11	365723 383035
146	Points of Interest - Public Infrastructure Name: Slurry Lagoon Location: WA4 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A16SE (NE)	0	11	365758 384600
147	Points of Interest - Public Infrastructure Name: Coach Station Location: WA4 Category: Public Transport, Stations and Infrastructure Class Code: Bus and Coach Stations, Depots and Companies Positional Accuracy: Positioned to an adjacent address or location	A11NW (NW)	168	11	364650 384332
148	Points of Interest - Public Infrastructure Name: Stretton Airfield (Disused) Location: WA4 Category: Air Class Code: Airports and Landing Strips Positional Accuracy: Positioned to address or location	A7SE (S)	896	11	365146 383252

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
149	Areas of Adopted Green Belt Authority: Warrington Borough Council Plan Name: Core Strategy Status: Adopted Plan Date: 21st July 2014	A11NE (NE)	0	14	364905 384198
150	Areas of Adopted Green Belt Authority: Macclesfield Borough Council (now part of Cheshire East Council) Plan Name: Macclesfield Borough Local Plan Status: Adopted Plan Date: 8th January 2004	A8NW (SE)	0	13	365413 383564
151	Areas of Adopted Green Belt Authority: Vale Royal Borough Council (now part of Cheshire West and Chester Council) Plan Name: Vale Royal Borough Council Local Plan - First Review Alteration Status: Adopted Plan Date: 16th June 2006	A4NW (SE)	909	15	365468 382914
152	Areas of Unadopted Green Belt Authority: Cheshire East Council, Planning Department Plan Name: Cheshire East Local Plan Strategy Status: Submission Draft Plan Date: 20th May 2014	A8NW (SE)	0	16	365413 383564
153	Nitrate Vulnerable Zones Name: River Weaver (Dane To Frodsham) Nvz Description: Surface Water Source: Environment Agency, Head Office	A6NE (SW)	385	17	364350 383650

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Cheshire East Council - Environmental Health Department Macclesfield Borough Council (now part of Cheshire East Council) - Health and Public Safety Warrington Borough Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Community Services Directorate Cheshire West and Chester Council - Environmental Health Department	April 2014 July 2008 March 2015 November 2008 November 2013	Annually Not Applicable Annually Not Applicable Annually
Discharge Consents Environment Agency - North West Region	April 2017	Quarterly
Enforcement and Prohibition Notices Environment Agency - North West Region	March 2013	As notified
Integrated Pollution Controls Environment Agency - North West Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control Environment Agency - North West Region	April 2017	Quarterly
Local Authority Integrated Pollution Prevention And Control Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Local Authority Pollution Prevention and Controls Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Local Authority Pollution Prevention and Control Enforcements Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Nearest Surface Water Feature Ordnance Survey	May 2017	
Pollution Incidents to Controlled Waters Environment Agency - North West Region	January 2000	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - North West Region	March 2013	As notified
Prosecutions Relating to Controlled Waters Environment Agency - North West Region	March 2013	As notified
Registered Radioactive Substances Environment Agency - North West Region	January 2015	
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually

Agency & Hydrological	Version	Update Cycle
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - North West Region - South Area	April 2017	Quarterly
Water Abstractions Environment Agency - North West Region	April 2017	Quarterly
Water Industry Act Referrals Environment Agency - North West Region	April 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	July 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2017	Quarterly
Flood Defences Environment Agency - Head Office	August 2017	Quarterly
OS Water Network Lines Ordnance Survey	April 2017	6 Weekly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	May 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - North West Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North West Region - South Area	May 2017	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North West Region - South Area	May 2017	Quarterly
Local Authority Landfill Coverage Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department	February 2005 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	March 2017	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Cheshire West and Chester Council - Planning Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) Macclesfield Borough Council (now part of Cheshire East Council) - Planning Department Cheshire East Council - Planning Department Cheshire County Council (now part of Cheshire East Council) - Planning Department Warrington Borough Council - Environmental and Regeneration	April 2016 August 2009 December 2008 February 2016 July 2008 June 2016	Annually Not Applicable Not Applicable Annually Annual Rolling Update Annual Rolling Update
Planning Hazardous Substance Consents Cheshire West and Chester Council - Planning Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) Macclesfield Borough Council (now part of Cheshire East Council) - Planning Department Cheshire East Council - Planning Department Cheshire County Council (now part of Cheshire East Council) - Planning Department Warrington Borough Council - Environmental and Regeneration	April 2016 August 2009 December 2008 February 2016 July 2008 June 2016	Annually Not Applicable Not Applicable Annually Annual Rolling Update Annual Rolling Update
Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2017	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	May 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	December 2016	Quarterly
Points of Interest - Education and Health PointX	December 2016	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2016	Quarterly
Points of Interest - Public Infrastructure PointX	December 2016	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2016	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	May 2017	Bi-Annually
Areas of Adopted Green Belt Macclesfield Borough Council (now part of Cheshire East Council) Vale Royal Borough Council (now part of Cheshire West and Chester Council) Warrington Borough Council	May 2017 May 2017 May 2017	As notified As notified As notified
Areas of Unadopted Green Belt Cheshire East Council - Planning Department Macclesfield Borough Council (now part of Cheshire East Council) Vale Royal Borough Council (now part of Cheshire West and Chester Council) Warrington Borough Council	May 2017 May 2017 May 2017 May 2017	As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	January 2017	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	June 2017	Bi-Annually
Marine Nature Reserves Natural England	January 2017	Bi-Annually
National Nature Reserves Natural England	January 2017	Bi-Annually
National Parks Natural England	February 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2017 October 2015	Bi-Annually Annually
Ramsar Sites Natural England	January 2017	Bi-Annually
Sites of Special Scientific Interest Natural England	January 2017	Bi-Annually
Special Areas of Conservation Natural England	January 2017	Bi-Annually
Special Protection Areas Natural England	January 2017	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	Warrington Borough Council - Environmental Health Department Technical Services, Palmyra House, Palmyra Square North, North Warrington, Cheshire, WA1 1JN	Telephone: 01925 444400 Fax: 01925 442024 Website: www.warrington.gov.uk
4	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 023 8079 2000 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 55 00 Website: www.cheshireeast.gov.uk
6	Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 5015 Website: www.cheshireeast.gov.uk
7	Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department 58 Nicholas Street, Chester, Cheshire, CH1 2NP	Telephone: 0300 123 8123 Email: enquiries@cheshirewestandchester.gov.uk Website: www.cheshirewestandchester.gov.uk
8	Health and Safety Executive 5S.2 Redgrave Court, Merton Road, Bootle, L20 7HS	Website: www.hse.gov.uk
9	Warrington Borough Council - Environmental and Regeneration 2nd Floor, New Town House, Buttermarket Street, WARRINGTON, Cheshire, WA1 2NH	Telephone: 01925 442503 Fax: 01925 442024 Website: www.warrington.gov.uk
10	Cheshire Brine Subsidence Compensation Board (CBSCB) Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, Staffordshire, ST1 5BD	Telephone: 0845 002 0562 Fax: 0845 111 8888 Email: info@cheshirebrine.com Website: www.cheshirebrine.com
11	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
12	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
13	Macclesfield Borough Council (now part of Cheshire East Council) Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 55 00 Website: www.cheshireeast.gov.uk
14	Warrington Borough Council Town Hall, Warrington, Cheshire, WA1 1UH	Telephone: 01925 442140 Fax: 01925 442024 Website: www.warrington.gov.uk

Contact	Name and Address	Contact Details
15	Vale Royal Borough Council (now part of Cheshire West and Chester Council) 58 Nicholas Street, Chester, Cheshire, CH1 2NP	Telephone: 0300 1238123 Email: enquiries@cheshirewestandchester.gov.uk Website: www.cheshirewestandchester.gov.uk
16	Cheshire East Council - Planning Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 5500 Email: info@cheshireeast.gov.uk Website: www.cheshireeast.gov.uk
17	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Envirocheck[®] Report:

Datasheet

Order Details:

Order Number:

135773225_1_1

Customer Reference:

1015524 - Warrington Interchange MP

National Grid Reference:

366500, 384120

Slice:

B

Site Area (Ha):

93.66

Search Buffer (m):

1000

Site Details:

Warrington Interchange Masterplan

WARRINGTON

WA4 4SR

Client Details:

Mr J Allen

Cundall

Partnership House

4th Floor

Regents Farm Road, Gosforth

Newcastle Upon Tyne

NE3 3AF

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	13
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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 3			2	4
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4	Yes			
Pollution Incidents to Controlled Waters	pg 4			1	3
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality					
River Quality Biology Sampling Points					
Substantiated Pollution Incident Register	pg 5			1	
River Quality Chemistry Sampling Points					
Water Abstractions	pg 5			1	
Water Industry Act Referrals					
Groundwater Vulnerability	pg 5	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 5	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 5	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 6	18	5	12	18

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 13	3	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)	pg 13	1	7	10	28
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 16	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 16	Yes			
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District	pg 16	Yes	n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 16	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 17	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 17	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 18		1	17	3
Fuel Station Entries	pg 19		2		
Points of Interest - Commercial Services	pg 20		2	8	
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 20			1	
Points of Interest - Public Infrastructure	pg 20		3	1	
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 22	2			1
Areas of Unadopted Green Belt	pg 22	1			
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 22			1	
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9NW (NW)	0	1	366100 384400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13SW (NW)	0	1	366100 384750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(NW)	0	1	365650 384600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9NE (NW)	0	1	366450 384150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13NW (NW)	0	1	365950 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	0	1	365750 384450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B13NW (NW)	0	1	366100 384850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B9NE (E)	0	1	366502 384121
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13NW (NW)	5	1	366000 385050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13NW (NW)	17	1	365950 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13SE (N)	25	1	366350 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(N)	55	1	366200 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SE (SW)	60	1	366300 383950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	62	1	365700 383900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	75	1	365700 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	88	1	365400 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B14SW (N)	96	1	366650 384750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	98	1	365400 384900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	107	1	365500 384950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13NE (N)	115	1	366350 384850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SE (SW)	121	1	366350 384000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SE (S)	148	1	366502 383900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SE (SW)	160	1	366450 384050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13SE (N)	181	1	366500 384550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13NE (N)	182	1	366502 384900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B9SE (S)	202	1	366500 384050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	220	1	366150 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B13SE (N)	220	1	366502 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B10NW (N)	244	1	366550 384350
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(W)	246	1	365600 383850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	266	1	366250 385150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B10SW (SE)	266	1	366550 384100
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B14NW (N)	288	1	366550 385050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	308	1	366250 385200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	334	1	366300 385200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	(W)	346	1	365400 383800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B10NW (E)	348	1	366650 384121
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(NW)	377	1	365800 385450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B10SW (SE)	382	1	366600 383950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B10NW (E)	391	1	366700 384150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	(N)	400	1	366400 385250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B14NW (N)	406	1	366550 385000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	B14SW (NE)	414	1	366700 384500
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B10SW (SE)	425	1	366650 383950

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SW)	450	1	365650 383600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	(SW)	452	1	365600 383650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	B14SW (N)	469	1	366700 384750
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	B10NW (E)	491	1	366800 384150
1	Discharge Consents Operator: Beck & Pollitzer Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Office Block Adj Swineyard Lane, High Legh, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016891620 Permit Version: 1 Effective Date: 5th July 1991 Issued Date: Not Supplied Revocation Date: 1st October 1996 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Bradley Brook Status: Lapsed (under Environment Act 1995, Schedule 23) Positional Accuracy: Located by supplier to within 100m	B14SW (N)	317	2	366600 384500
2	Discharge Consents Operator: Mathew Sutton Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Swinyard Farm, High Legh, Knutsford, Cheshire, Wa16 0sd Authority: Environment Agency, North West Region Catchment Area: River Mersey (Etherow) Reference: 016892368 Permit Version: 1 Effective Date: 21st March 2005 Issued Date: 16th March 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Onto Land/Into Watercourse Environment: Receiving Water: Wet Running Ditch Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m	B5NE (S)	438	2	366380 383650
3	Discharge Consents Operator: D A Dickinson Esquire Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Badgers Croft (Barn A) Intack Lane, High Legh, Knutsford, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016891794 Permit Version: 1 Effective Date: 28th September 1995 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Crowley Brook Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m	B5NE (S)	521	2	366450 383600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	<p>Discharge Consents</p> <p>Operator: Cortech Developments Limited Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Brook House Farm Withers Lane, High Legh, Knutsford, Cheshire, Wa16 0sg Authority: Environment Agency, North West Region Catchment Area: River Mersey (Etherow) Reference: Npswqd008246 Permit Version: 1 Effective Date: 19th June 2009 Issued Date: 19th June 2009 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Ditch Ldng To Bradley Brook Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	B14SE (NE)	635	2	366921 384517
5	<p>Discharge Consents</p> <p>Operator: Gareth Clarke & David Clarke Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Unit 1 & 2, Holly Farm, Withers Farm, High Legh, Wa16 0sg Authority: Environment Agency, North West Region Catchment Area: River Mersey (Etherow) Reference: 016892409 Permit Version: 1 Effective Date: 17th October 2005 Issued Date: 17th October 2005 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Culvert Leading To Bradley Brk Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	B15SW (NE)	937	2	367220 384560
6	<p>Discharge Consents</p> <p>Operator: Mr Peter Westwood Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Fern Bank Stp Fanners Lane, High Legh, Knutsford, Cheshire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016990540 Permit Version: 1 Effective Date: 28th November 1984 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Trib Bradley Brook Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989 Positional Accuracy: Located by supplier to within 100m</p>	B11SW (E)	972	2	367270 384070
7	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Total Convenience Store Poplar Location: Cliffe Lane, WARRINGTON, Cheshire, WA13 0TE Authority: Warrington Borough Council, Environmental Health Department Permit Reference: Ep98/14 Dated: 24th December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Manually positioned to the address or location</p>	B13NE (N)	192	3	366385 384851
	<p>Nearest Surface Water Feature</p>	B9NW (W)	0	-	366116 384195
8	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Farm Drainage Location: Cheshire Authority: Environment Agency, North West Region Pollutant: Organic Wastes: Pig Slurry Note: Bradley Brook; Slurry Incident Date: 1st March 1996 Incident Reference: 96710386 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m</p>	B5NE (S)	412	2	366400 383700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	Pollution Incidents to Controlled Waters Property Type: Not Given Location: Below Services , Jun 21; M6 Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Diesel In Bradley Brook Incident Date: 24th September 1998 Incident Reference: SO981720 Catchment Area: Mersey - Tidal Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	B14NW (NE)	579	2	366800 384800
10	Pollution Incidents to Controlled Waters Property Type: Wholesale & Retail Trade: Garages & Vehicle Sales Location: Bradley Brook, Rear of Redbank, Clifton Lane, LYMM, Cheshire Authority: Environment Agency, North West Region Pollutant: Organic Chemicals : Diesel Fuels Note: Not Supplied Incident Date: 29th October 1999 Incident Reference: 33633 Catchment Area: Bridgewater Canal Receiving Water: Canal Cause of Incident: Plant / Machinery Failure : Pump / Machine Failure / Breakdown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m	B14NE (NE)	701	2	366900 384900
11	Pollution Incidents to Controlled Waters Property Type: Pollution Found Source Not Determined Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Bradley Brook Incident Date: 6th September 1995 Incident Reference: 95712261 Catchment Area: Manchester Ship Canal Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	B14NE (NE)	895	2	367100 384900
12	Substantiated Pollution Incident Register Authority: Environment Agency - North West Region, South Area Incident Date: 30th September 2003 Incident Reference: 193389 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Agricultural Materials And Wastes: Other Agricultural Material Or Waste	B14SW (N)	373	2	366647 384547
13	Water Abstractions Operator: Lymm Truckwash Limited Licence Number: 2569021023 Permit Version: 1 Location: Underground Strata: Mercia Mudstone Authority: Environment Agency, North West Region Abstraction: Transport: General Washing/Process Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th March 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	B14NW (N)	417	2	366630 384810
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 16 West Cheshire Scale: 1:100,000	B9NE (E)	0	2	366502 384121
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	B9NE (E)	0	1	366502 384121
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	B9NE (E)	0	1	366502 384121

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
14	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 221.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9SW (W)	0	4	366185 384062
15	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 27.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (NW)	0	4	366260 384247
16	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 54.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (NW)	0	4	366313 384237
17	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 352.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9SW (W)	0	4	365952 384091
18	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 105.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9SW (W)	0	4	366185 384062
19	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 156.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366096 384130
20	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 408.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9SW (W)	0	4	365952 384091

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366100 384124
22	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366141 384159
23	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 8.0 Watercourse Level: Underground Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366135 384173
24	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366133 384182
25	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 3.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366136 384189
26	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366136 384189
27	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 8.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NE (NW)	0	4	366194 384335
28	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 113.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NE (NW)	0	4	366306 384315
29	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 21.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366084 384214

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 58.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9NW (W)	0	4	366136 384190
31	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 137.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (W)	0	4	366232 384218
32	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 48.4 Watercourse Level: Underground Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (NW)	3	4	366361 384229
33	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 220.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (NW)	51	4	366377 384235
34	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 78.0 Watercourse Level: Underground Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (N)	101	4	366399 384401
35	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 154.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B9NE (N)	177	4	366471 384429
36	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 205.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B9SE (SW)	185	4	366216 383843
37	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 28.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14SW (N)	322	4	366612 384463
38	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 40.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B14SW (N)	346	4	366615 384561

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
39	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 50.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14SW (N)	349	4	366639 384468
40	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14SW (N)	349	4	366640 384467
41	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 6.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B14SW (N)	349	4	366641 384465
42	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 71.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B10NW (NE)	354	4	366694 384412
43	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 139.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14SW (N)	361	4	366641 384518
44	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 34.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B14SW (N)	362	4	366624 384599
45	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 390.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14SW (N)	379	4	366635 384631
46	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 286.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B10NW (NE)	395	4	366721 384364
47	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 143.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5NE (S)	434	4	366517 383685

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 48.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B6NW (S)	485	4	366548 383698
49	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 119.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B10NE (E)	609	4	366920 384261
50	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 107.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	682	4	366270 383276
51	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 160.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B10NE (E)	699	4	367007 384180
52	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 182.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B14SE (NE)	699	4	367027 384676
53	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 1099.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Bradley Brook Catchment Name: Mersey Primacy: 1	B14NE (NE)	701	4	366923 384815
54	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 32.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	707	4	366455 383361
55	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 15.0 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	709	4	366465 383371
56	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 44.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	709	4	366504 383393

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 16.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 0	B6NW (SE)	709	4	366736 383602
58	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 48.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B6SW (S)	716	4	366529 383404
59	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 5.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 0	B6NW (SE)	719	4	366733 383586
60	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 9.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 0	B6NW (SE)	723	4	366733 383580
61	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 176.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	782	4	366300 383180
62	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 994.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Crowley Brook Catchment Name: Mersey Primacy: 1	B1NE (S)	910	4	366297 383009
63	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 10.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	913	4	366445 383107
64	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 16.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	920	4	366455 383104
65	OS Water Network Lines Watercourse Form: Lake Watercourse Length: 23.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B5SE (S)	920	4	366455 383104

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
66	OS Water Network Lines Watercourse Form: Inland river Watercourse Length: 257.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	B6SW (S)	942	4	366715 383153

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Macclesfield Borough Council - Has not been able to supply Landfill data		0	5	366502 384121
	Local Authority Landfill Coverage Name: Warrington Unitary Council - Has not been able to supply Landfill data		0	3	366313 384287
	Local Authority Landfill Coverage Name: Cheshire County Council - Has supplied landfill data		0	6	366502 384121
	Local Authority Landfill Coverage Name: Vale Royal Borough Council - Has supplied landfill data		911	7	366912 383182
67	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B9SW (W)	0	-	365972 383935
68	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B9SE (W)	31	-	366277 384105
69	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B9SE (SW)	98	-	366202 383945
70	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B9SW (SW)	108	-	365992 383790
71	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B9SE (W)	112	-	366378 384105
72	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B9NE (NW)	126	-	366435 384207
73	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B9SW (SW)	129	-	365877 383826
74	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5NW (SW)	141	-	366040 383766
75	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5NW (SW)	256	-	365902 383657
76	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10NW (NE)	281	-	366592 384243
77	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	B10NW (NE)	287	-	366597 384222
78	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10NW (E)	289	-	366587 384139
79	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SW (S)	315	-	366548 383993
80	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B5NE (SW)	362	-	366261 383651
81	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5NW (SW)	372	-	366030 383528
82	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B10NW (E)	376	-	366681 384160
83	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SW (SE)	407	-	366628 383949

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
84	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B10SW (SE)	464	-	366695 383949
85	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SW (SE)	517	-	366775 383988
86	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B5NE (S)	522	-	366377 383540
87	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SW (SE)	537	-	366777 383946
88	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B5NE (S)	538	-	366311 383467
89	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10NW (NE)	541	-	366848 384350
90	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5SW (SW)	554	-	366167 383373
91	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B6NW (S)	558	-	366556 383644
92	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5SW (SW)	567	-	366130 383348
93	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B5NE (S)	584	-	366415 383491
94	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	B5SW (SW)	598	-	365854 383316
95	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B6NW (SE)	637	-	366775 383756
96	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5SE (S)	696	-	366218 383241
97	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B10SE (E)	696	-	366969 383995
98	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5SW (SW)	705	-	366082 383199
99	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B5SE (S)	719	-	366204 383211
100	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B6NW (S)	733	-	366595 383446
101	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B6NW (SE)	759	-	366818 383617
102	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B6NE (SE)	816	-	366958 383704
103	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B14NE (NE)	826	-	367057 384797
104	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10NE (E)	826	-	367134 384347

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
105	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SE (E)	847	-	367089 383882
106	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1882	B6NE (SE)	860	-	366942 383607
107	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B10SE (SE)	869	-	367074 383795
108	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B11NW (E)	908	-	367218 384291
109	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1910	B1NW (S)	923	-	366038 382976
110	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B15SW (NE)	945	-	367223 384588
111	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B11NW (E)	959	-	367268 384329
112	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1954	B11NW (E)	995	-	367304 384329

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Triassic Rocks (Undifferentiated)	B9NE (E)	0	1	366502 384121
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	B14SW (N)	0	1	366620 384541
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	B9NE (E)	0	1	366502 384121
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	CBSCB Compensation District Description: In an area which may be affected by historic brine pumping (the Compensation District). The Law Society recommend that all property transactions should obtain a CON29M search. The CBSCB website: http://www.cheshirebrine.com/ has information regarding how to obtain a search and other information regarding the continuing functions of the Board. Contact details are included in the Useful Contacts section. Source: Cheshire Brine Subsidence Compensation Board (CBSCB)	B9NE (E)	0	8	366502 384121
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	45	1	366207 384891
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13NW (N)	115	1	366186 385000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	151	1	366248 384984
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	156	1	366256 385000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	0	1	366316 384901
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	34	1	366485 385000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	B13NE (N)	5	1	366502 385000
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	B9NE (E)	0	1	366502 384121

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
113	<p>Contemporary Trade Directory Entries</p> <p>Name: Lymm Service Station Location: Junction 20 M6-A50,Cliff Lane, Lymm, Cheshire, WA13 0SP Classification: Petrol Filling Stations Status: Active Positional Accuracy: Manually positioned to the address or location</p>	B13NE (N)	191	-	366383 384852
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Total Location: Poplar 2000 Services Area,Cliffe La, Lymm, Cheshire, WA13 0TE Classification: Petrol Filling Stations Status: Inactive Positional Accuracy: Manually positioned to the address or location</p>	B13SE (N)	296	-	366516 384768
114	<p>Contemporary Trade Directory Entries</p> <p>Name: The C B Shack Location: Unit 1, Poplar 2000 Services, Cliff Lane, Lymm, Cheshire, WA13 0SP Classification: Radio Communication Equipment Status: Active Positional Accuracy: Automatically positioned to the address</p>	B13SE (N)	300	-	366521 384762
114	<p>Contemporary Trade Directory Entries</p> <p>Name: Egertons Recovery Ltd Location: Poplar 2000 Services, Cliff Lane, Lymm, WA13 0SP Classification: Car Body Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	B13NE (N)	315	-	366524 384812
115	<p>Contemporary Trade Directory Entries</p> <p>Name: T R Bitz Location: Swineyard Lane, High Legh, Knutsford, Cheshire, WA16 0SD Classification: Car Body Repairs Status: Active Positional Accuracy: Automatically positioned to the address</p>	B5NW (SW)	398	-	366118 383521
116	<p>Contemporary Trade Directory Entries</p> <p>Name: Vantrunk Location: Swineyard Lane, High Legh, Knutsford, Cheshire, WA16 0SD Classification: Stainless Steel Manufacturers Status: Active Positional Accuracy: Manually positioned within the geographical locality</p>	B5NE (S)	418	-	366378 383674
117	<p>Contemporary Trade Directory Entries</p> <p>Name: Lymm Engine Components Ltd Location: 233, Cherry Corner, Lymm, WA13 0TB Classification: Engines - Sales & Service Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	B13NE (N)	425	-	366508 385098
118	<p>Contemporary Trade Directory Entries</p> <p>Name: W E Massey Location: Brook Villa, Swineyard Lane, High Legh, Knutsford, Cheshire, WA16 0SD Classification: Road Haulage Services Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	B5NE (S)	445	-	366447 383697
118	<p>Contemporary Trade Directory Entries</p> <p>Name: Atherton Engineering Ltd Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, WA16 0SD Classification: Engineers - General Status: Active Positional Accuracy: Automatically positioned to the address</p>	B5NE (S)	454	-	366466 383702
118	<p>Contemporary Trade Directory Entries</p> <p>Name: D B S Solutions Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, Cheshire, WA16 0SD Classification: Sound Equipment Systems Manufacturers Status: Active Positional Accuracy: Automatically positioned to the address</p>	B5NE (S)	455	-	366469 383703
118	<p>Contemporary Trade Directory Entries</p> <p>Name: Taylor & Sons Campers Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, Cheshire, WA16 0SD Classification: Car Body Repairs Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	B5NE (S)	455	-	366469 383703
119	<p>Contemporary Trade Directory Entries</p> <p>Name: Elebert Pest Force Ltd Location: Eleberts Pestforce Ltd, Poplar Park, Cliff Lane, Warrington, WA13 0TD Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address</p>	B14NW (N)	495	-	366631 385037

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
119	Contemporary Trade Directory Entries Name: Sports Equipment Location: Poplar Park, Cliff La, Lymm, Cheshire, WA13 0TD Classification: Sports Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Manually positioned to the address or location	B14NW (N)	496	-	366632 385038
119	Contemporary Trade Directory Entries Name: Elebert Pest Force Ltd Location: Poplar Park, Cliff Lane, LYMM, Cheshire, WA13 0TD Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	497	-	366633 385038
119	Contemporary Trade Directory Entries Name: Elebert'S Pestforce Ltd Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Fumigation Services Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	497	-	366633 385038
119	Contemporary Trade Directory Entries Name: Sports-E-Quipment Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Sports Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	497	-	366633 385038
119	Contemporary Trade Directory Entries Name: Explorer (Uk) Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Car Component Manufacturers Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	497	-	366633 385038
119	Contemporary Trade Directory Entries Name: Gary Worrall Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Sports Equipment Manufacturers & Distributors Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	497	-	366633 385038
119	Contemporary Trade Directory Entries Name: Direct (North West) Location: Poplar Park, Cliff La, Lymm, Cheshire, WA13 0TD Classification: Road Haulage Services Status: Inactive Positional Accuracy: Manually positioned to the address or location	B14NW (N)	503	-	366626 385064
119	Contemporary Trade Directory Entries Name: Alpha Amenity Ltd Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Fertilisers Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	505	-	366627 385065
119	Contemporary Trade Directory Entries Name: Alpha Amenity Location: Poplar Park, Cliff Lane, Lymm, Cheshire, WA13 0TD Classification: Chemicals - Distributors & Wholesalers Status: Inactive Positional Accuracy: Automatically positioned to the address	B14NW (N)	505	-	366627 385065
120	Fuel Station Entries Name: A50/M6 Lymm Service Area (Poplar 2000) Location: Cliffe Lane, M6, Lymm, Cheshire, WA13 0SP Brand: Bp Premises Type: Service Area Status: Open Positional Accuracy: Manually positioned to the address or location	B13NE (N)	191	-	366384 384849
120	Fuel Station Entries Name: Lymm Hgv Service Area Location: Cliffe Lane, M6, LYMM, Cheshire, WA13 0TE Brand: Unbranded Premises Type: Service Area Status: Non-Retail Positional Accuracy: Manually positioned to the address or location	B13NE (N)	192	-	366385 384851

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
121	Points of Interest - Commercial Services Name: Cheshire Coachtrimmers Ltd Location: Caravan Howshoots Farm, Cliff Lane, Grappenhall, Warrington, WA4 4SJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B13NW (NW)	55	9	366008 385009
121	Points of Interest - Commercial Services Name: Cheshire Coachtrimmers Ltd Location: Howshoots Farm, Cliff Lane, Grappenhall, Warrington, WA4 4SJ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B13NW (NW)	55	9	366007 385009
122	Points of Interest - Commercial Services Name: Lymm Truckwash Ltd Location: Poplar 2000 Services, Cliffe Lane, Lymm, WA13 0SP Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	B13NE (N)	314	9	366525 384802
123	Points of Interest - Commercial Services Name: T R Bitz Location: Swineyard Lane, High Legh, Knutsford, WA16 0SD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B5NW (SW)	398	9	366117 383521
124	Points of Interest - Commercial Services Name: Lymm Truckwash Ltd Location: Poplar Services 2000, Cliff Lane, Lymm, WA13 0SP Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	B14NW (N)	409	9	366618 384822
125	Points of Interest - Commercial Services Name: Bespoke Car Interiors Ltd Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, WA16 0SD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B5NE (S)	455	9	366468 383702
125	Points of Interest - Commercial Services Name: Motor Agents Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, WA16 0SD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B5NE (S)	455	9	366469 383703
125	Points of Interest - Commercial Services Name: Taylor & Sons Campers Location: Brook Farm, Swineyard Lane, High Legh, Knutsford, WA16 0SD Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	B5NE (S)	455	9	366469 383703
126	Points of Interest - Commercial Services Name: Elebert's Pestforce Ltd Location: Poplar Park, Cliff Lane, Lymm, WA13 0TD Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	B14NW (N)	497	9	366633 385038
126	Points of Interest - Commercial Services Name: Elebert's Pestforce Ltd Location: Poplar Park, Cliff Lane, Lymm, WA13 0TD Category: Contract Services Class Code: Pest and Vermin Control Positional Accuracy: Positioned to address or location	B14NW (N)	497	9	366633 385038
127	Points of Interest - Manufacturing and Production Name: Tank Location: WA16 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	B5NE (S)	442	9	366511 383758
128	Points of Interest - Public Infrastructure Name: Lymm Service Station Location: Junction 21 M6-A50, Cliff Lane, Lymm, WA13 0SP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	B13NE (N)	191	9	366383 384853

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
128	Points of Interest - Public Infrastructure Name: A50/M6 Lymm Service Area (Poplar 2000) Location: Cliffe Lane, M6 , Lymm, Cheshire, WA13 0SP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	B13NE (N)	191	9	366384 384849
128	Points of Interest - Public Infrastructure Name: Shell (UK) Ltd Location: Cliffe Lane, Lymm, WA13 0SP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	B13NE (N)	194	9	366386 384853
129	Points of Interest - Public Infrastructure Name: Lymm Service Station Location: Poplar Services 2000, Cliffe Lane, Lymm, WA13 0SP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	B13NE (N)	314	9	366525 384802

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
130	Areas of Adopted Green Belt Authority: Warrington Borough Council Plan Name: Core Strategy Status: Adopted Plan Date: 21st July 2014	B9NE (NW)	0	12	366312 384286
131	Areas of Adopted Green Belt Authority: Macclesfield Borough Council (now part of Cheshire East Council) Plan Name: Macclesfield Borough Local Plan Status: Adopted Plan Date: 8th January 2004	B9NE (E)	0	11	366502 384121
132	Areas of Adopted Green Belt Authority: Vale Royal Borough Council (now part of Cheshire West and Chester Council) Plan Name: Vale Royal Borough Council Local Plan - First Review Alteration Status: Adopted Plan Date: 16th June 2006	B6SE (SE)	909	13	366912 383183
133	Areas of Unadopted Green Belt Authority: Cheshire East Council, Planning Department Plan Name: Cheshire East Local Plan Strategy Status: Submission Draft Plan Date: 20th May 2014	B9NE (E)	0	14	366502 384121
134	Nitrate Vulnerable Zones Name: River Weaver (Dane To Frodsham) Nvz Description: Surface Water Source: Environment Agency, Head Office	B5NE (S)	385	15	366356 383643

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Cheshire East Council - Environmental Health Department Macclesfield Borough Council (now part of Cheshire East Council) - Health and Public Safety Warrington Borough Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Community Services Directorate Cheshire West and Chester Council - Environmental Health Department	April 2014 July 2008 March 2015 November 2008 November 2013	Annually Not Applicable Annually Not Applicable Annually
Discharge Consents Environment Agency - North West Region	April 2017	Quarterly
Enforcement and Prohibition Notices Environment Agency - North West Region	March 2013	As notified
Integrated Pollution Controls Environment Agency - North West Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control Environment Agency - North West Region	April 2017	Quarterly
Local Authority Integrated Pollution Prevention And Control Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Local Authority Pollution Prevention and Controls Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Local Authority Pollution Prevention and Control Enforcements Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department Cheshire West and Chester Council - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Cheshire East Council - Environmental Health Department	February 2009 February 2015 July 2015 June 2009 September 2014	Not Applicable Annual Rolling Update Annually Not Applicable Annually
Nearest Surface Water Feature Ordnance Survey	May 2017	
Pollution Incidents to Controlled Waters Environment Agency - North West Region	January 2000	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - North West Region	March 2013	As notified
Prosecutions Relating to Controlled Waters Environment Agency - North West Region	March 2013	As notified
Registered Radioactive Substances Environment Agency - North West Region	January 2015	
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	July 2012	Annually

Agency & Hydrological	Version	Update Cycle
River Quality Chemistry Sampling Points Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register Environment Agency - North West Region - South Area	April 2017	Quarterly
Water Abstractions Environment Agency - North West Region	April 2017	Quarterly
Water Industry Act Referrals Environment Agency - North West Region	April 2017	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	July 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	August 2017	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	August 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	August 2017	Quarterly
Flood Defences Environment Agency - Head Office	August 2017	Quarterly
OS Water Network Lines Ordnance Survey	April 2017	6 Weekly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - Head Office	May 2017	Quarterly
Integrated Pollution Control Registered Waste Sites Environment Agency - North West Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North West Region - South Area	May 2017	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North West Region - South Area	May 2017	Quarterly
Local Authority Landfill Coverage Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department Warrington Borough Council - Environmental Health Department	February 2005 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Potentially Infilled Land (Non-Water) Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water) Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - North West Region - South Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	March 2017	Bi-Annually
Explosive Sites Health and Safety Executive	March 2017	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Cheshire West and Chester Council - Planning Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) Macclesfield Borough Council (now part of Cheshire East Council) - Planning Department Cheshire East Council - Planning Department Cheshire County Council (now part of Cheshire East Council) - Planning Department Warrington Borough Council - Environmental and Regeneration	April 2016 August 2009 December 2008 February 2016 July 2008 June 2016	Annually Not Applicable Not Applicable Annually Annual Rolling Update Annual Rolling Update
Planning Hazardous Substance Consents Cheshire West and Chester Council - Planning Department Vale Royal Borough Council (now part of Cheshire West and Chester Council) Macclesfield Borough Council (now part of Cheshire East Council) - Planning Department Cheshire East Council - Planning Department Cheshire County Council (now part of Cheshire East Council) - Planning Department Warrington Borough Council - Environmental and Regeneration	April 2016 August 2009 December 2008 February 2016 July 2008 June 2016	Annually Not Applicable Not Applicable Annually Annual Rolling Update Annual Rolling Update
Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2017	Bi-Annually
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	June 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	May 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	December 2016	Quarterly
Points of Interest - Education and Health PointX	December 2016	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2016	Quarterly
Points of Interest - Public Infrastructure PointX	December 2016	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2016	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland Natural England	May 2017	Bi-Annually
Areas of Adopted Green Belt Macclesfield Borough Council (now part of Cheshire East Council) Vale Royal Borough Council (now part of Cheshire West and Chester Council) Warrington Borough Council	May 2017 May 2017 May 2017	As notified As notified As notified
Areas of Unadopted Green Belt Cheshire East Council - Planning Department Macclesfield Borough Council (now part of Cheshire East Council) Vale Royal Borough Council (now part of Cheshire West and Chester Council) Warrington Borough Council	May 2017 May 2017 May 2017 May 2017	As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	January 2017	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	June 2017	Bi-Annually
Marine Nature Reserves Natural England	January 2017	Bi-Annually
National Nature Reserves Natural England	January 2017	Bi-Annually
National Parks Natural England	February 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2017 October 2015	Bi-Annually Annually
Ramsar Sites Natural England	January 2017	Bi-Annually
Sites of Special Scientific Interest Natural England	January 2017	Bi-Annually
Special Areas of Conservation Natural England	January 2017	Bi-Annually
Special Protection Areas Natural England	January 2017	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	 British Geological Survey <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Centre for Ecology and Hydrology	 Centre for Ecology & Hydrology <small>NATURAL ENVIRONMENT RESEARCH COUNCIL</small>
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	





Contact	Name and Address	Contact Details
1	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	Warrington Borough Council - Environmental Health Department Technical Services, Palmyra House, Palmyra Square North, North Warrington, Cheshire, WA1 1JN	Telephone: 01925 444400 Fax: 01925 442024 Website: www.warrington.gov.uk
4	Ordnance Survey Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 023 8079 2000 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	Macclesfield Borough Council (now part of Cheshire East Council) - Environmental Health Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 55 00 Website: www.cheshireeast.gov.uk
6	Cheshire County Council (now part of Cheshire East Council) - Environmental Planning Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 5015 Website: www.cheshireeast.gov.uk
7	Vale Royal Borough Council (now part of Cheshire West and Chester Council) - Environmental Health Department 58 Nicholas Street, Chester, Cheshire, CH1 2NP	Telephone: 0300 123 8123 Email: enquiries@cheshirewestandchester.gov.uk Website: www.cheshirewestandchester.gov.uk
8	Cheshire Brine Subsidence Compensation Board (CBSCB) Sir Henry Doulton House, Forge Lane, Etruria, Stoke on Trent, Staffordshire, ST1 5BD	Telephone: 0845 002 0562 Fax: 0845 111 8888 Email: info@cheshirebrine.com Website: www.cheshirebrine.com
9	PointX 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
10	Natural England County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
11	Macclesfield Borough Council (now part of Cheshire East Council) Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 55 00 Website: www.cheshireeast.gov.uk
12	Warrington Borough Council Town Hall, Warrington, Cheshire, WA1 1UH	Telephone: 01925 442140 Fax: 01925 442024 Website: www.warrington.gov.uk
13	Vale Royal Borough Council (now part of Cheshire West and Chester Council) 58 Nicholas Street, Chester, Cheshire, CH1 2NP	Telephone: 0300 1238123 Email: enquiries@cheshirewestandchester.gov.uk Website: www.cheshirewestandchester.gov.uk
14	Cheshire East Council - Planning Department Westfields, Middlewich Road, Sandbach, Cheshire, CW11 1HZ	Telephone: 0300 123 5500 Email: info@cheshireeast.gov.uk Website: www.cheshireeast.gov.uk

Contact	Name and Address	Contact Details
15	Environment Agency - Head Office Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk





Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:50,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	TILLD	Till, Devensian	Diamicton	Devensian - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Devensian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BOM	Bollin Mudstone Member	Mudstone	Anisian - Anisian
	TPSF	Tarporley Siltstone Formation	Siltstone, Mudstone and Sandstone	Anisian - Olenekian
	HEY	Helsby Sandstone Formation	Sandstone, Pebbly (Gravelly)	Anisian - Early Triassic
		Faults		

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Geology 1:50,000 Maps

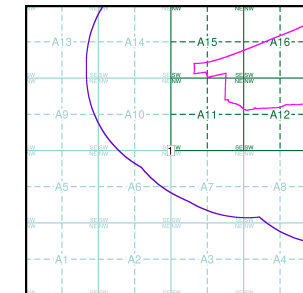
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID: 1
 Map Sheet No: 097
 Map Name: Runcorn
 Map Date: 1980
 Bedrock Geology: Available
 Superficial Geology: Available
 Artificial Geology: Not Available
 Faults: Not Supplied
 Landslip: Not Available
 Rock Segments: Not Supplied

Geology 1:50,000 Maps - Slice A



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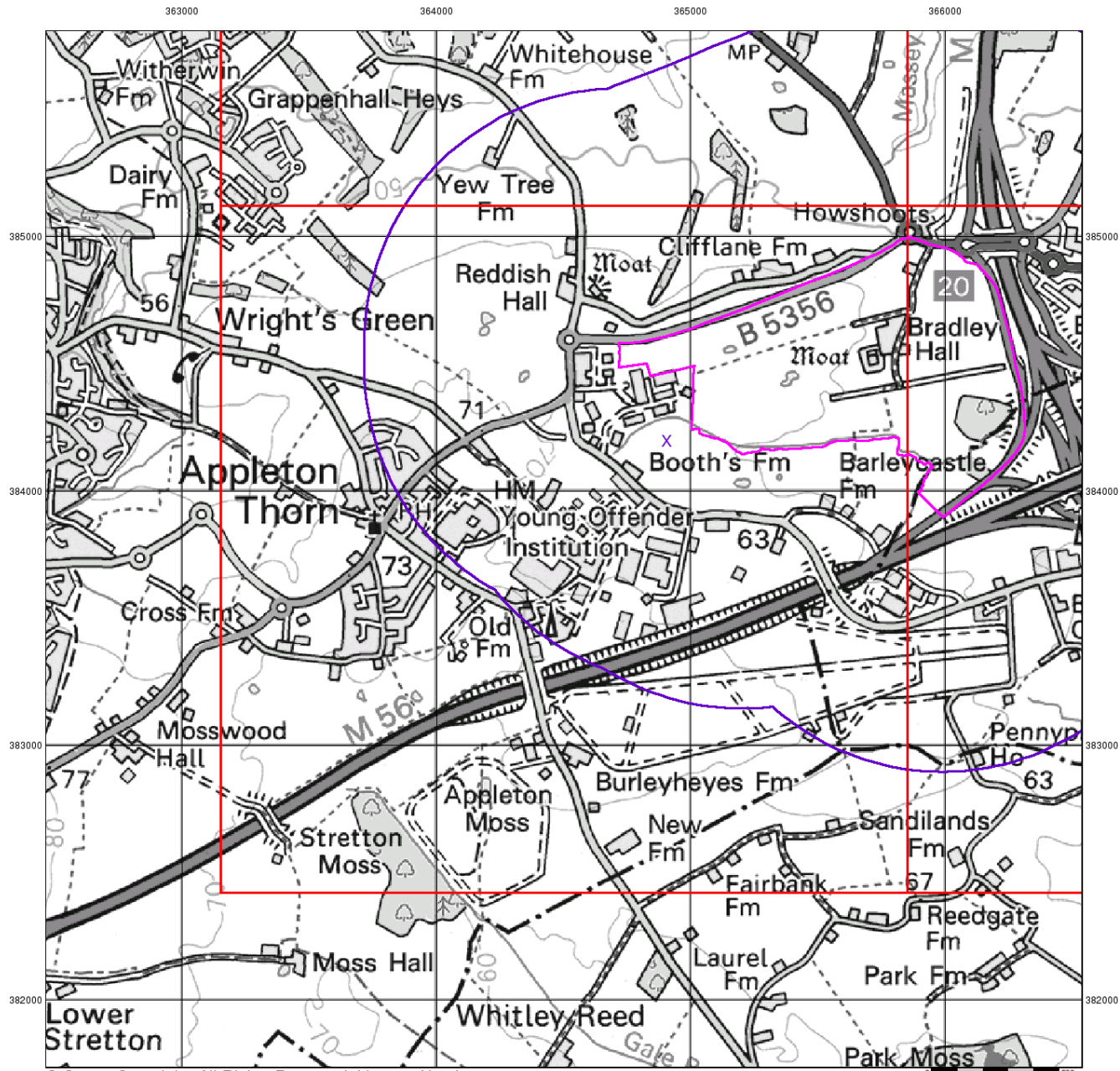
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 Customer Reference: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details:

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

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Artificial Ground and Landslip

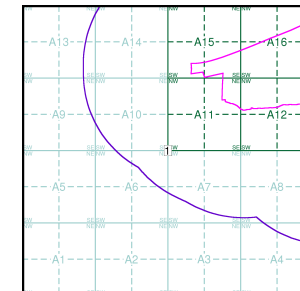
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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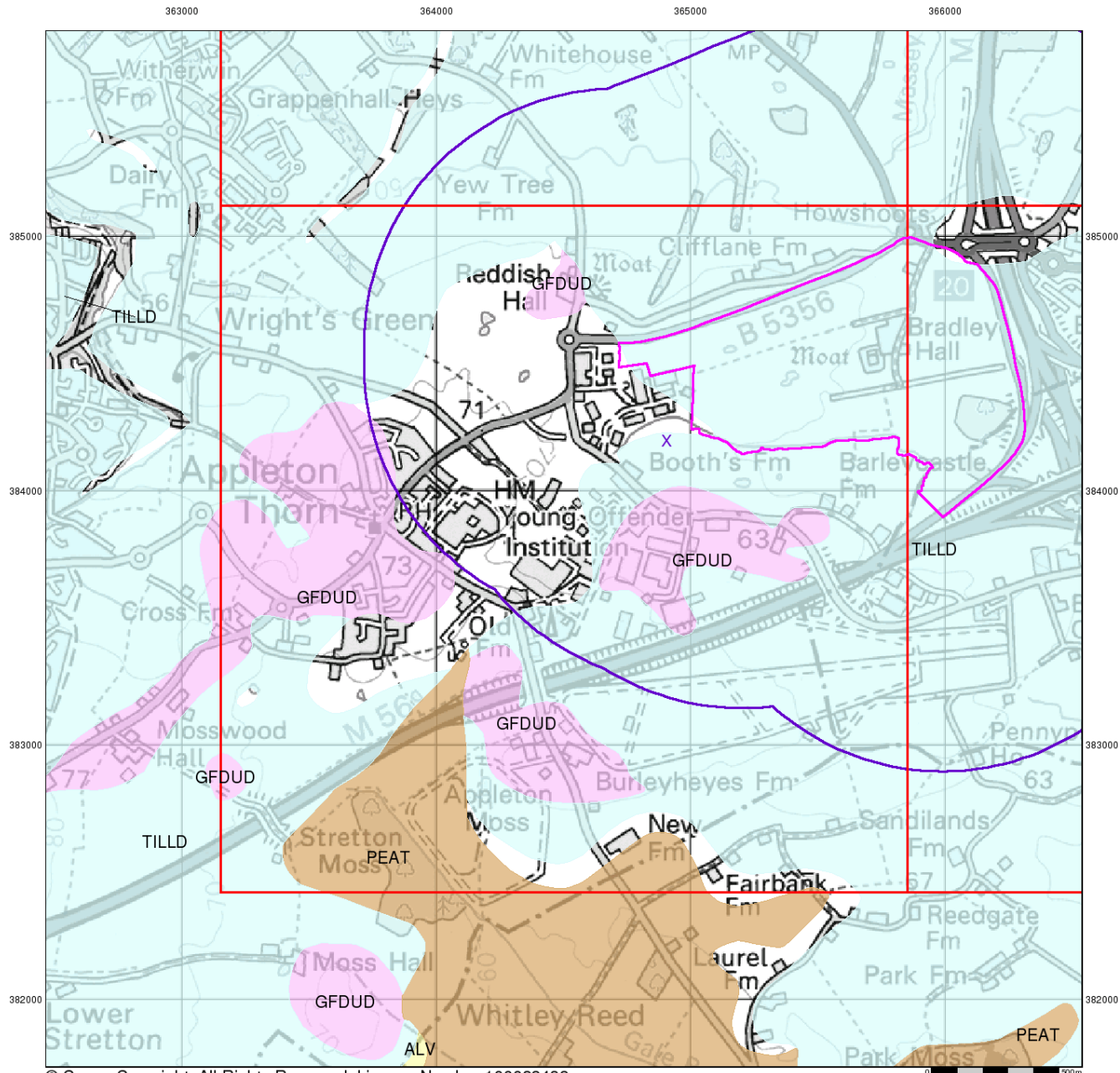
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 Customer Reference: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
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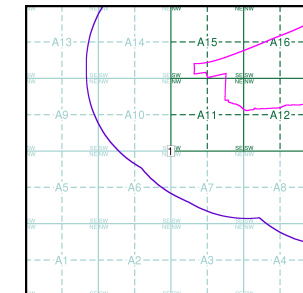
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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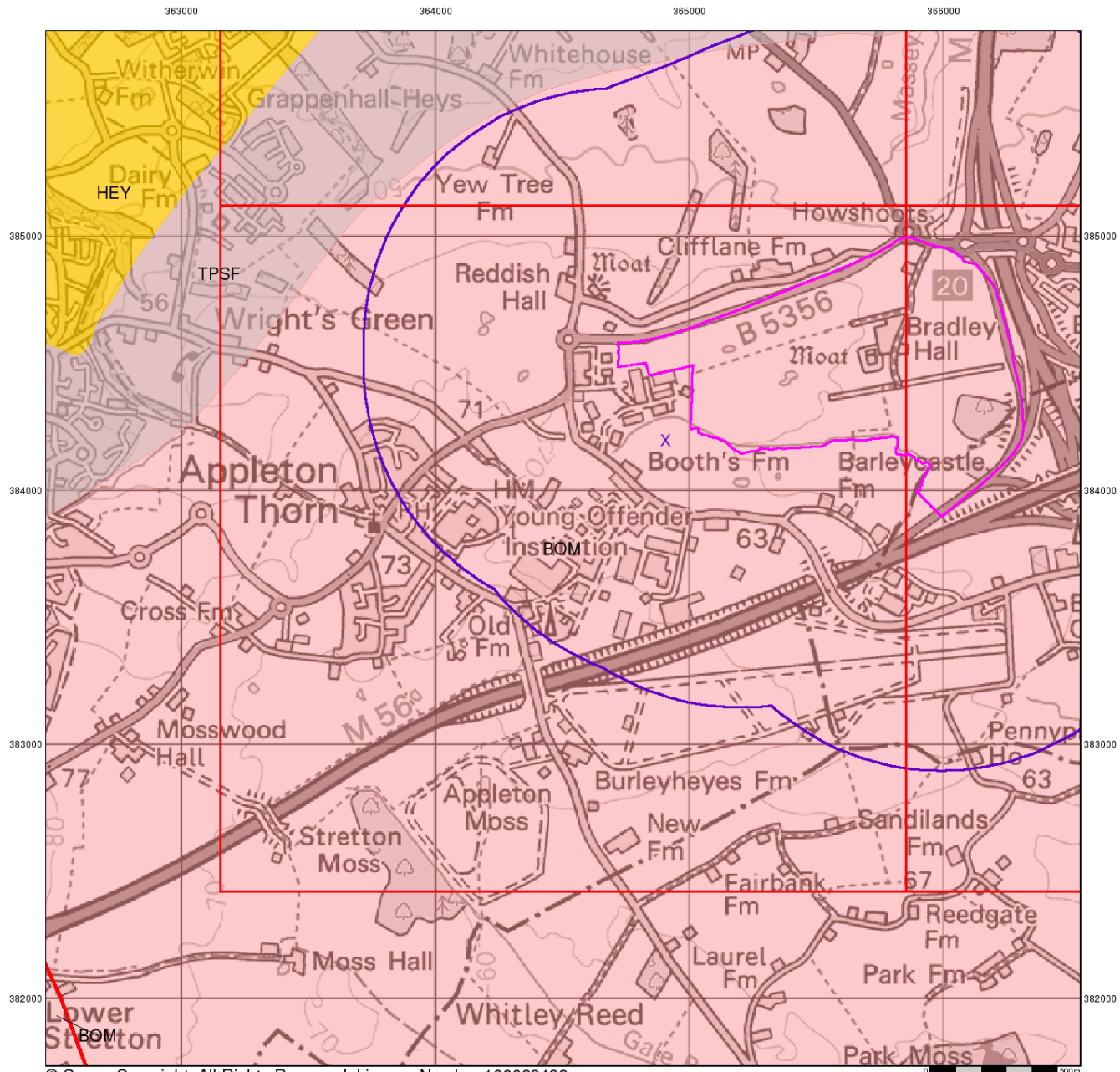
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Bedrock and Faults

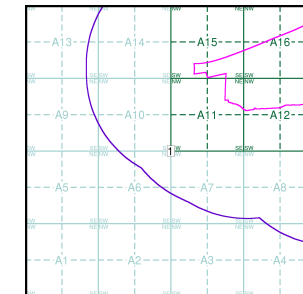
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

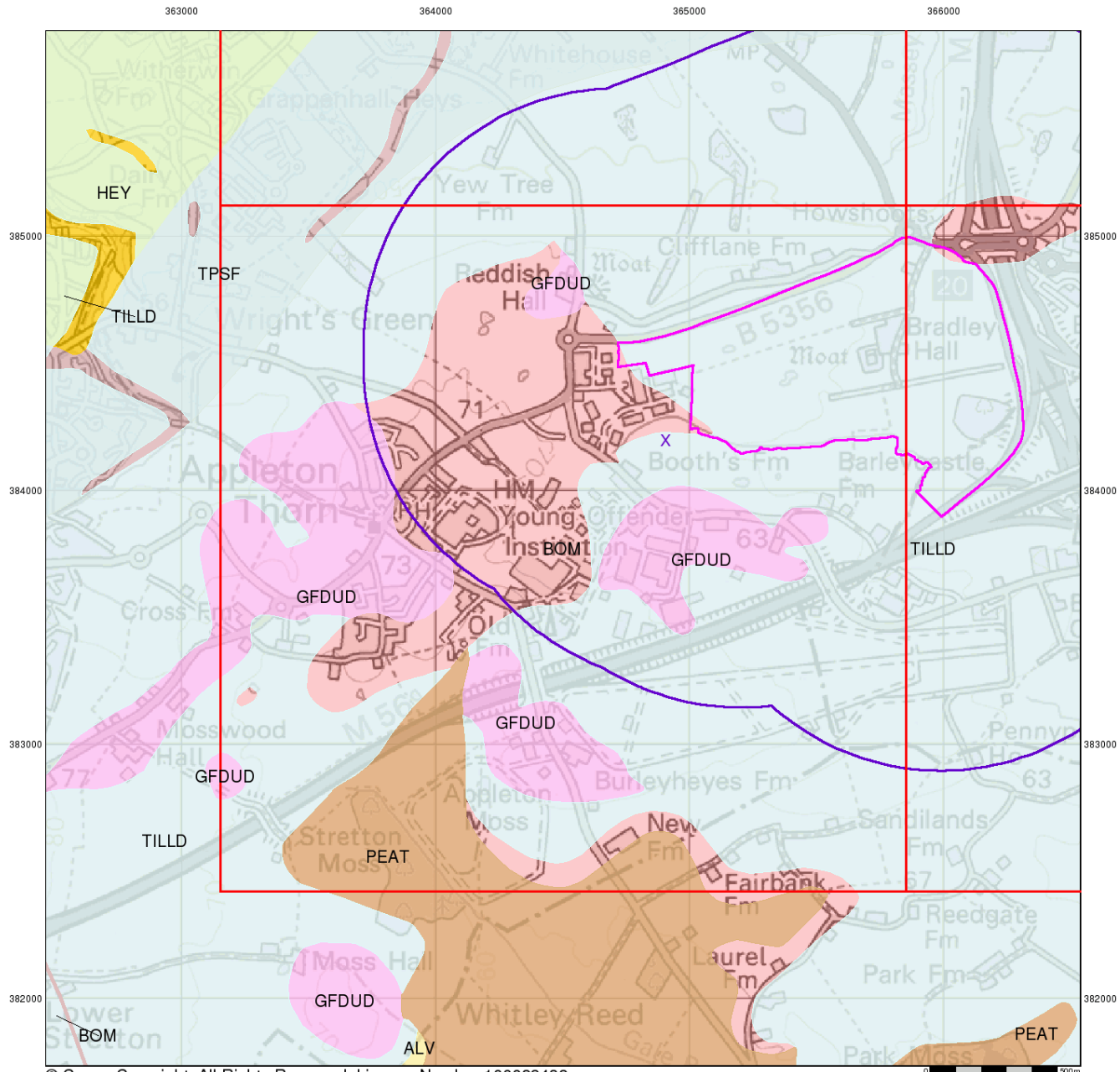
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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

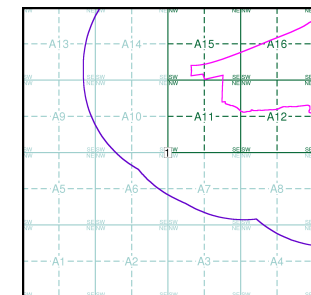
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

Order Number:	135773225_1_1
Customer Reference:	1015524 - Warrington Interchange MP
National Grid Reference:	364910, 384200
Slice:	A
Site Area (Ha):	93.66
Search Buffer (m):	1000

Site Details:






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

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 Fax: 0844 844 9951
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Geology 1:10,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Ipswichian
	SSA	Shirdley Hill Sand Formation	Sand	Flandrian - Ipswichian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BOM	Bollin Mudstone Member	Mudstone	Anisian - Anisian
	TPSF	Tarporley Siltstone Formation	Siltstone and Sandstone	Anisian - Olenekian

Geology 1:10,000 Maps

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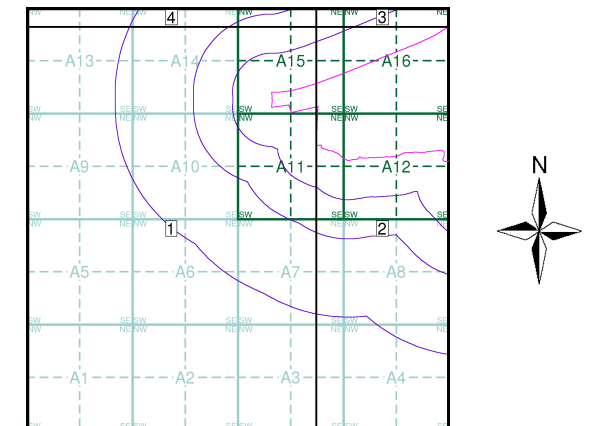
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Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	3	Map ID:	2
Map Name:	SJ68NE	Map Name:	SJ68SE
Map Date:	1960	Map Date:	1960
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Not Available	Artificial Geology:	Not Available
Faults:	Available	Faults:	Not Available
Landslip:	Not Available	Landslip:	Not Available
Rock Segments:	Not Available	Rock Segments:	Not Available
Map ID:	4	Map ID:	1
Map Name:	SJ68NW	Map Name:	SJ68SW
Map Date:	1946	Map Date:	1945
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Not Available	Artificial Geology:	Not Available
Faults:	Not Supplied	Faults:	Not Supplied
Landslip:	Not Available	Landslip:	Not Available
Rock Segments:	Not Supplied	Rock Segments:	Not Supplied

Geology 1:10,000 Maps - Slice A

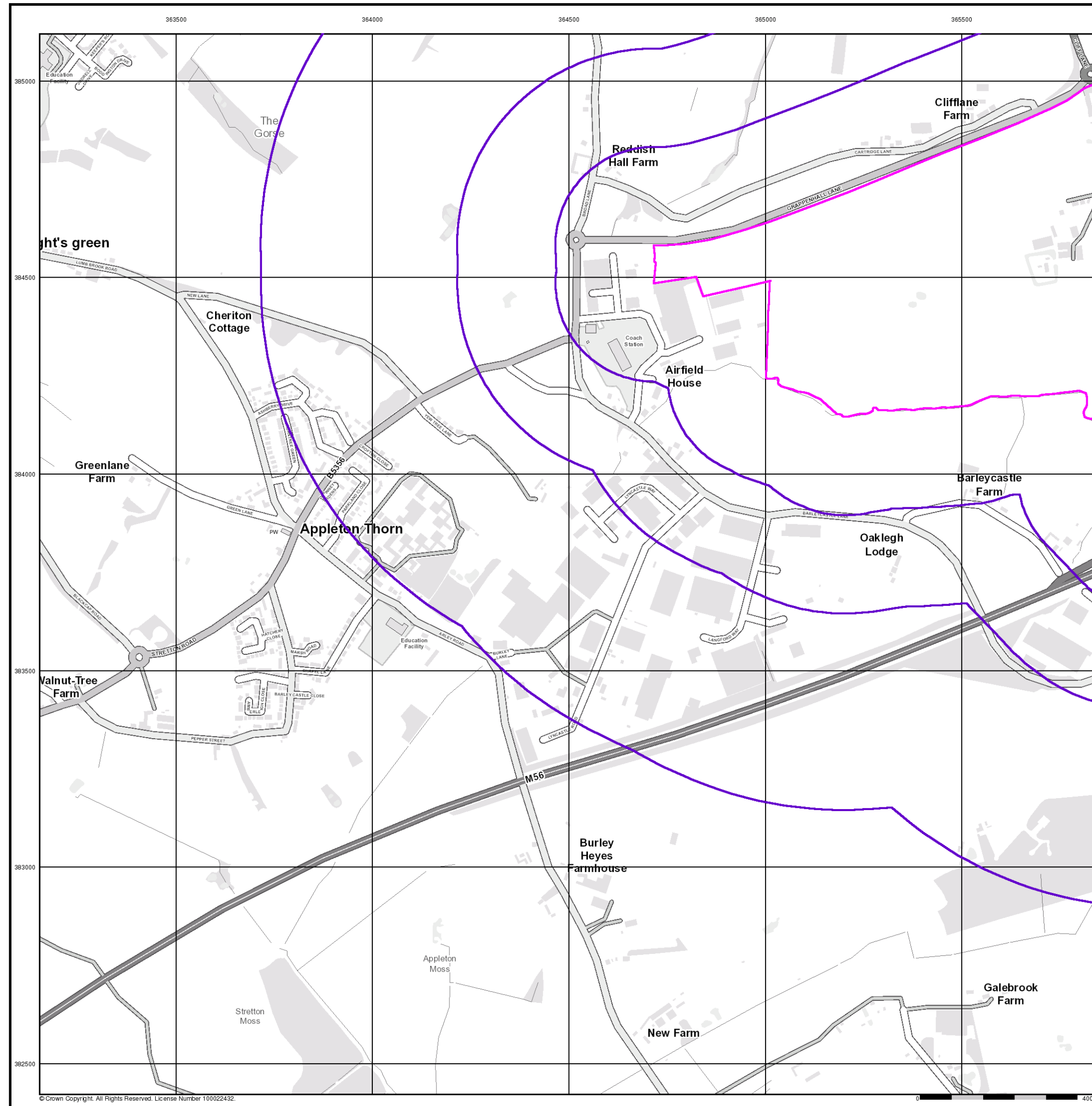


Order Details

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 National Grid Reference: 364910, 384200
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 Search Buffer (m): 1000

Site Details

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Artificial Ground and Landslip

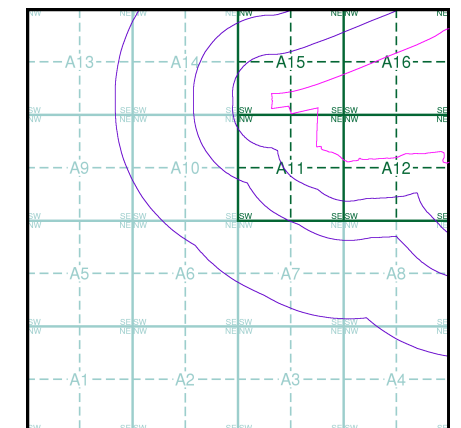
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Artificial Ground and Landslip Map - Slice A

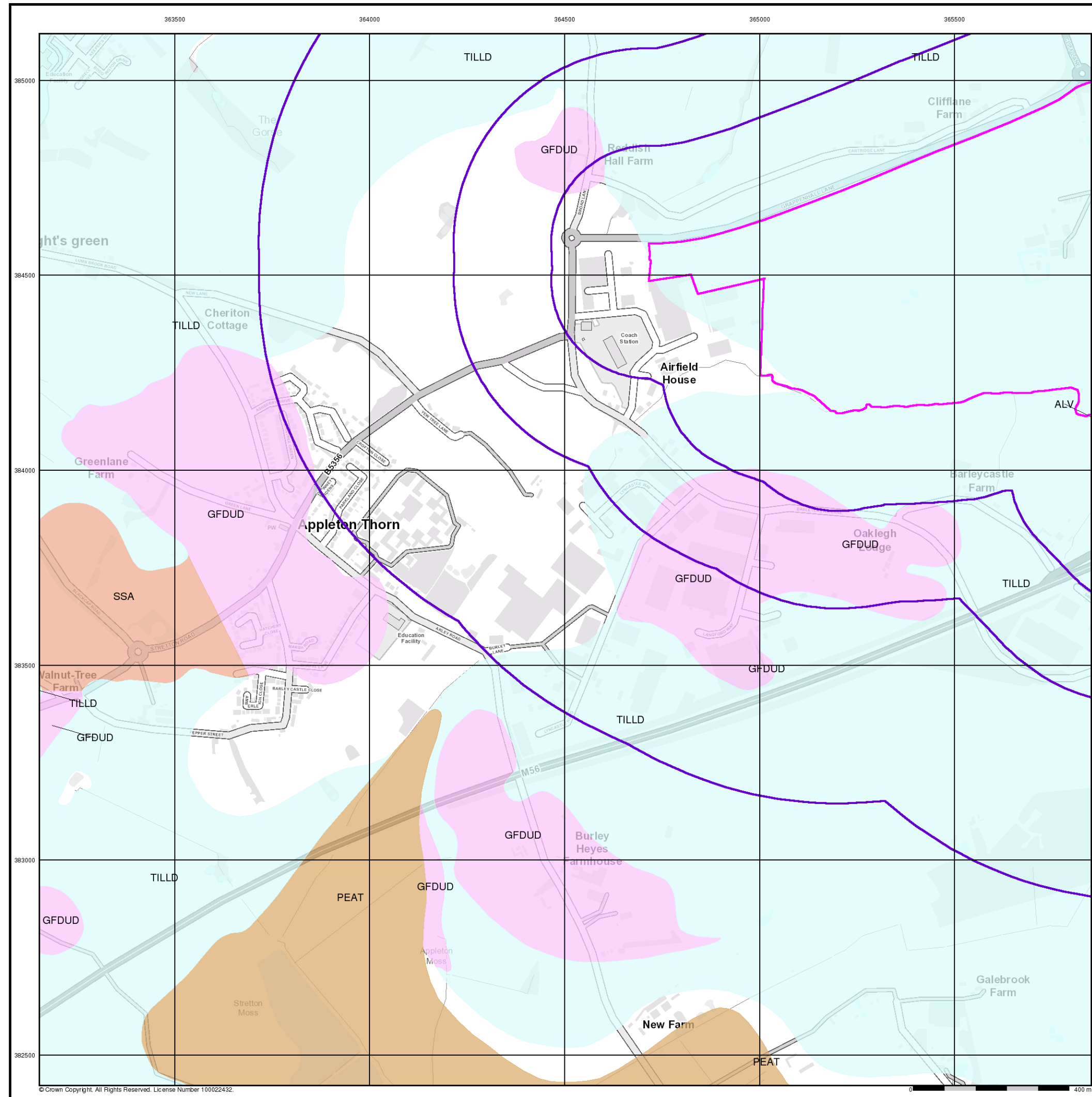


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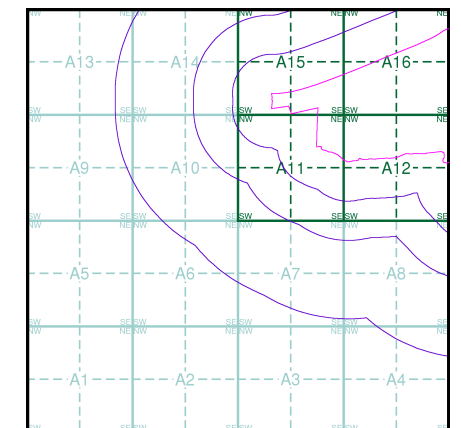
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

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Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A

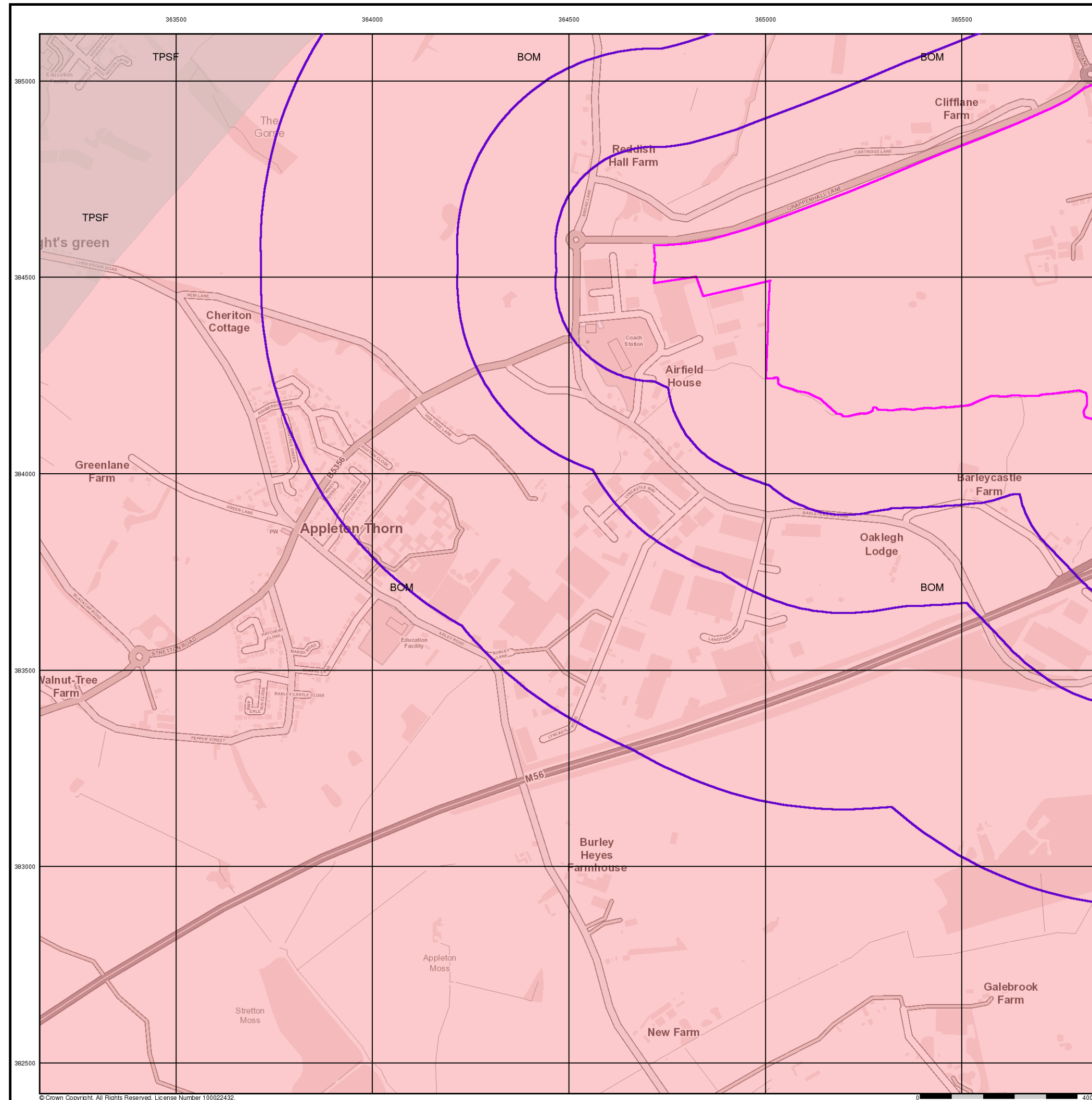


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 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



Bedrock and Faults

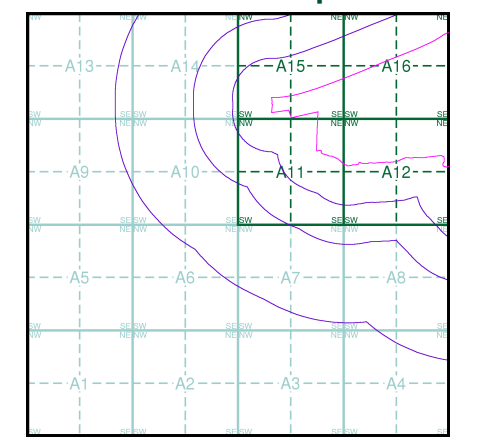
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A

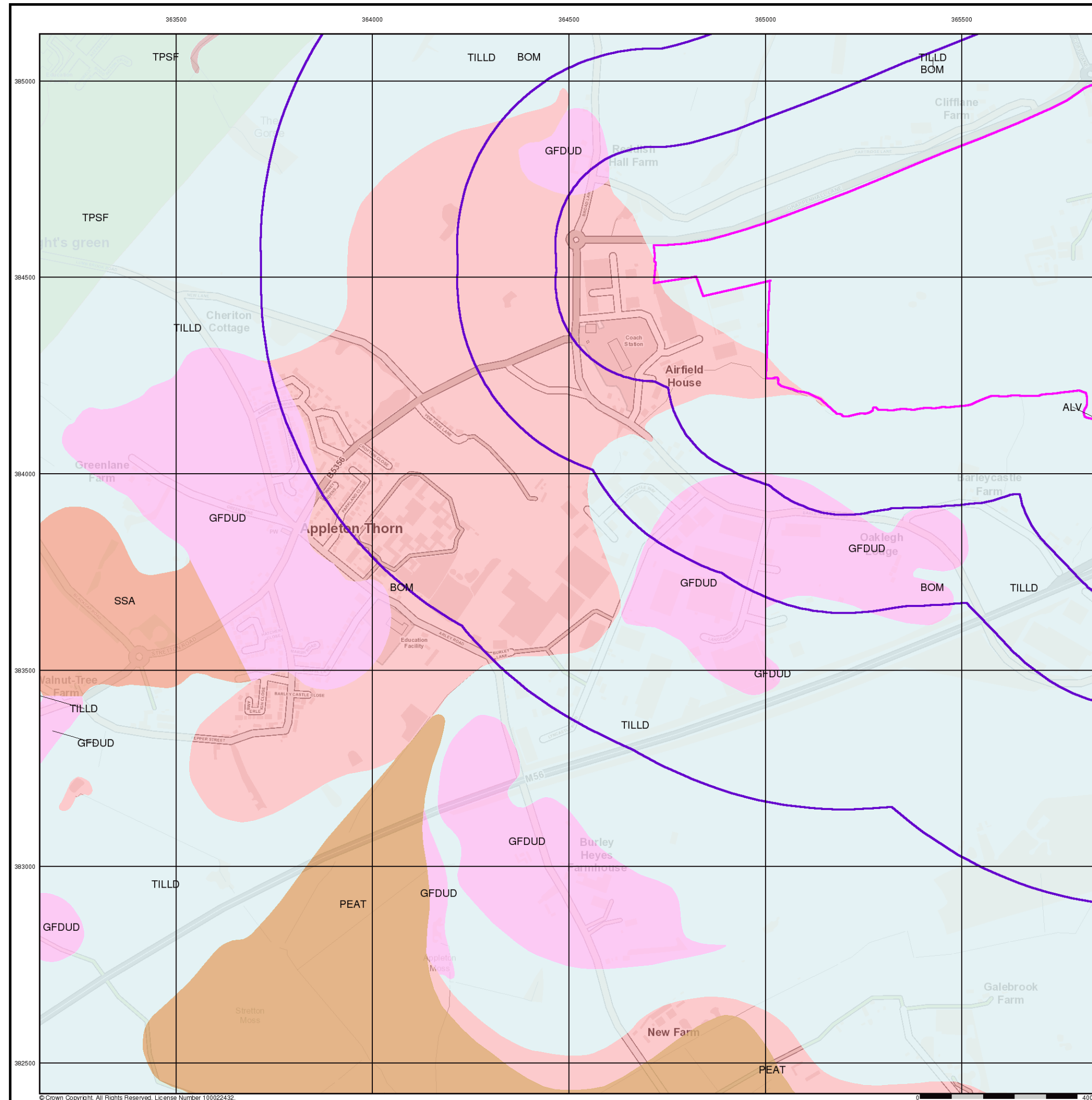


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

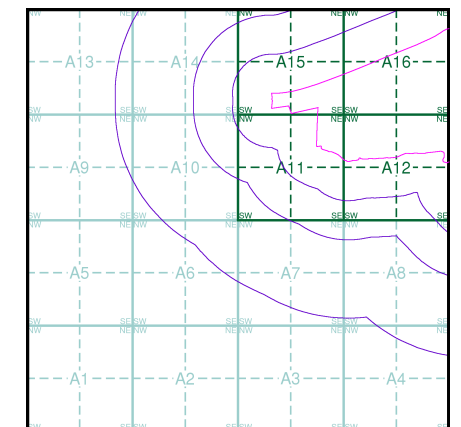
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

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 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

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 Customer Ref: 1015524 - Warrington Interchange MP
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 Site Area (Ha): 93.66
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
Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Geology 1:10,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	SUPNM	Superficial Theme Not Mapped [For Digital Map Use Only]	Unknown/Unclassified Entry	Not Supplied - Not Supplied
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Ipswichian
	SSA	Shirdley Hill Sand Formation	Sand	Flandrian - Ipswichian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	BOM	Bollin Mudstone Member	Mudstone	Anisian - Anisian

Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

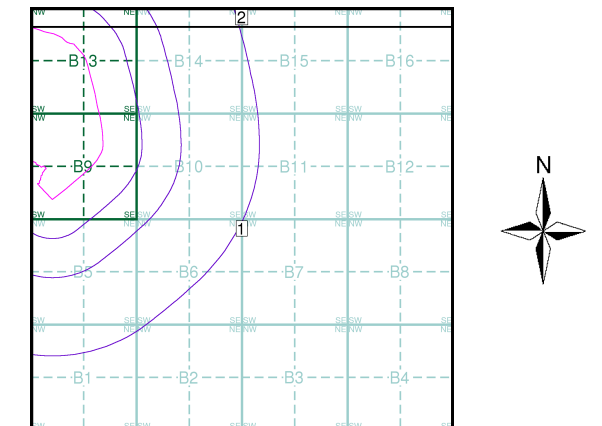
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	2	Map ID:	1
Map Name:	SJ68NE	Map Name:	SJ68SE
Map Date:	1960	Map Date:	1960
Bedrock Geology:	Available	Bedrock Geology:	Available
Superficial Geology:	Available	Superficial Geology:	Available
Artificial Geology:	Not Available	Artificial Geology:	Not Available
Faults:	Available	Faults:	Not Available
Landslip:	Not Available	Landslip:	Not Available
Rock Segments:	Not Available	Rock Segments:	Not Available

Geology 1:10,000 Maps - Slice B

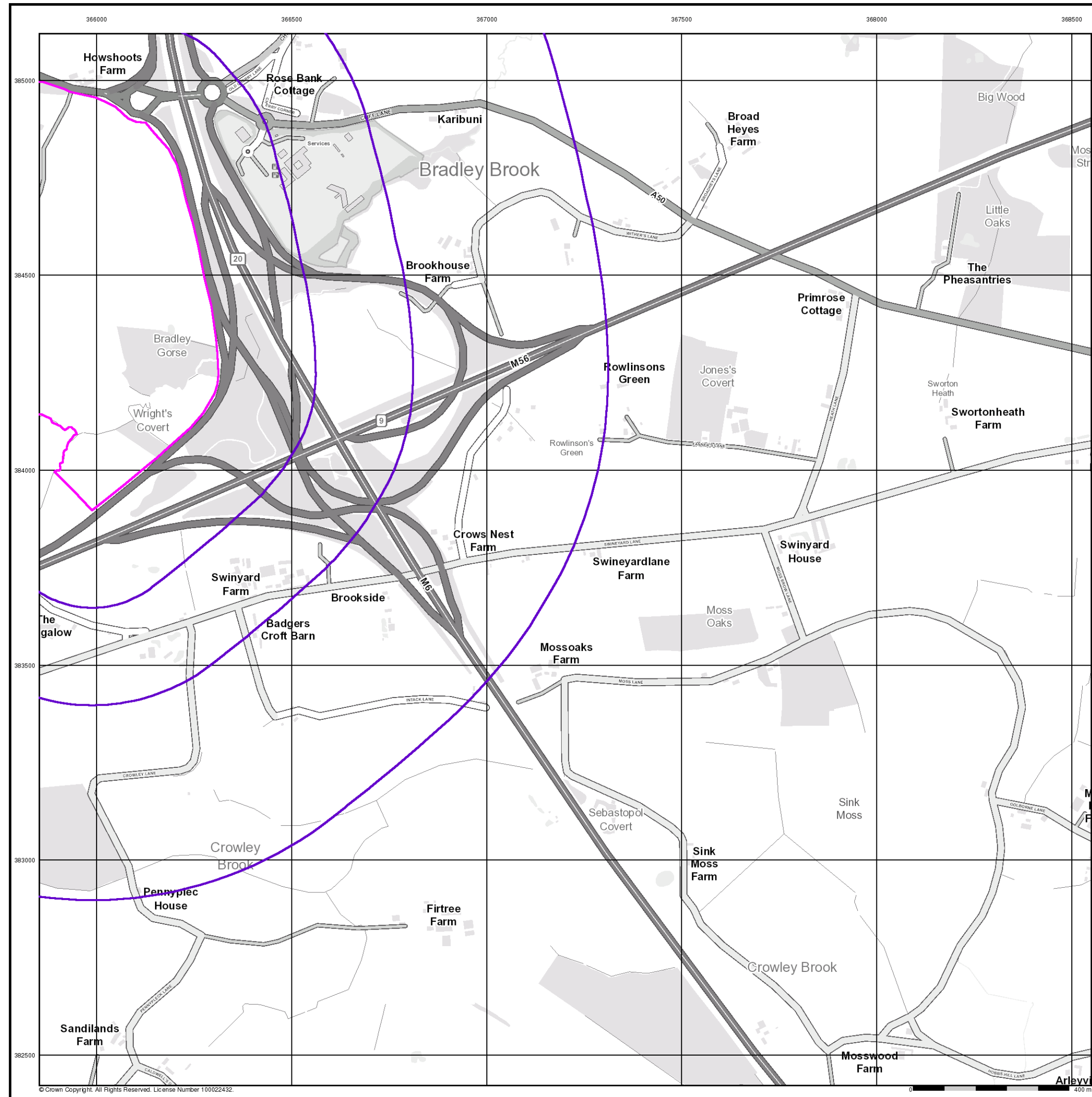


Order Details

Order Number:	135773225_1_1
Customer Ref:	1015524 - Warrington Interchange MP
National Grid Reference:	366500, 384120
Slice:	B
Site Area (Ha):	93.66
Search Buffer (m):	1000

Site Details

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Artificial Ground and Landslip

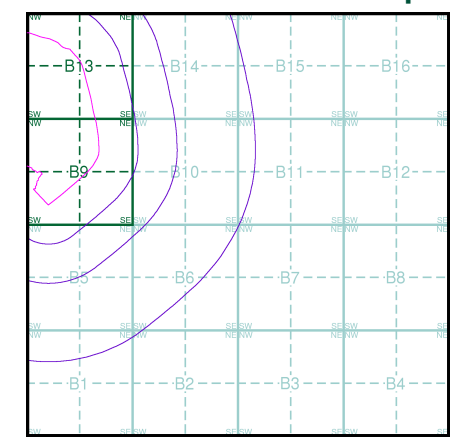
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice B

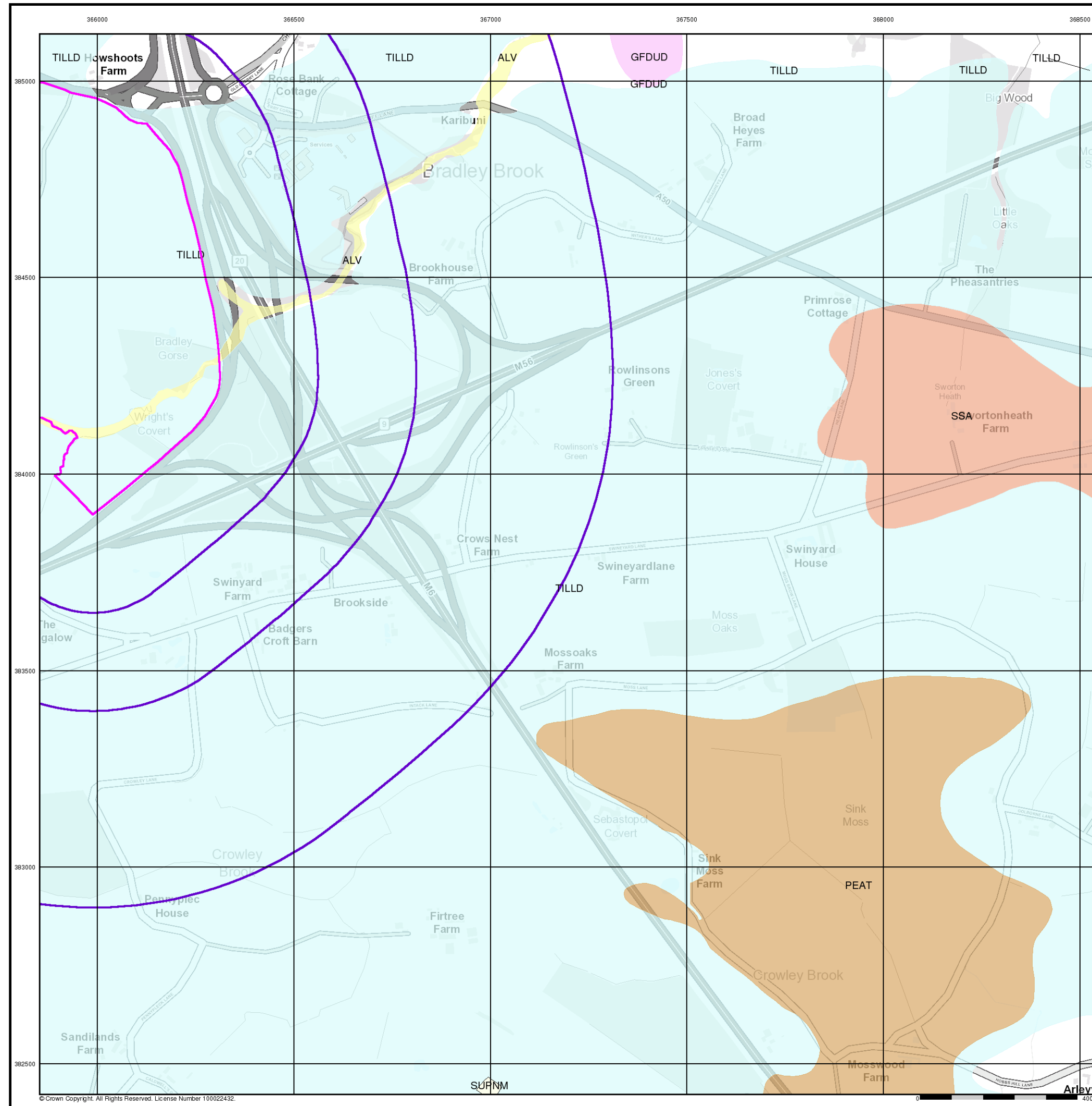


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
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Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



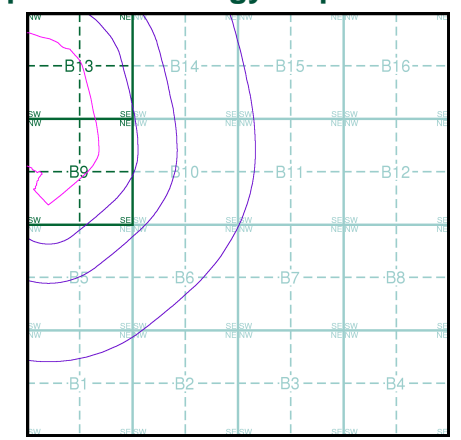
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice B

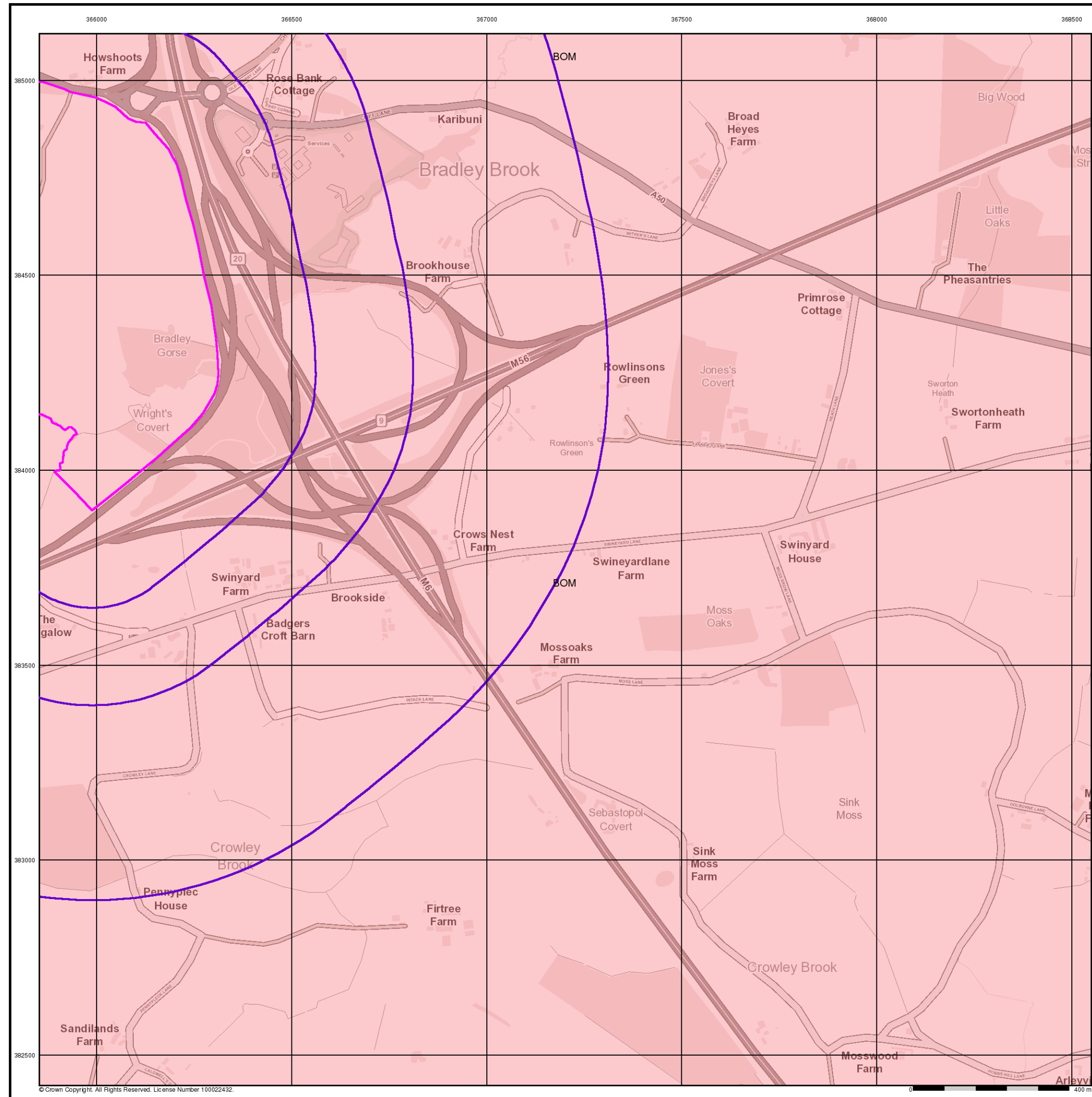


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 Slice: B
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Site Details

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Bedrock and Faults

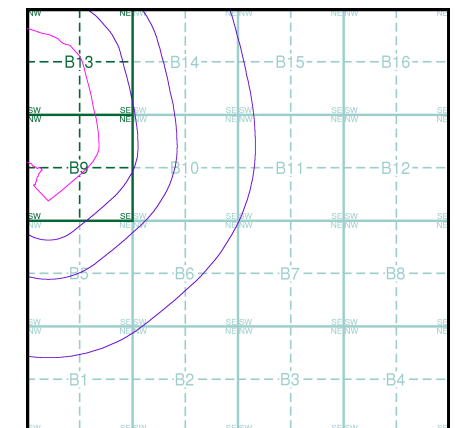
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Bedrock and Faults Map - Slice B

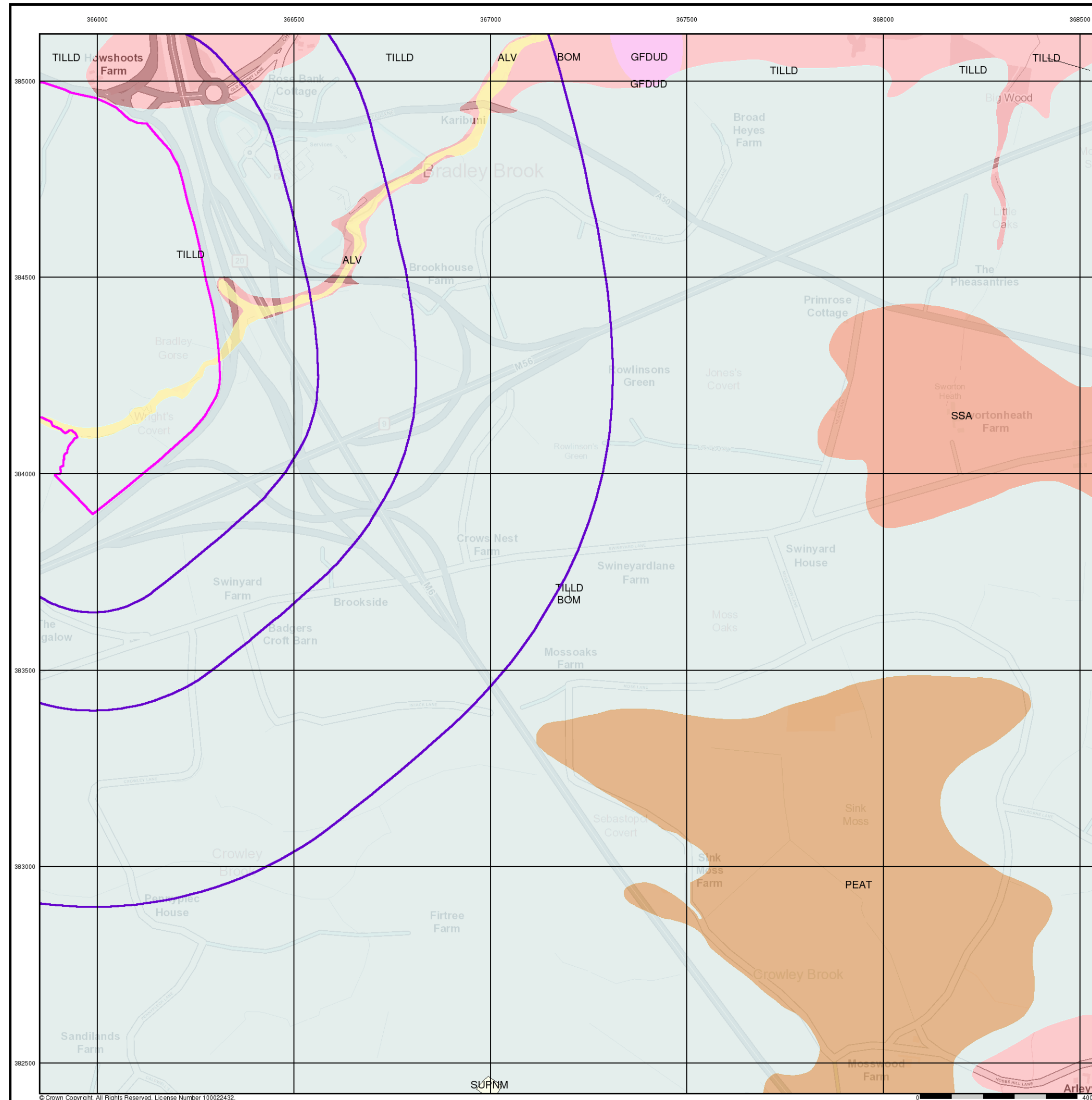


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Combined Surface Geology

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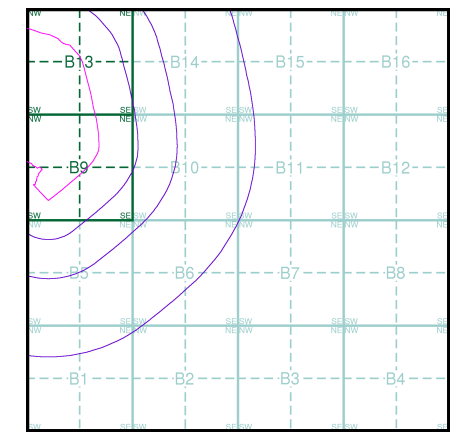
Additional Information

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Combined Geology Map - Slice B



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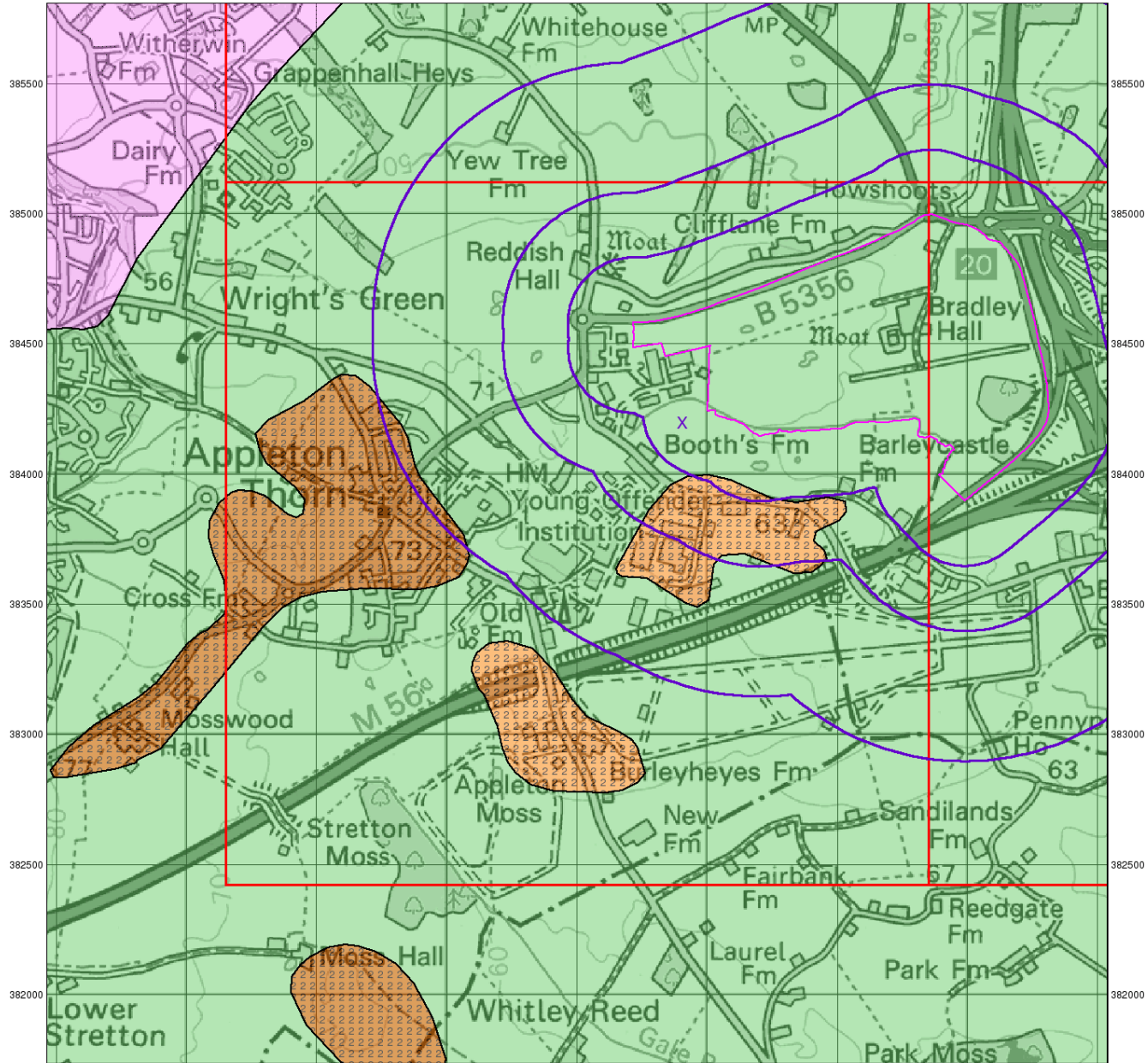
Site Details

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0 1 km

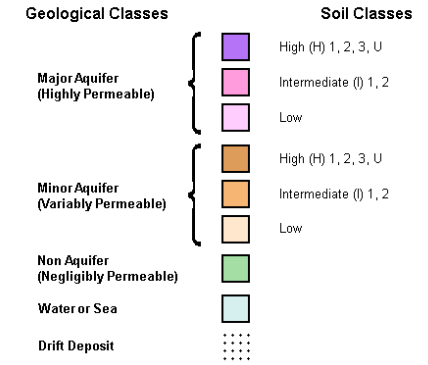
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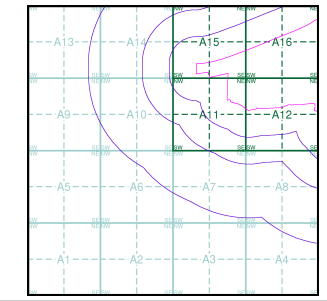
Groundwater Vulnerability

General
 Specified Site (pink outline) Specified Buffer(s) (purple outline) Bearing Reference Point (X)
 Slice (red outline) Map ID (B)

Agency and Hydrological



Site Sensitivity Context Map - Slice A



Order Details

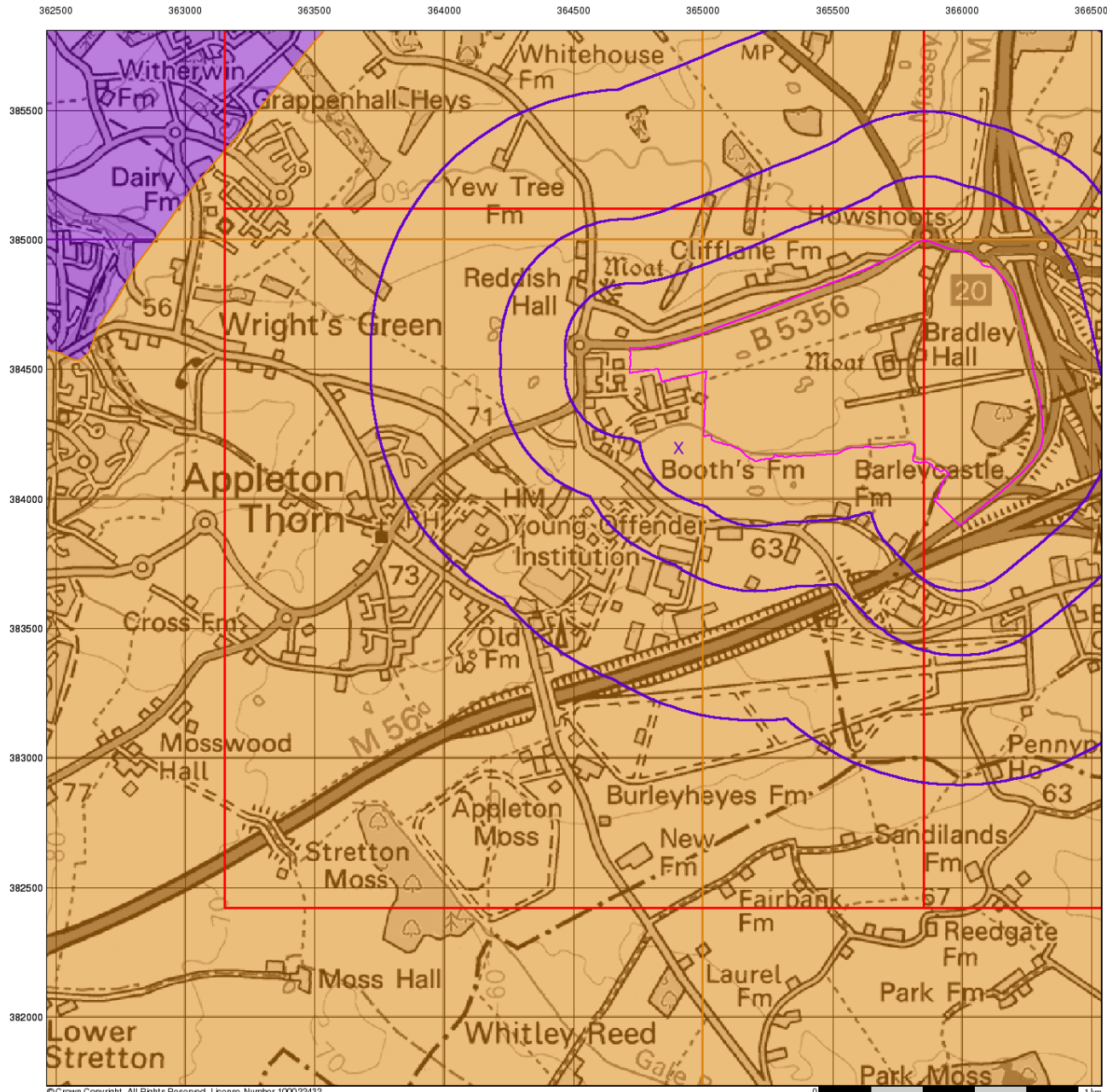
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 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

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Bedrock Aquifer Designation

General

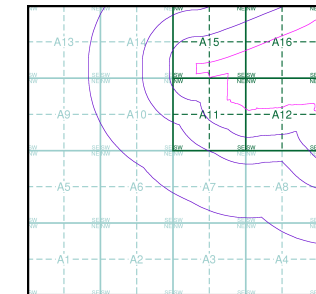
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

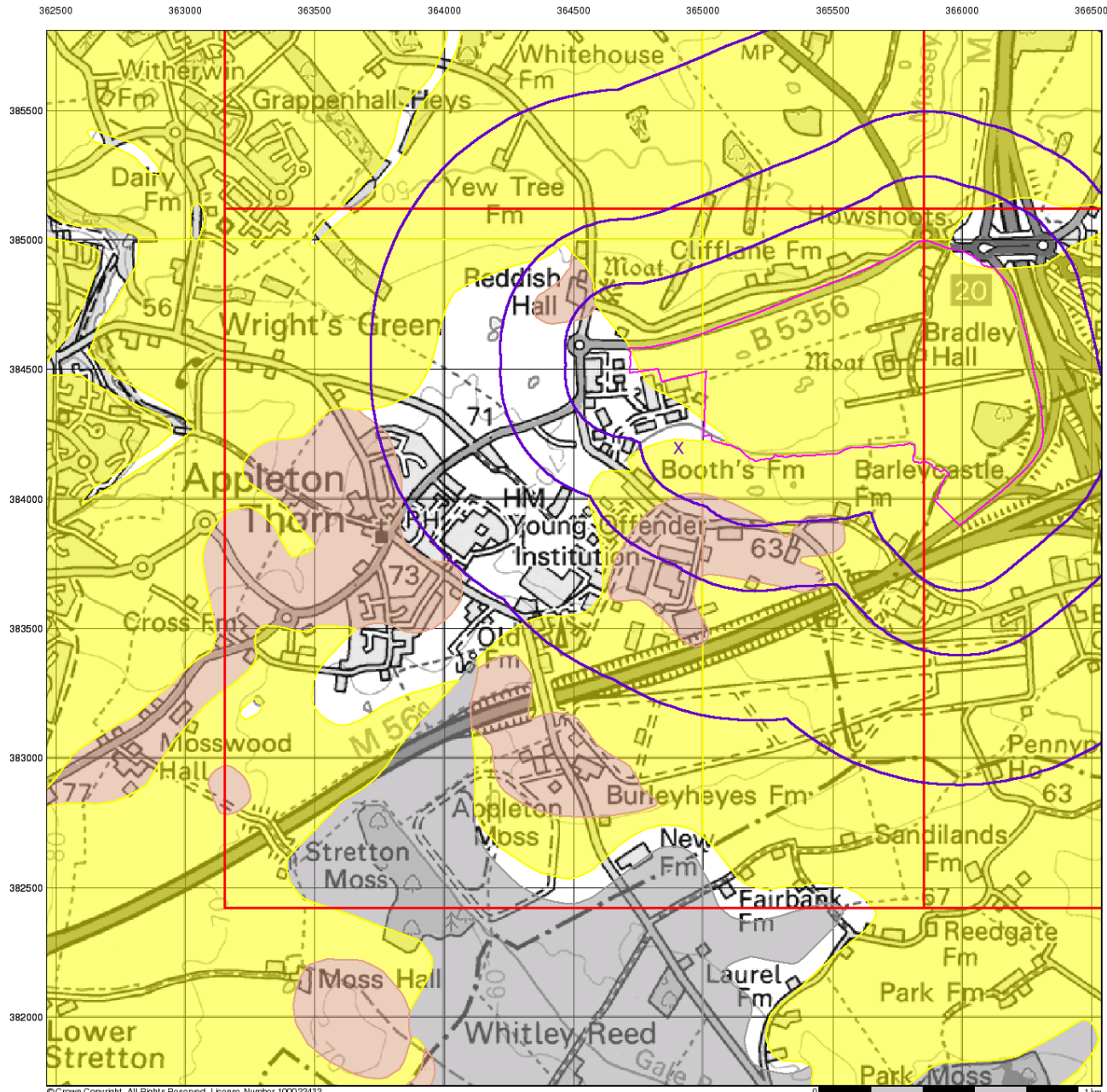
Order Number: 135773225_1_1
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 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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Superficial Aquifer Designation

General

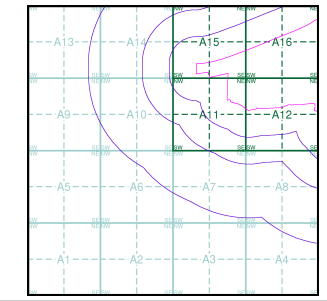
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

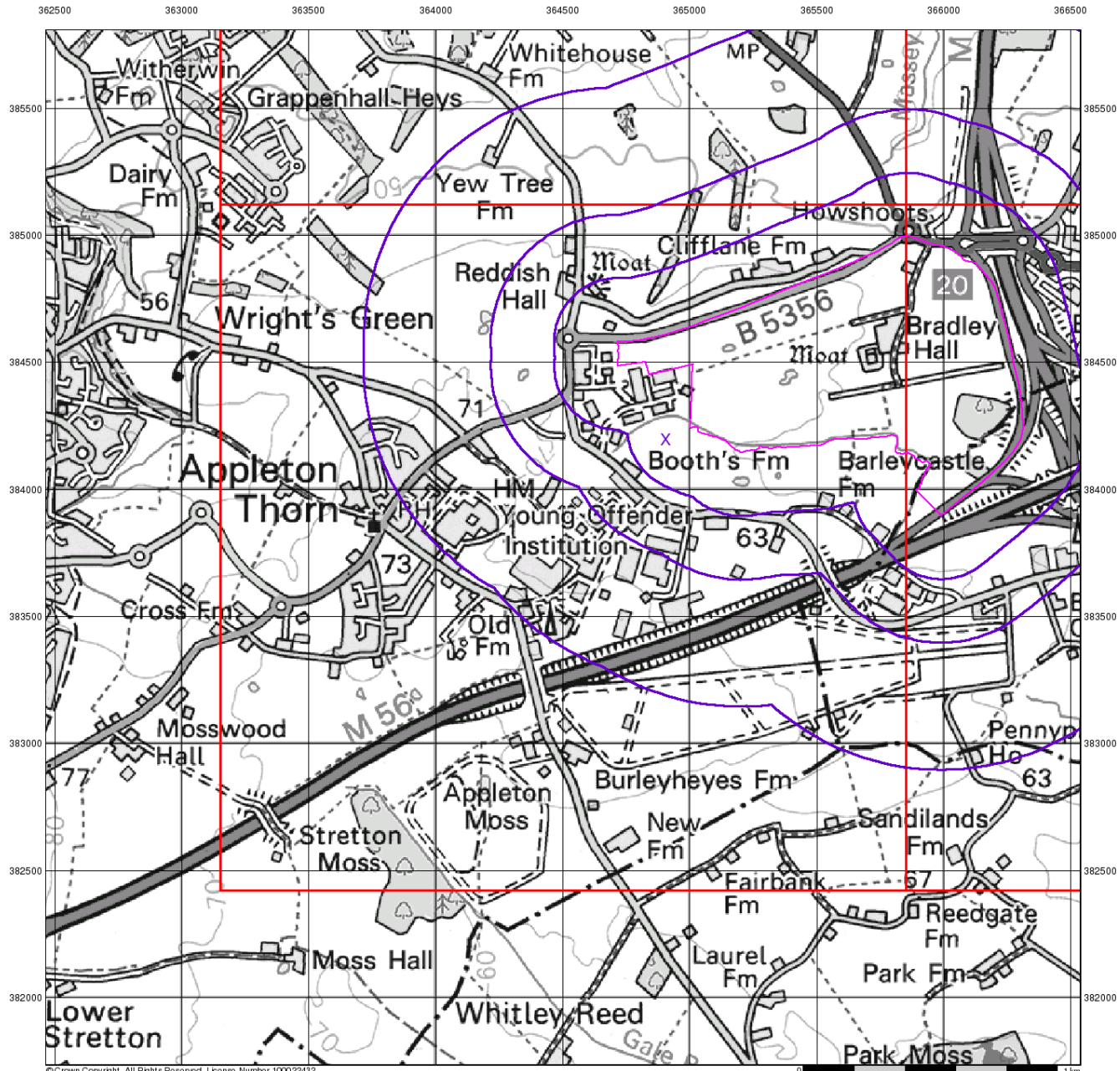
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Source Protection Zones

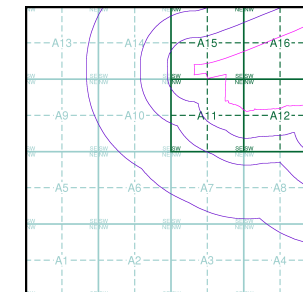
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A



Order Details

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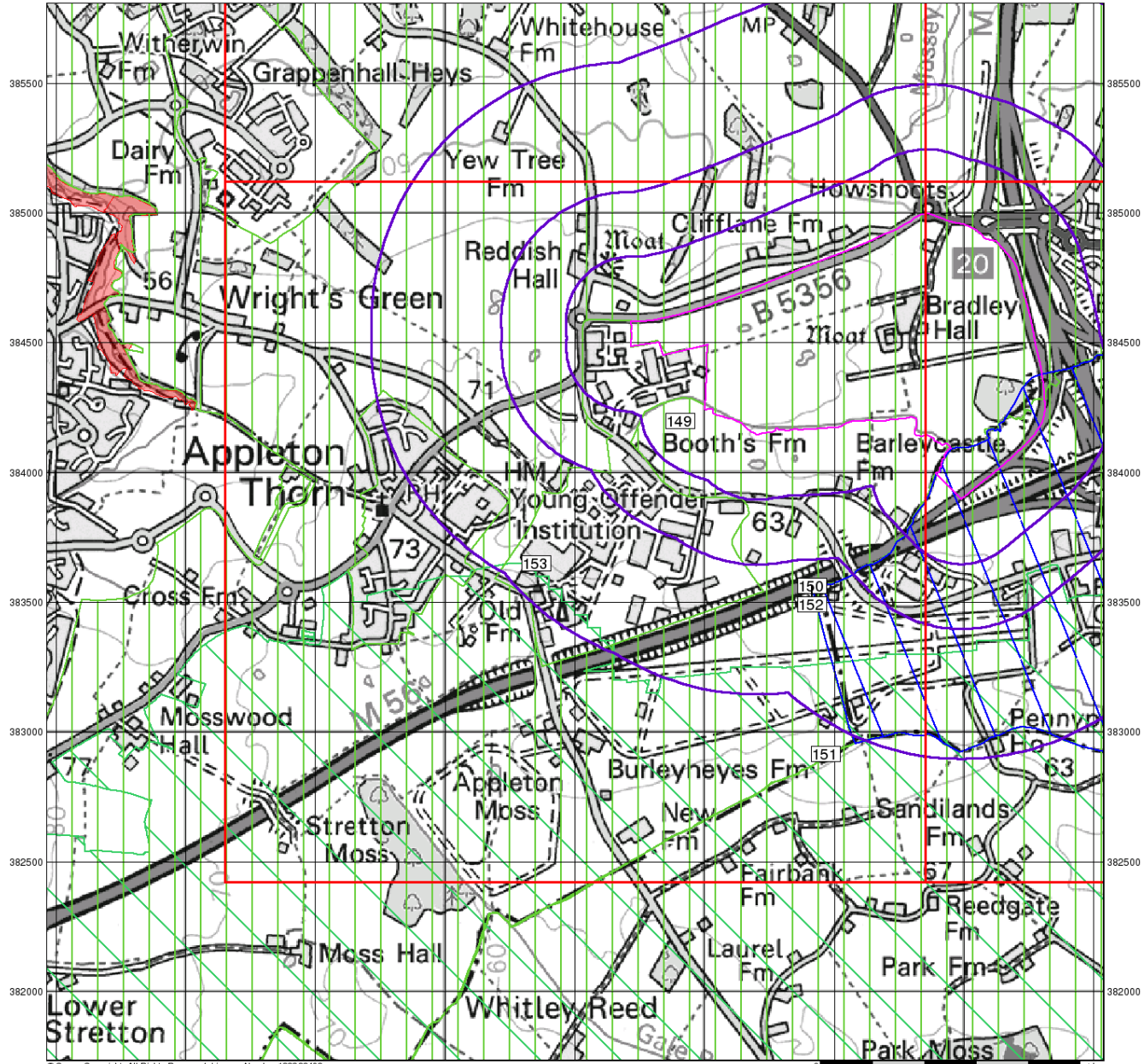
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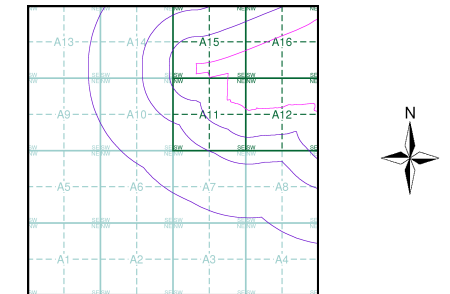
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Sensitive Land Uses

- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Slice
 - Map ID

- Sensitive Land Uses**
- Ancient Woodland
 - Area of Adopted Green Belt
 - Area of Unadopted Green Belt
 - Area of Outstanding Natural Beauty
 - Environmentally Sensitive Area
 - Forest Park
 - Local Nature Reserve
 - Marine Nature Reserve
 - National Nature Reserve
 - National Park
 - Nitrate Sensitive Area
 - Nitrate Vulnerable Zone
 - Ramsar Site
 - Site of Special Scientific Interest
 - Special Area of Conservation
 - Special Protection Area
 - World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

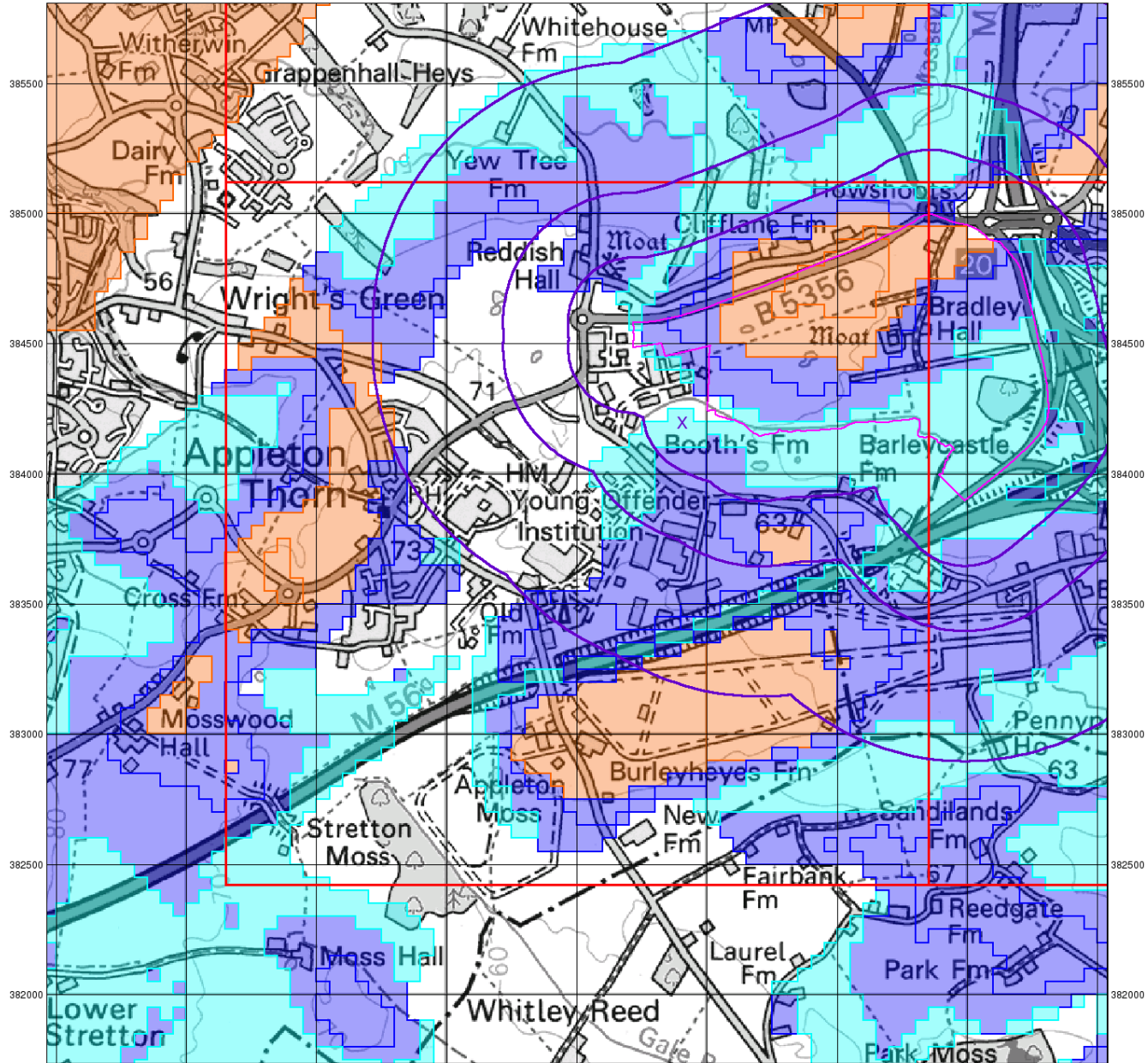
Order Number: 135773225_1_1
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BGS Flood GFS Data

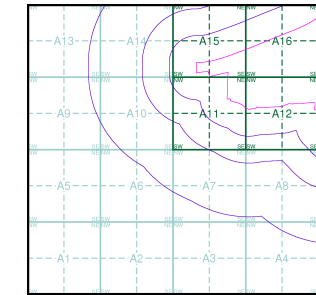
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

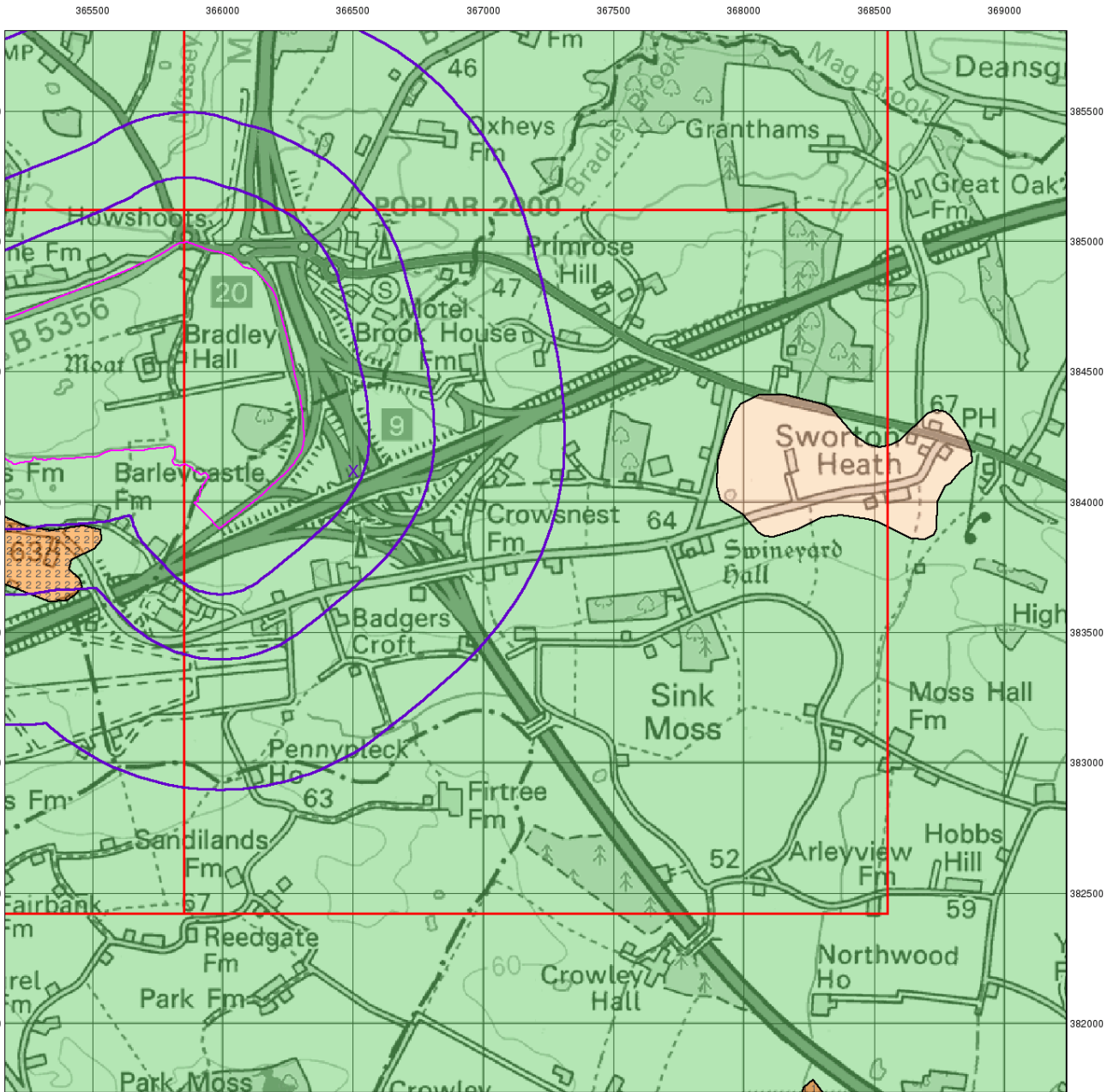
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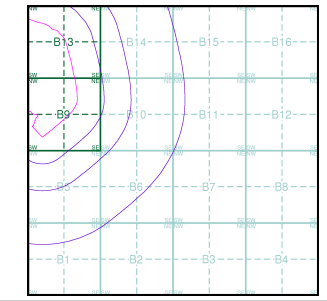
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Groundwater Vulnerability

- General**
- ◆ Specified Site
 - Specified Buffer(s)
 - ✕ Bearing Reference Point
 - Slice
 - B Map ID

- Agency and Hydrological**
- | | |
|---|--|
| Geological Classes | Soil Classes |
| <ul style="list-style-type: none"> Major Aquifer (Highly Permeable) Intermediate (I) 1, 2 Low Minor Aquifer (Variably Permeable) High (H) 1, 2, 3, U Intermediate (I) 1, 2 Low Non Aquifer (Negligibly Permeable) Water or Sea Drift Deposit | <ul style="list-style-type: none"> High (H) 1, 2, 3, U Intermediate (I) 1, 2 Low High (H) 1, 2, 3, U Intermediate (I) 1, 2 Low Non Aquifer (Negligibly Permeable) Water or Sea Drift Deposit |

Site Sensitivity Context Map - Slice B

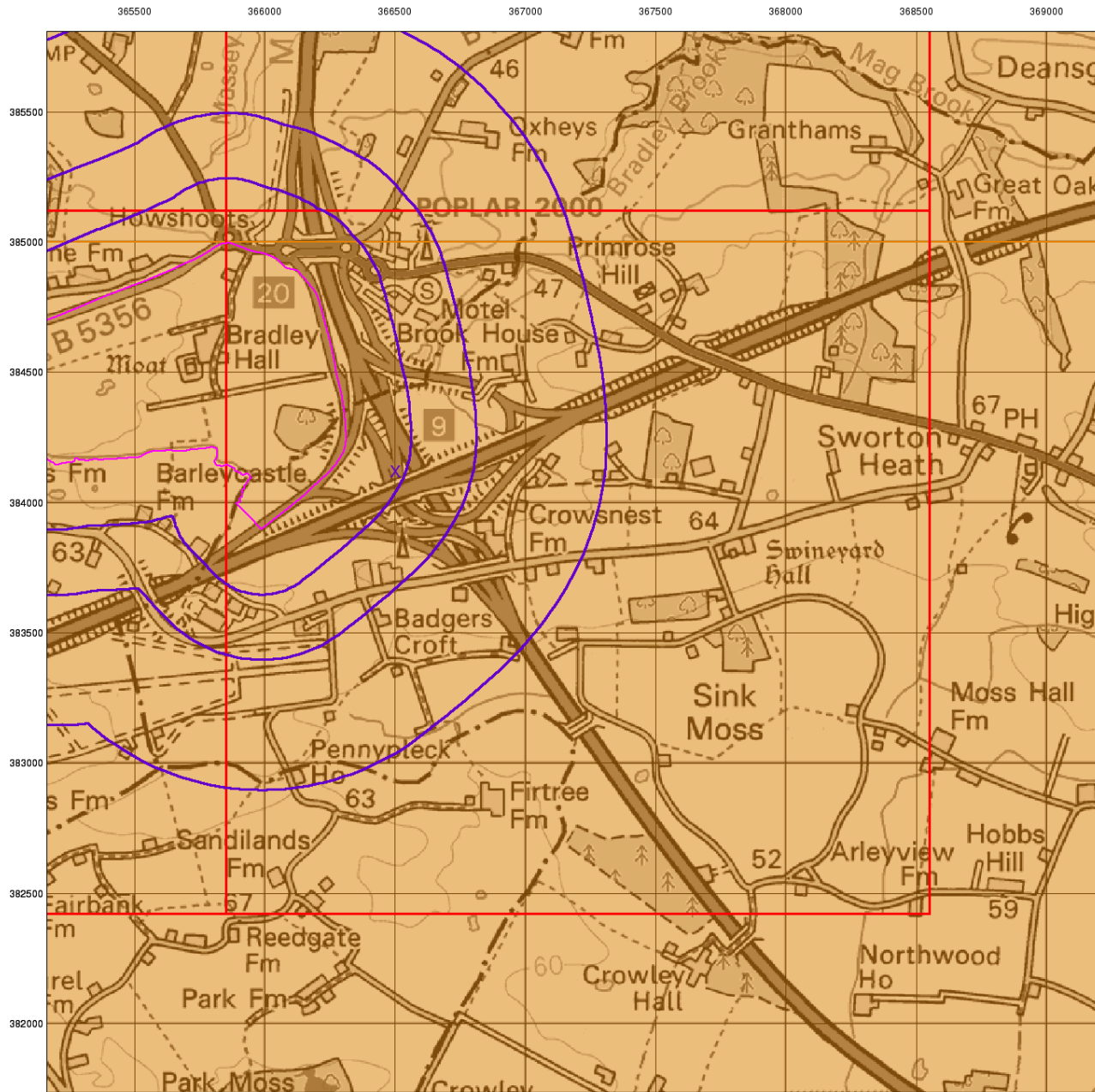


- Order Details**
- Order Number: 135773225_1_1
 - Customer Ref: 1015524 - Warrington Interchange MP
 - National Grid Reference: 366500, 384120
 - Slice: B
 - Site Area (Ha): 93.66
 - Search Buffer (m): 1000

- Site Details**
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0 1 km

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Bedrock Aquifer Designation

General

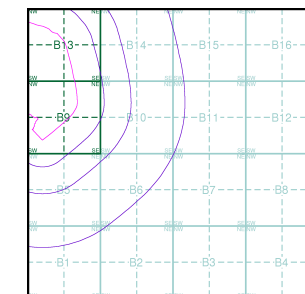
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice B



Order Details

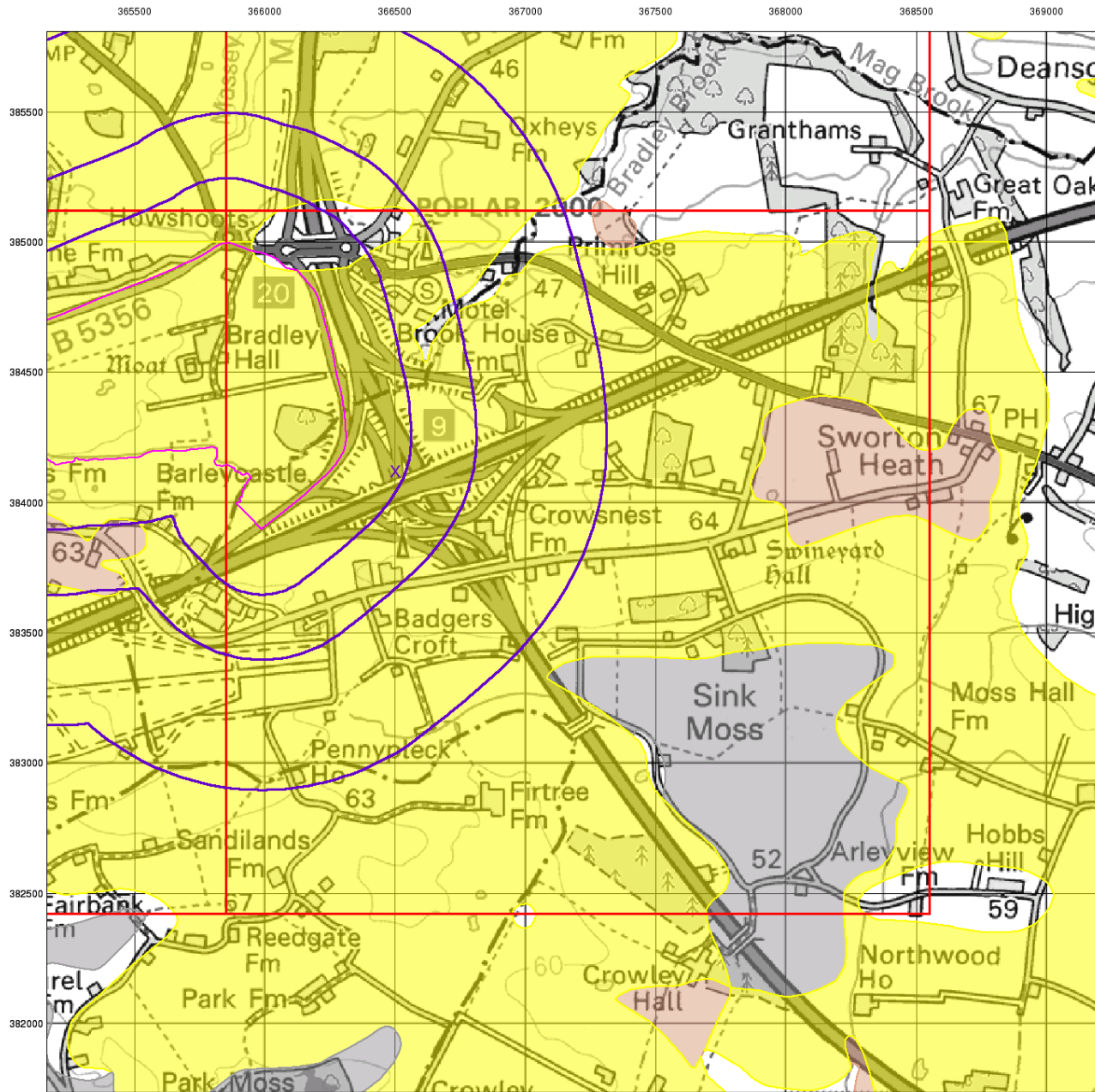
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 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
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Superficial Aquifer Designation

General

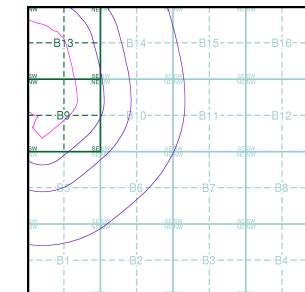
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice B



Order Details

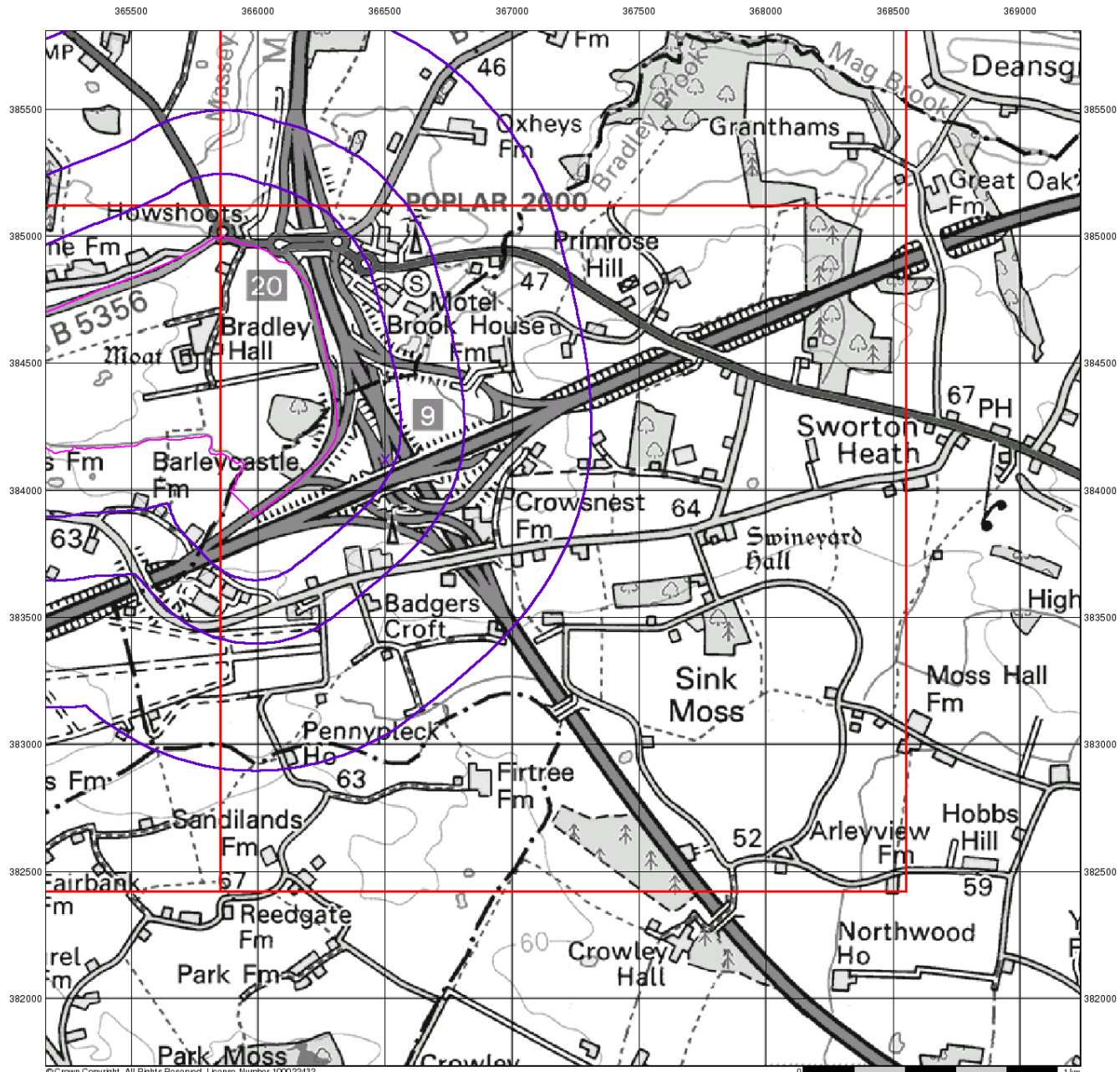
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Envirocheck®

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Source Protection Zones

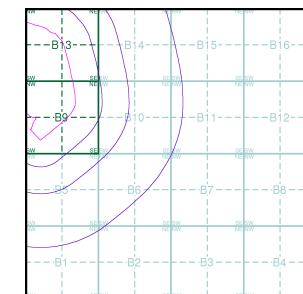
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice B



Order Details

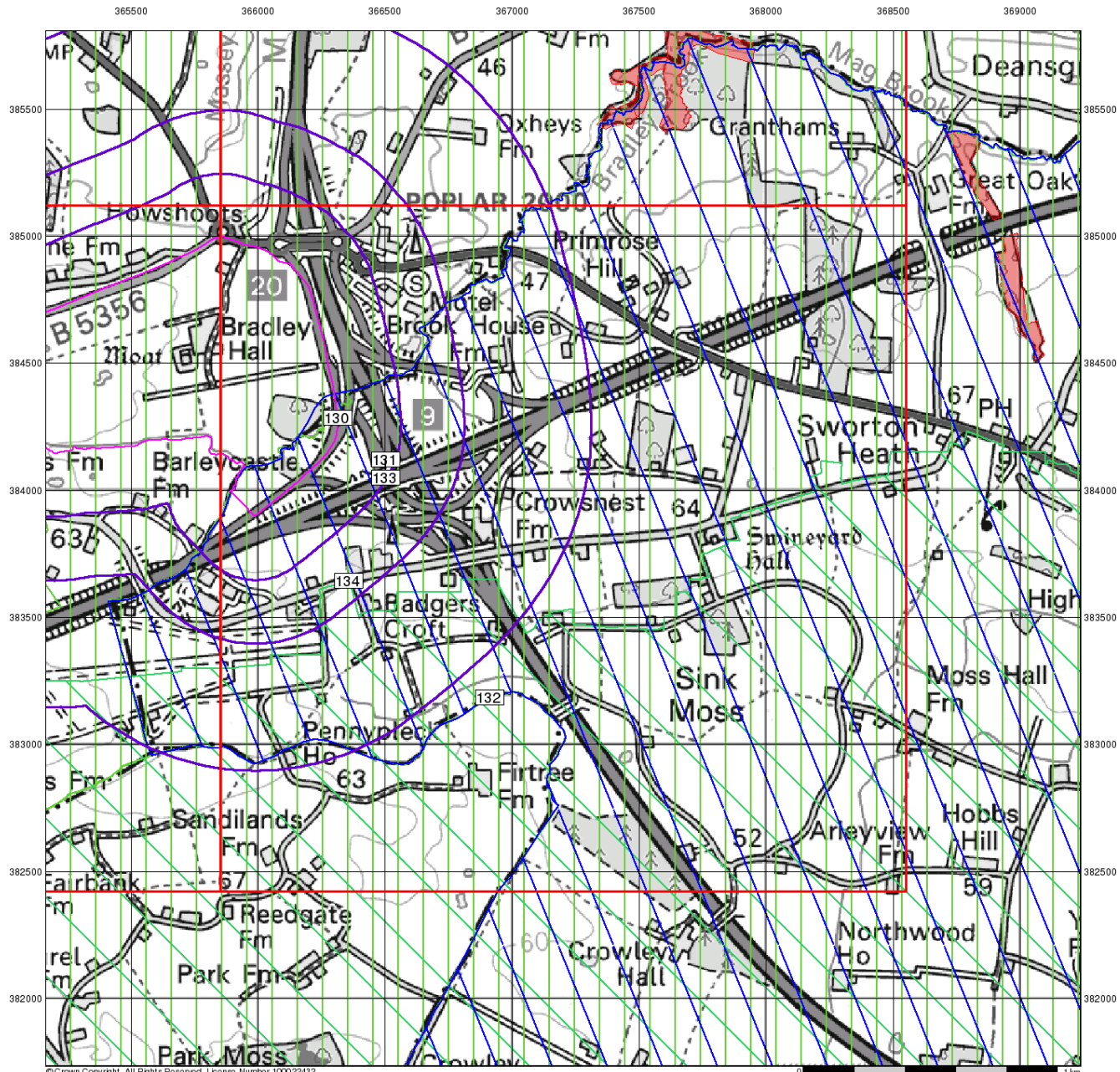
Order Number:	135773225_1_1
Customer Ref:	1015524 - Warrington Interchange MP
National Grid Reference:	366500, 384120
Slice:	B
Site Area (Ha):	93.66
Search Buffer (m):	1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

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Sensitive Land Uses

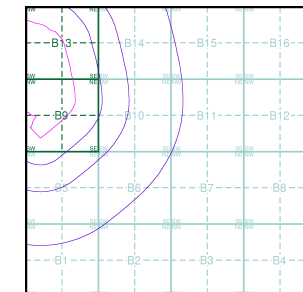
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice B



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

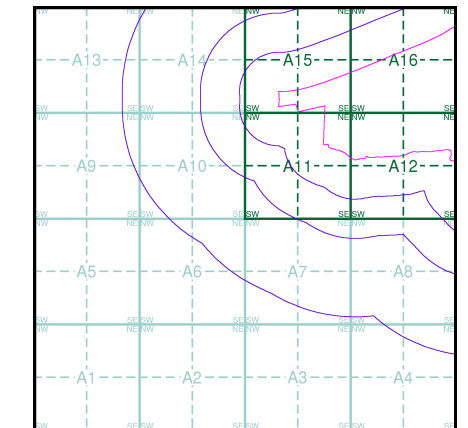
Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

- | | | | | |
|--------------------------------|--|---|---|--|
| General | Specified Site | Specified Buffer(s) | X Bearing Reference Point | Map ID |
| | Several of Type at Location | | | |
| Agency and Hydrological | Contaminated Land Register Entry or Notice (Location) | Discharge Consent | Enforcement or Prohibition Notice | Integrated Pollution Control |
| | Contaminated Land Register Entry or Notice | Local Authority Integrated Pollution Prevention and Control | Local Authority Pollution Prevention and Control | Local Authority Pollution Prevention and Control Enforcement |
| | Pollution Incident to Controlled Waters | Prosecution Relating to Authorised Processes | Prosecution Relating to Controlled Waters | Registered Radioactive Substance |
| | River Network or Water Feature | River Quality Sampling Point | Substantiated Pollution Incident Register | Water Abstraction |
| | Water Industry Act Referral | | | |
| Hazardous Substances | COMAH Site | Explosive Site | NIHHS Site | Planning Hazardous Substance Consent |
| | Planning Hazardous Substance Enforcement | | | |
| Geological | BGS Recorded Mineral Site | | | |
| Waste | BGS Recorded Landfill Site (Location) | EA Historic Landfill (Buffered Point) | EA Historic Landfill (Polygon) | Integrated Pollution Control Registered Waste Site |
| | Licensed Waste Management Facility (Landfill Boundary) | Licensed Waste Management Facility (Location) | Local Authority Recorded Landfill Site (Location) | Local Authority Recorded Landfill Site |
| | Potentially Infilled Land (Non-water) | Potentially Infilled Land (Non-water) | Potentially Infilled Land (Water) | Potentially Infilled Land (Water) |
| | Potentially Infilled Land (Water) | Potentially Infilled Land (Water) | Registered Landfill Site (Location) | Registered Landfill Site (Point Buffered to 100m) |
| | Registered Landfill Site (Point Buffered to 250m) | Registered Waste Transfer Site (Location) | Registered Waste Transfer Site | Registered Waste Treatment or Disposal Site (Location) |
| | Registered Waste Treatment or Disposal Site | | | |

Site Sensitivity Map - Slice A

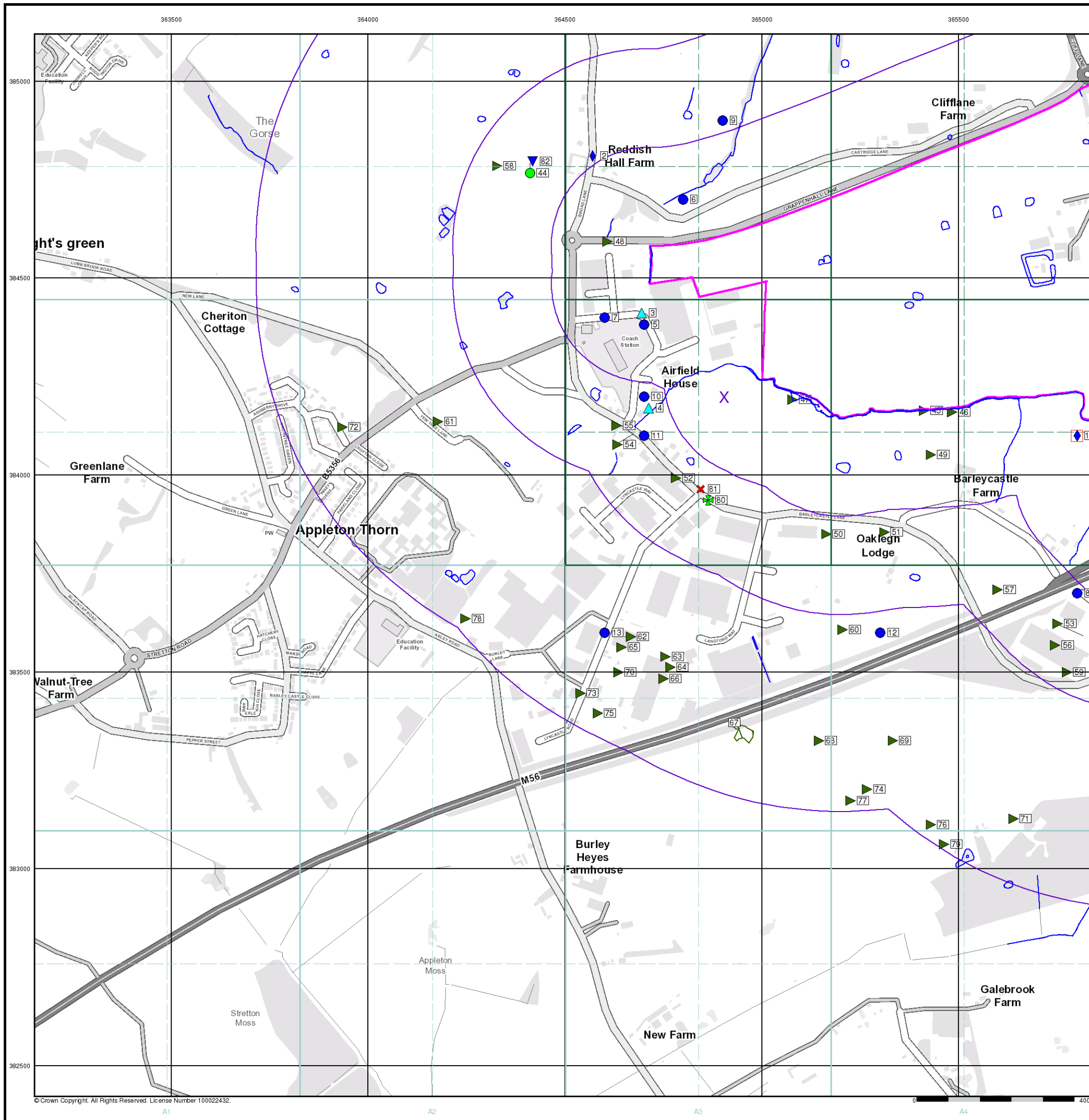


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000






Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR












Industrial Land Use Map

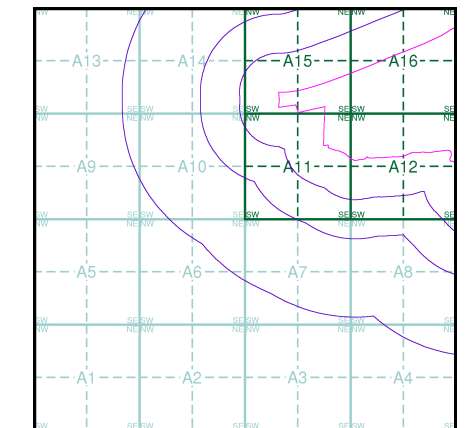
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

Industrial Land Use

-  Contemporary Trade Directory Entry
-  Fuel Station Entry
-  Gas Pipeline
-  Points of Interest - Commercial Services
-  Points of Interest - Education and Health
-  Points of Interest - Manufacturing and Production
-  Points of Interest - Public Infrastructure
-  Points of Interest - Recreational and Environmental
-  Underground Electrical Cables

Industrial Land Use Map - Slice A

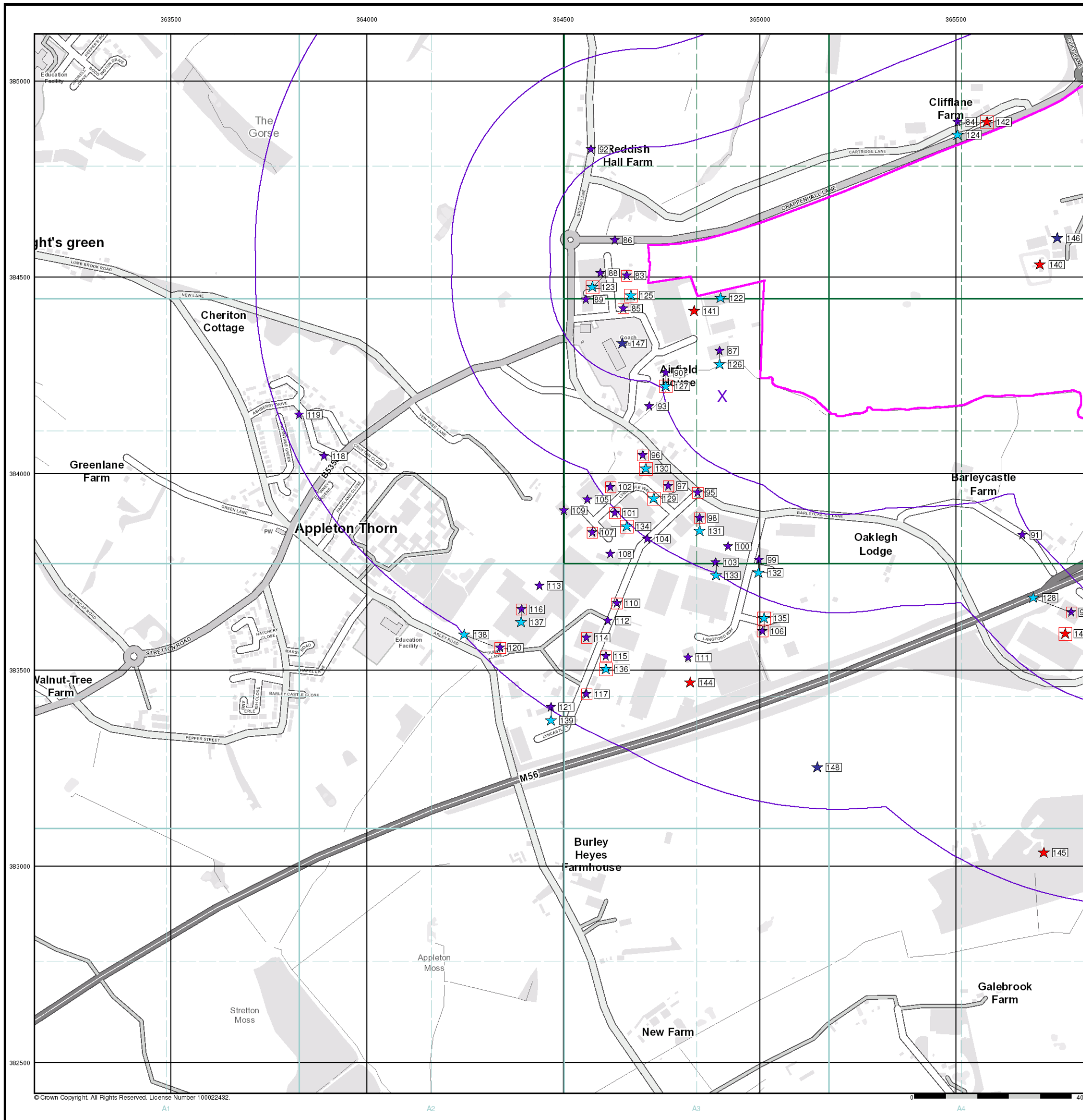


Order Details




Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details






Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



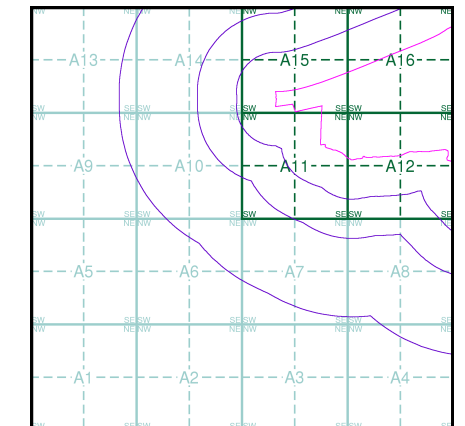
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point

Agency and Hydrological (Flood)

-  Extreme Flooding from Rivers or Sea without Defences (Zone 2)
-  Flooding from Rivers or Sea without Defences (Zone 3)
-  Area Benefiting from Flood Defence
-  Flood Water Storage Areas
-  Flood Defence

Flood Map - Slice A

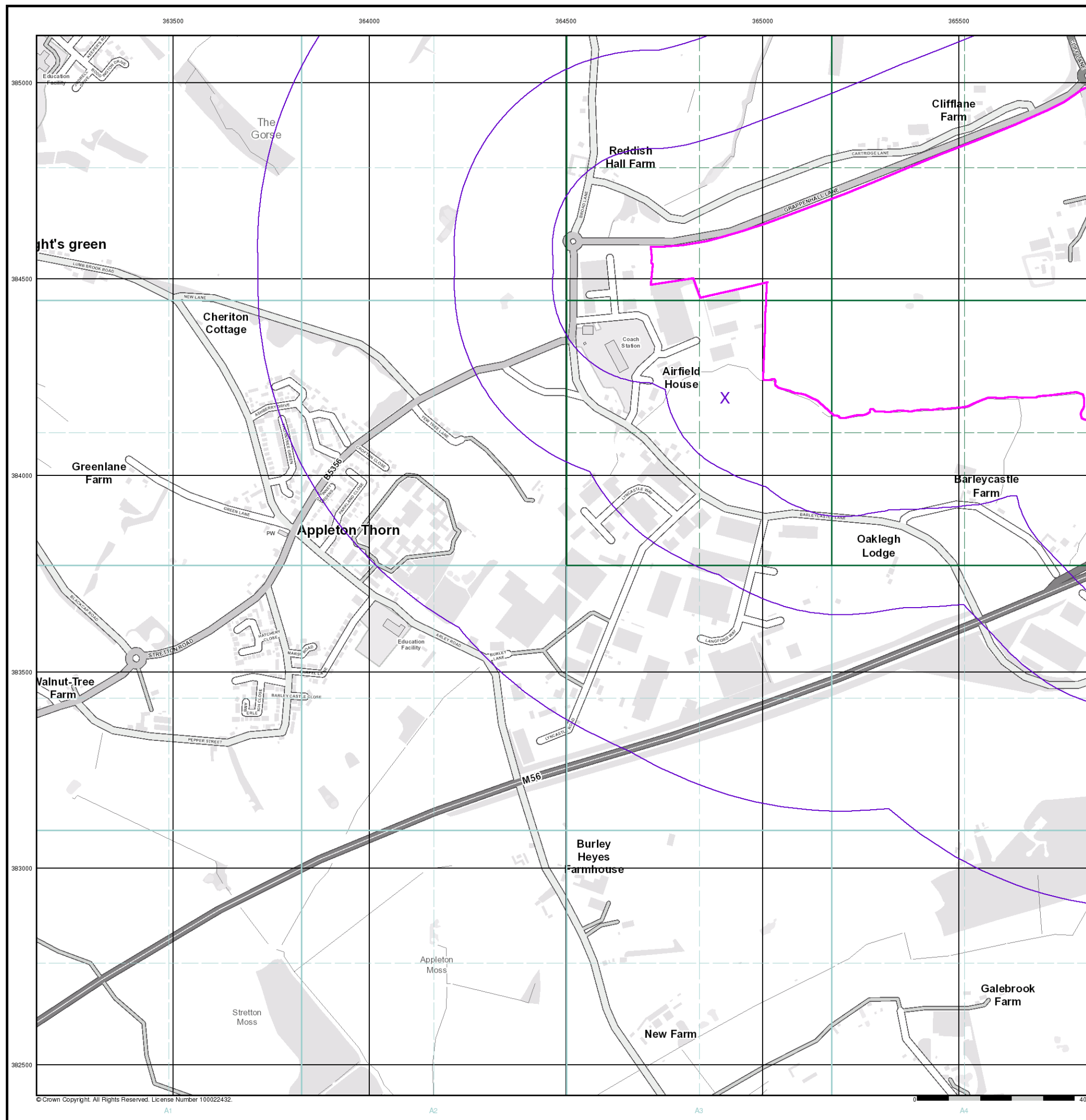


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

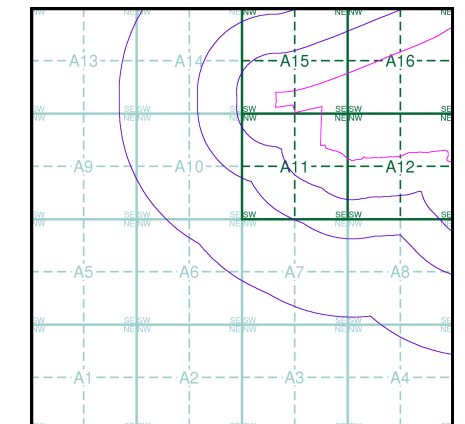
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A

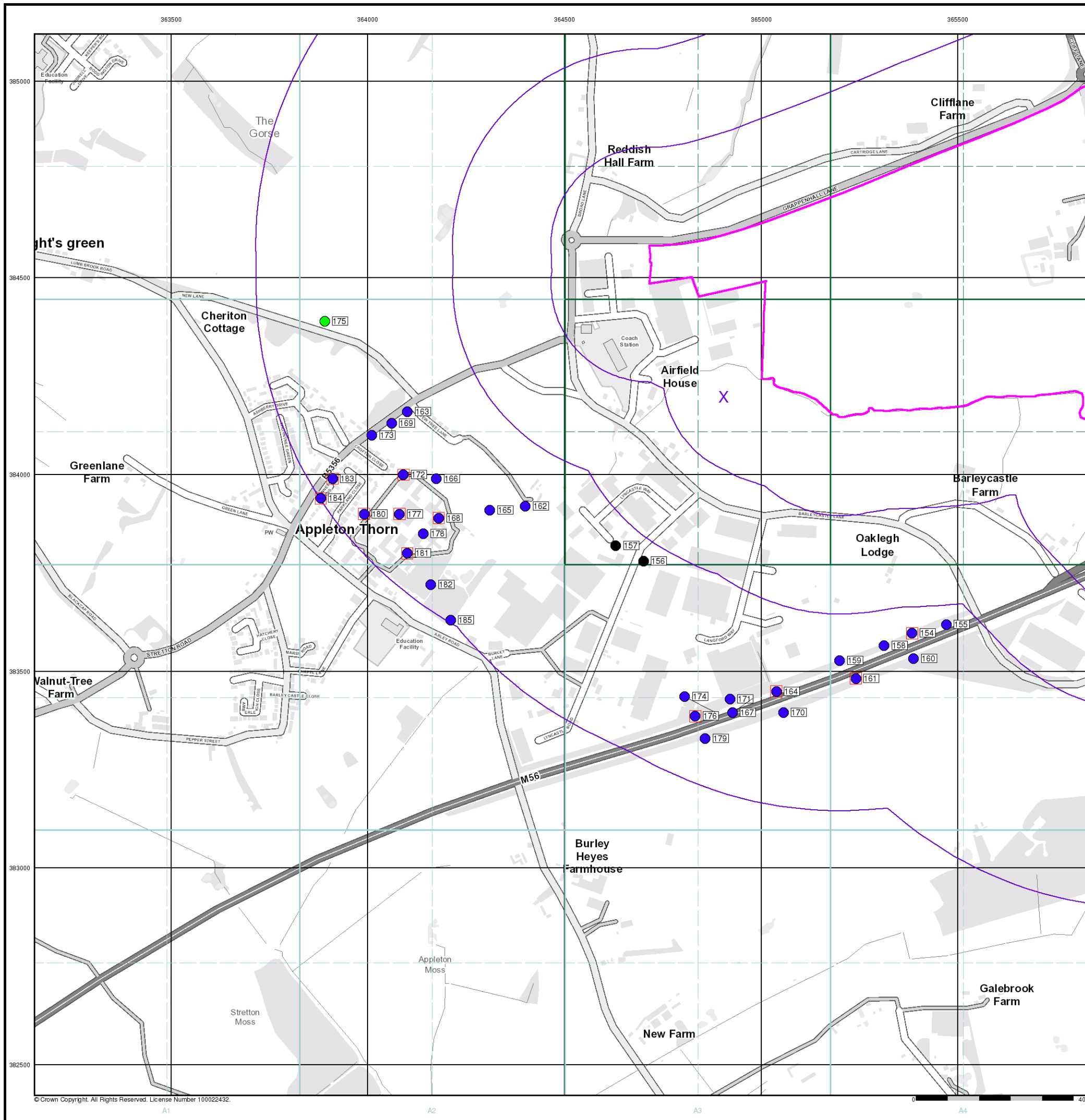


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

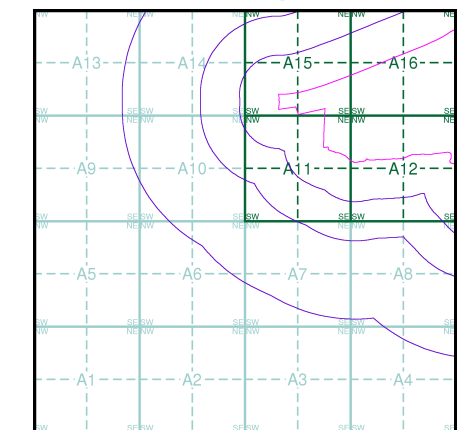
OS Water Network Data

- | | | | |
|--|--------------|--|-------------------------|
| | Canal | | Drain |
| | Reservoir | | Other |
| | Foreshire | | Lake |
| | Marsh | | Transfer |
| | Tidal River | | Lock Or Flight Of Locks |
| | Inland River | | Sea |

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height
- Mean Low Water
- Mean High Water

OS Water Network Map - Slice A

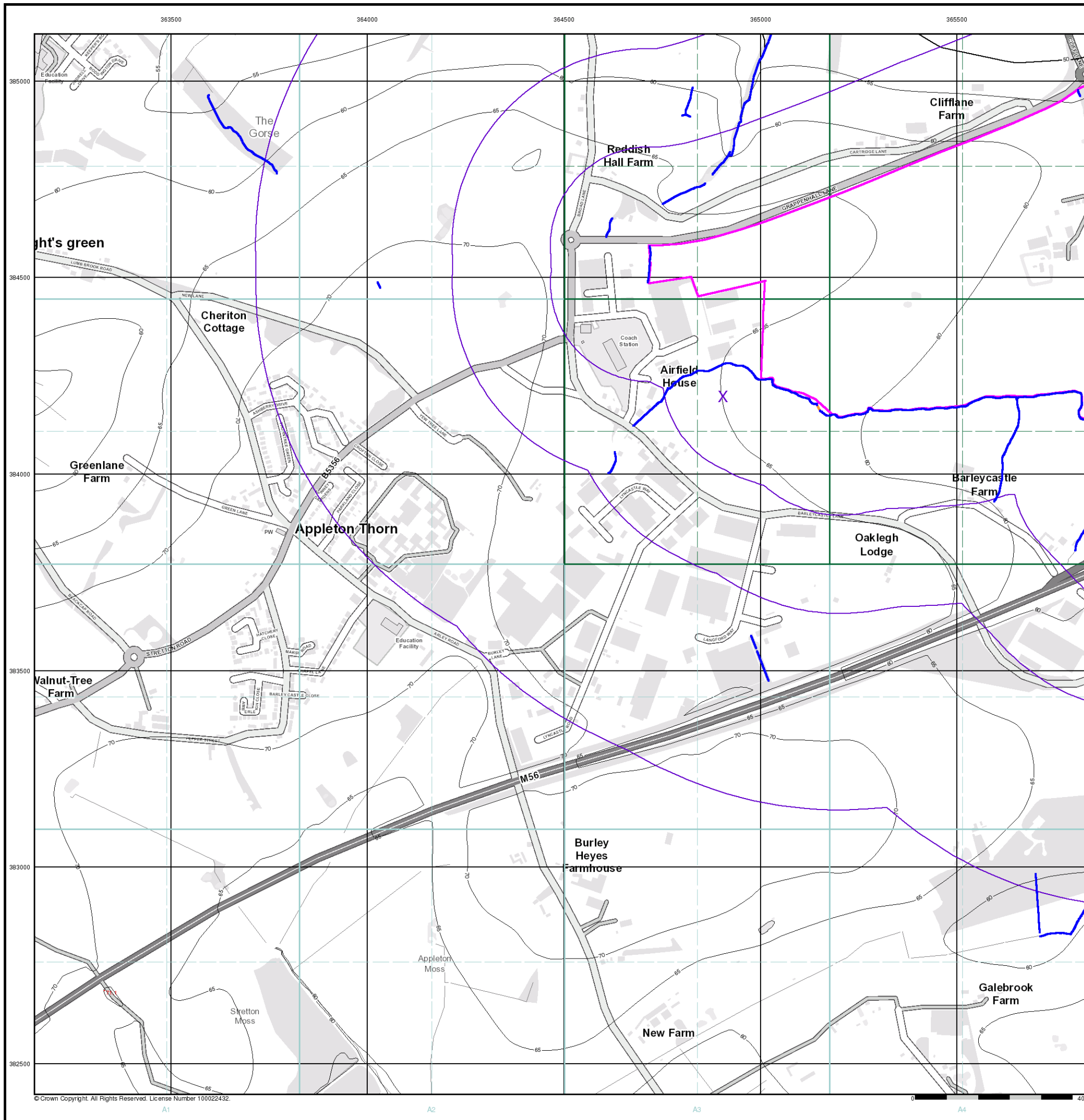


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000




Site Details

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General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point

Risk of Flooding from Surface Water

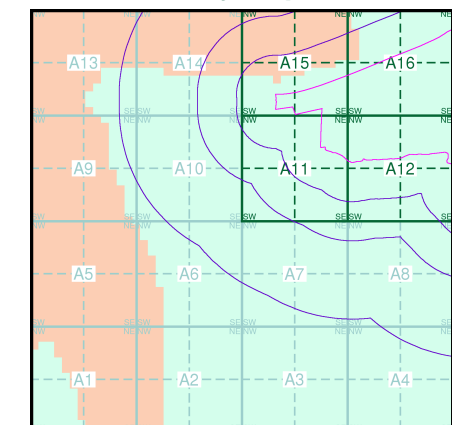
-  High - 30 Year Return
-  Medium - 100 Year Return
-  Low - 1000 Year Return

Suitability

See the suitability map below

-  National to county
-  County to town
-  Town to street
-  Street to parcels of land
-  Property

EANRW Suitability Map - Slice A

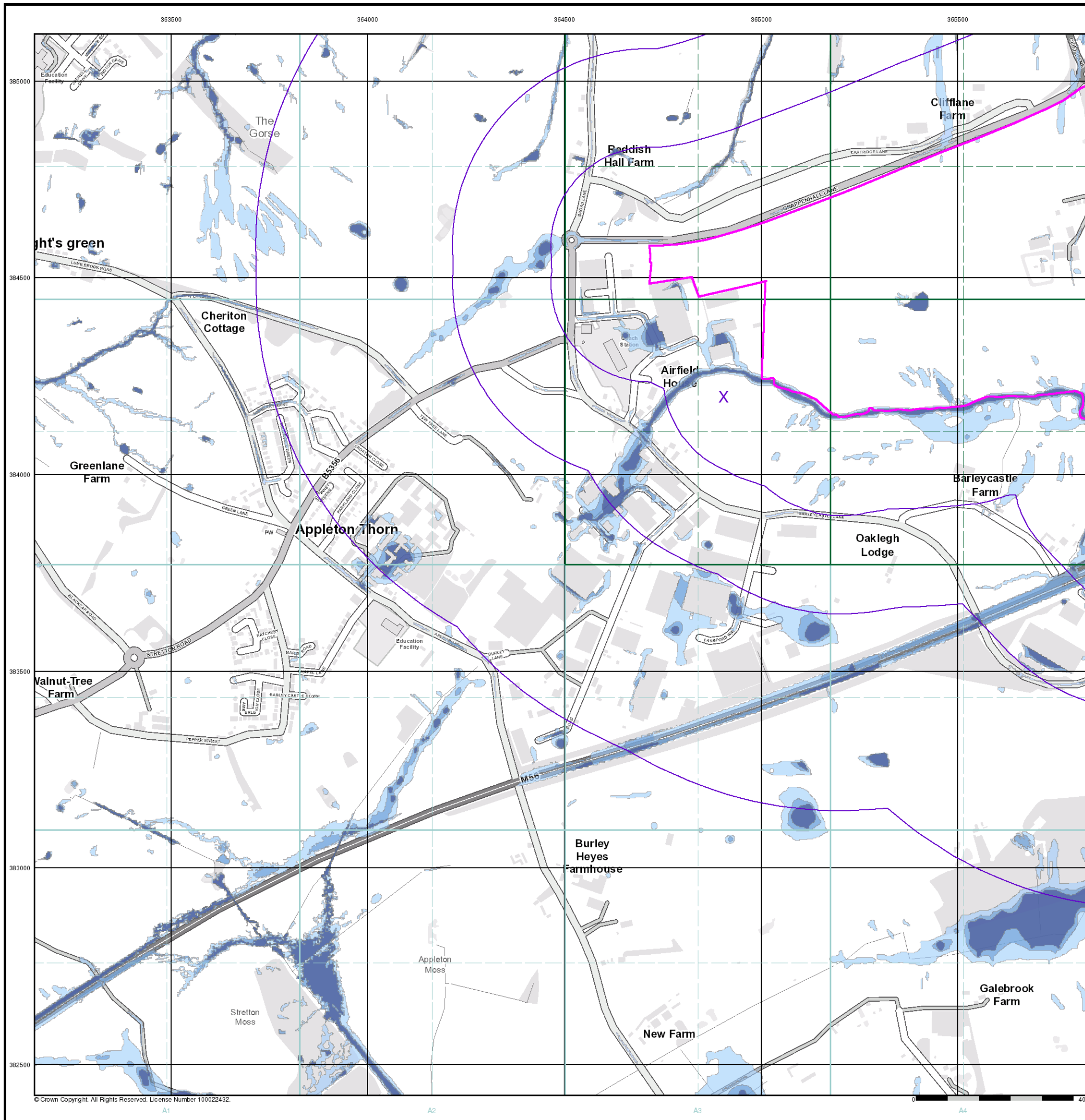


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

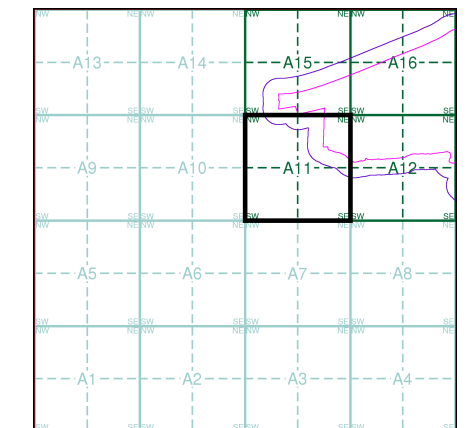
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A11

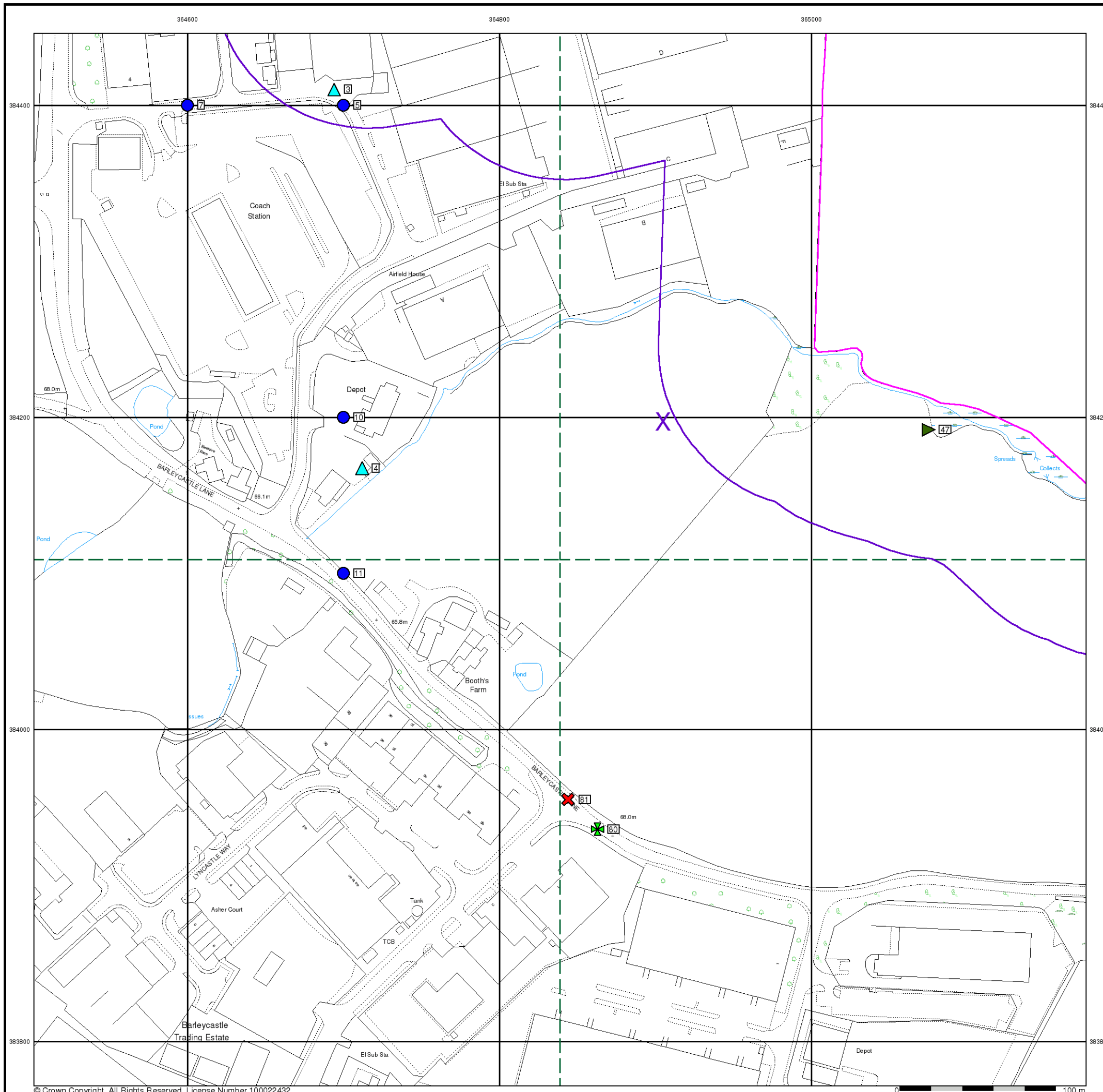


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
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- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

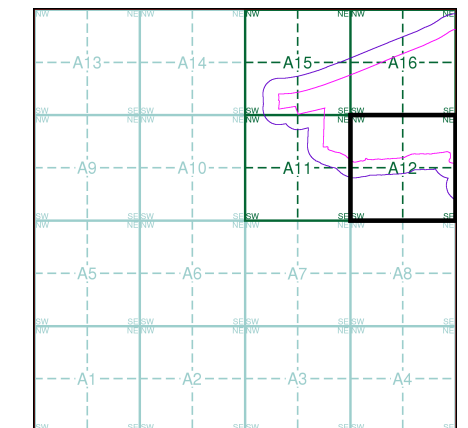
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement
- BGS Recorded Mineral Site

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A12

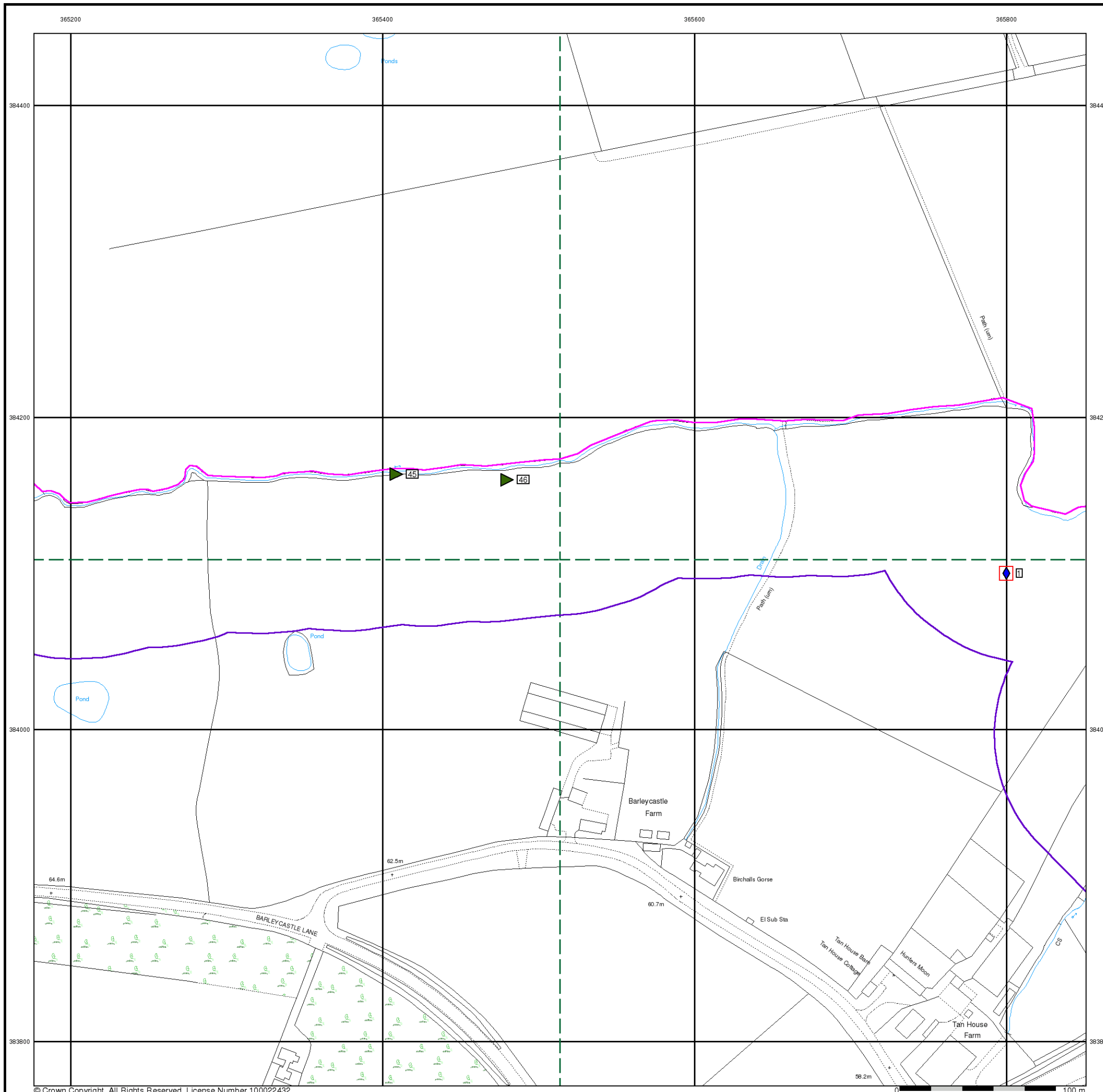


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
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- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

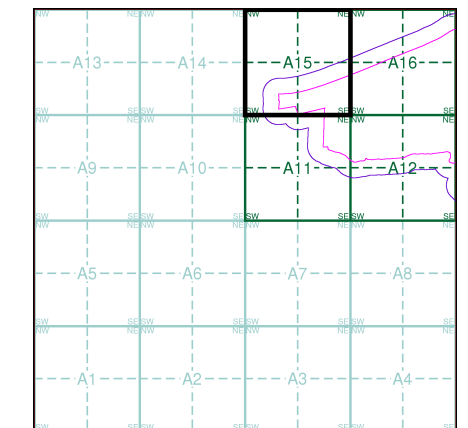
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A15

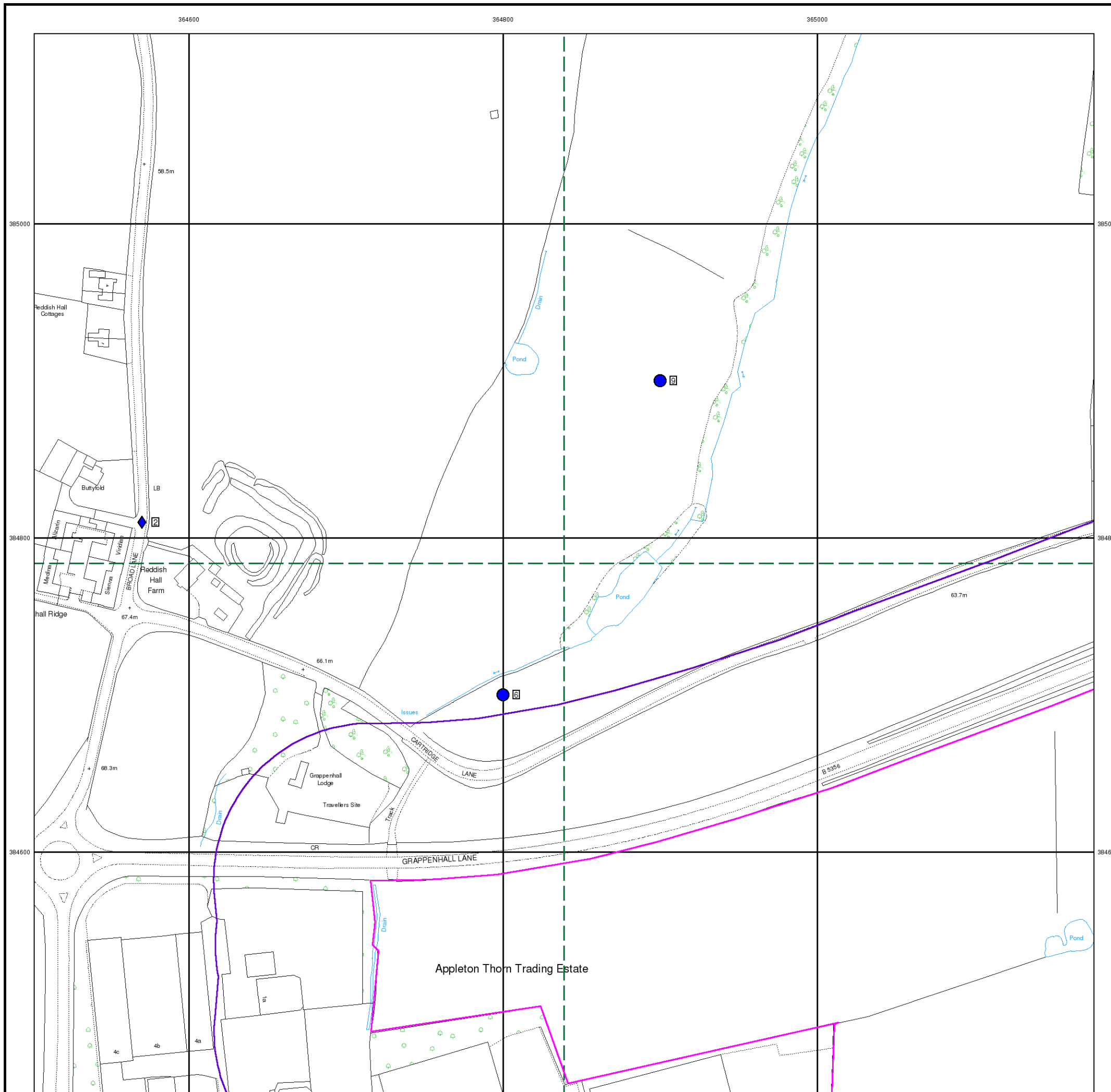


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
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- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

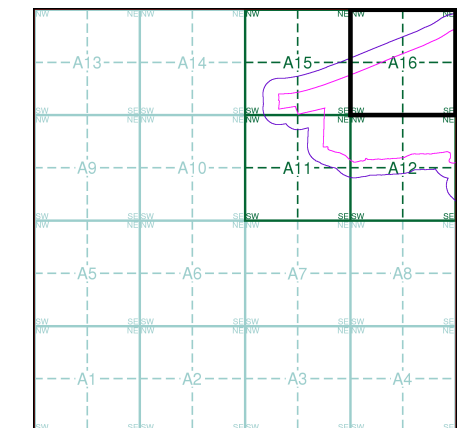
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment A16



Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

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- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

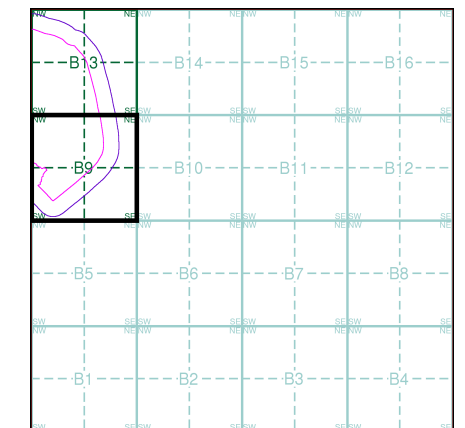
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement
- BGS Recorded Mineral Site

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment B9

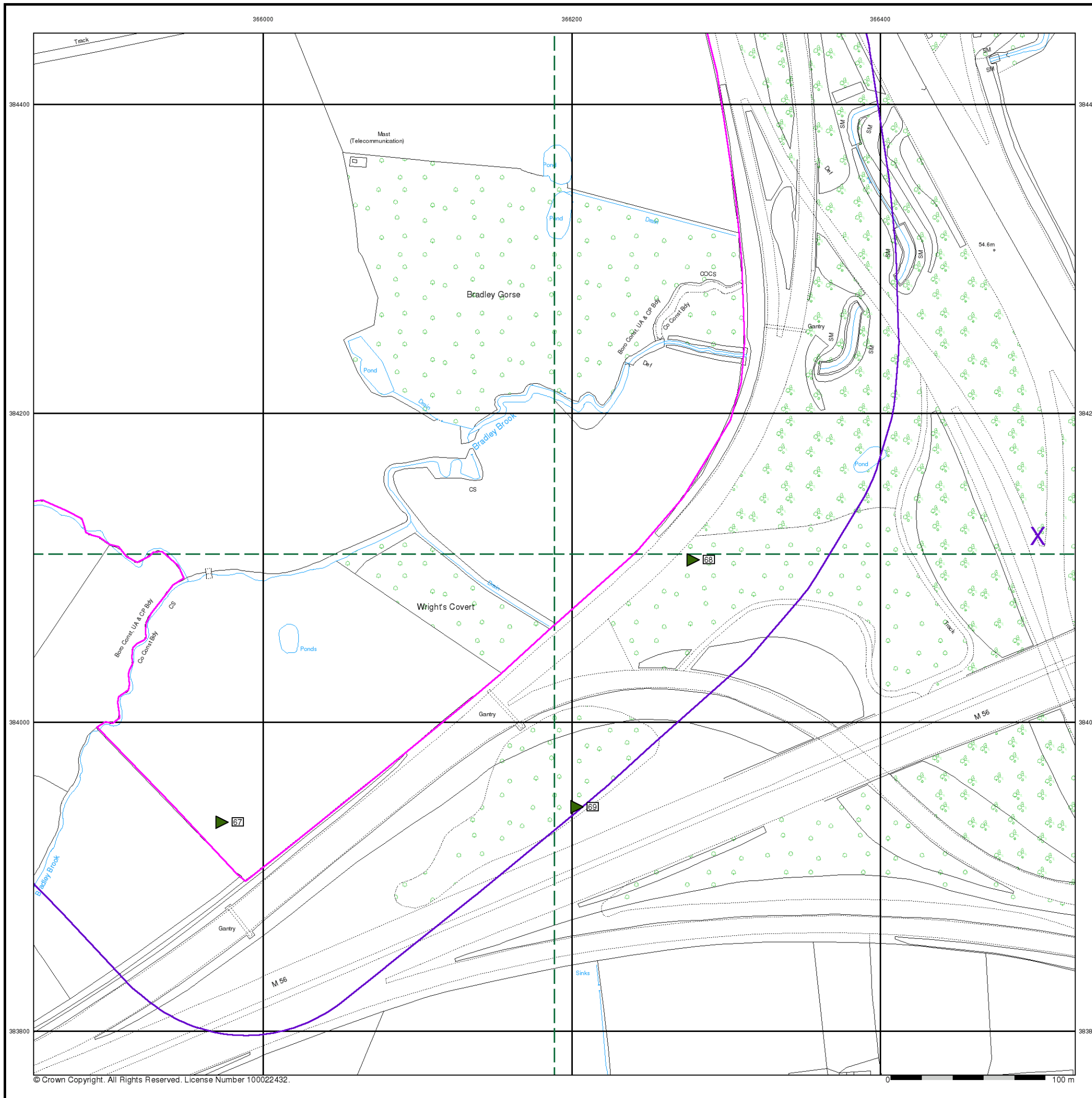


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
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- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

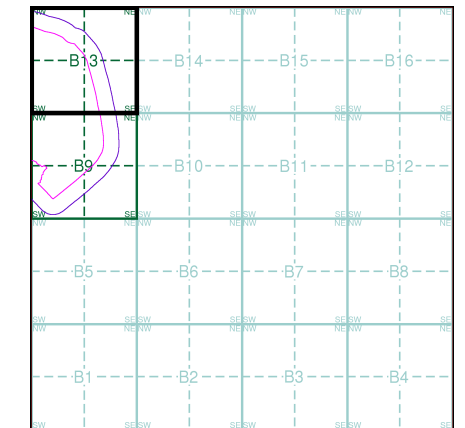
Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Geological

- BGS Recorded Mineral Site

Site Sensitivity Map - Segment B13

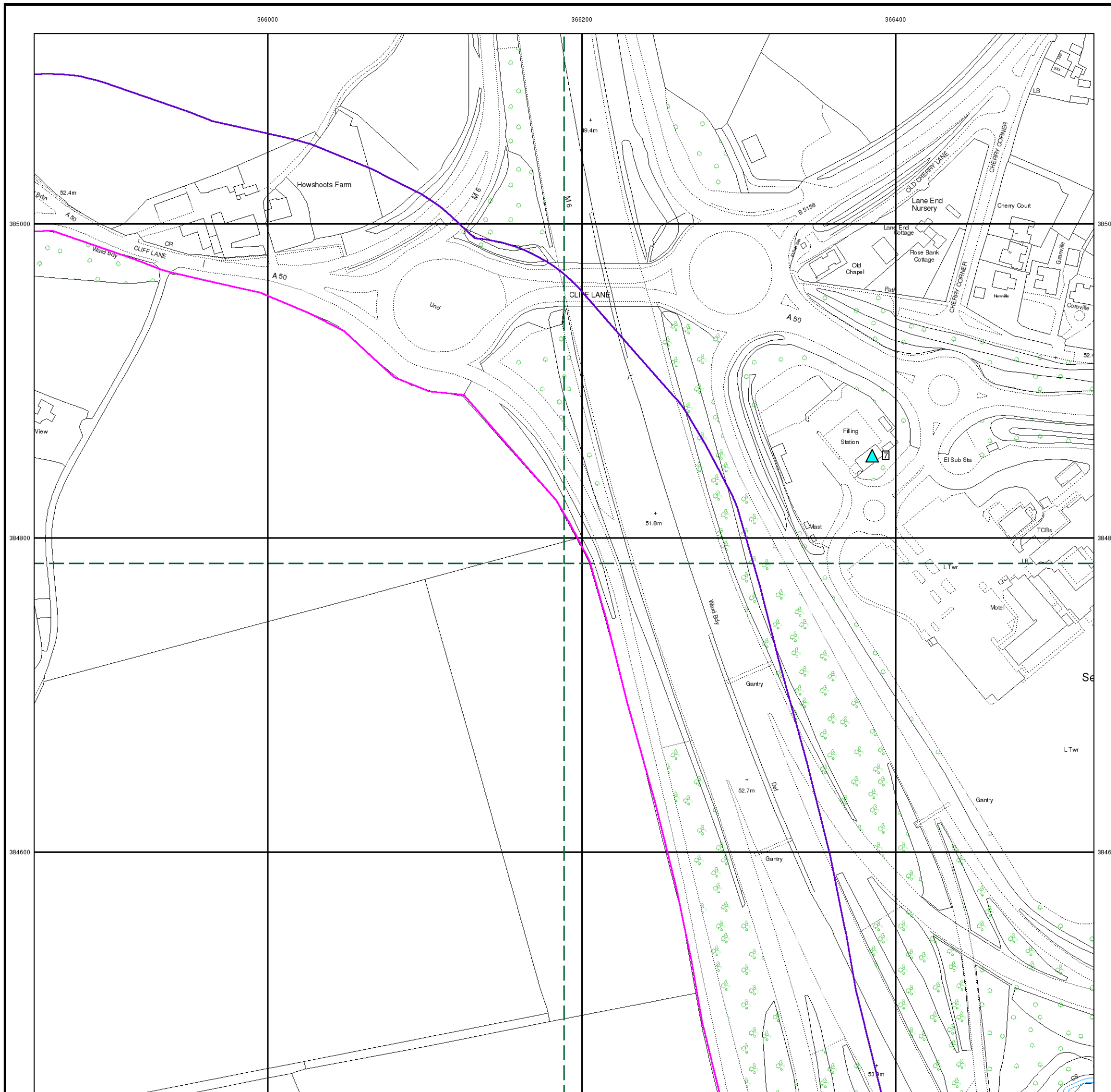


Order Details

Order Number: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Plot Buffer (m): 100

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

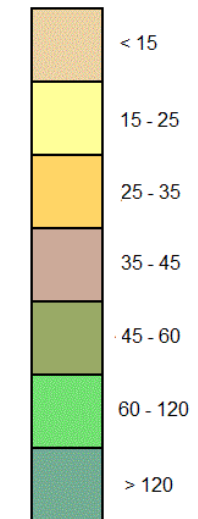


General

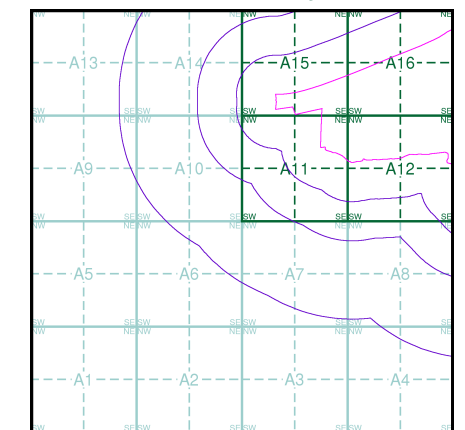
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice A

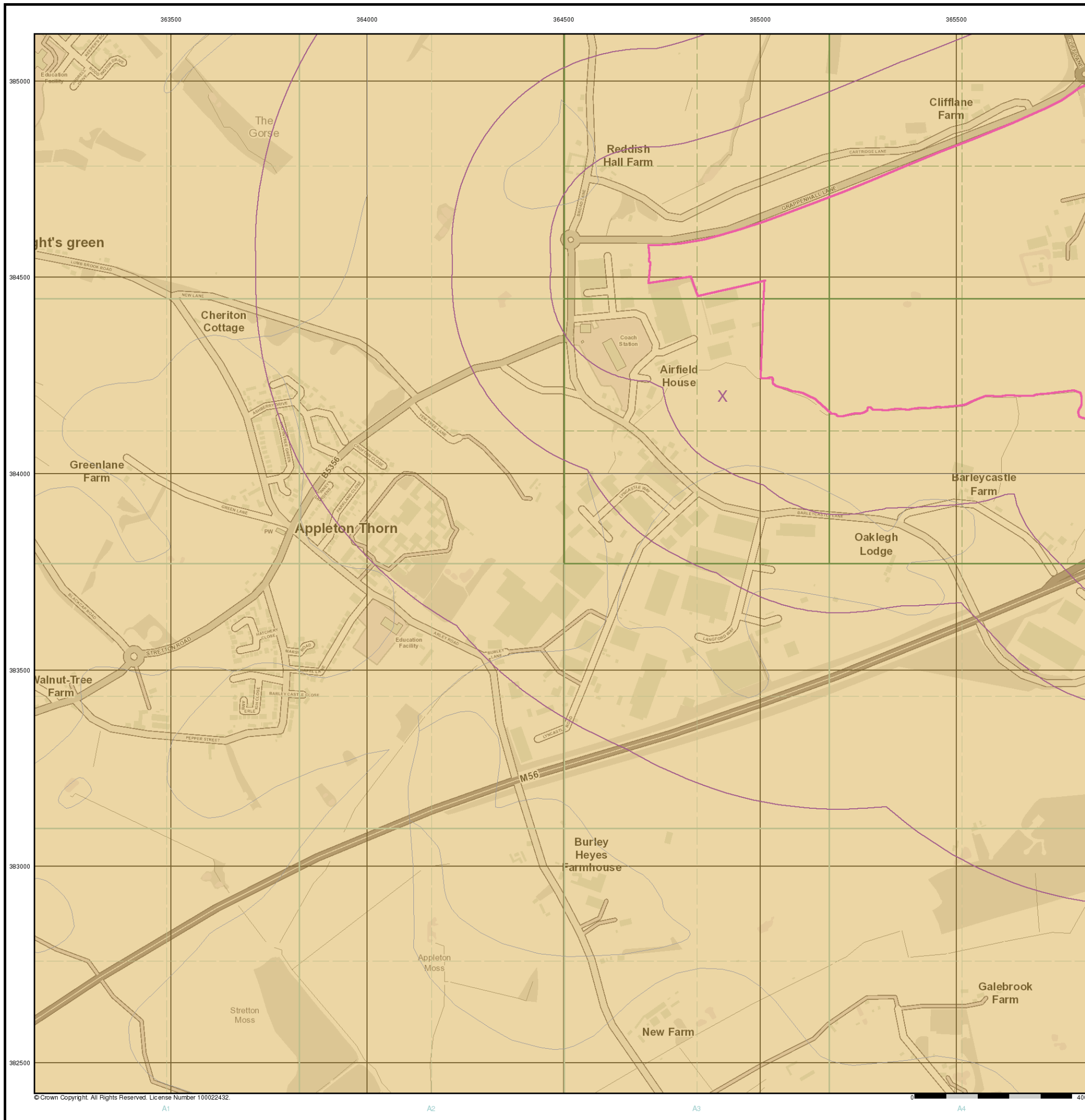


Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



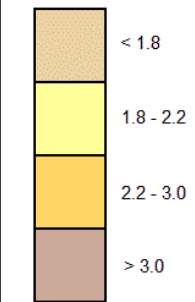
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General

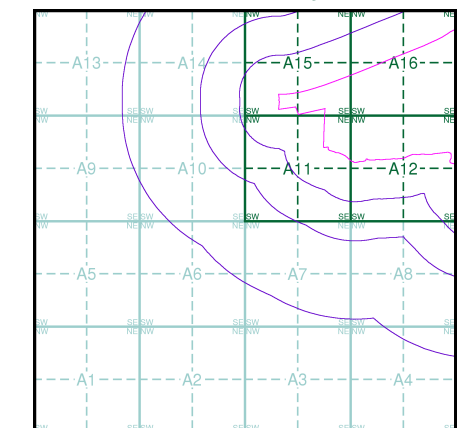
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice A

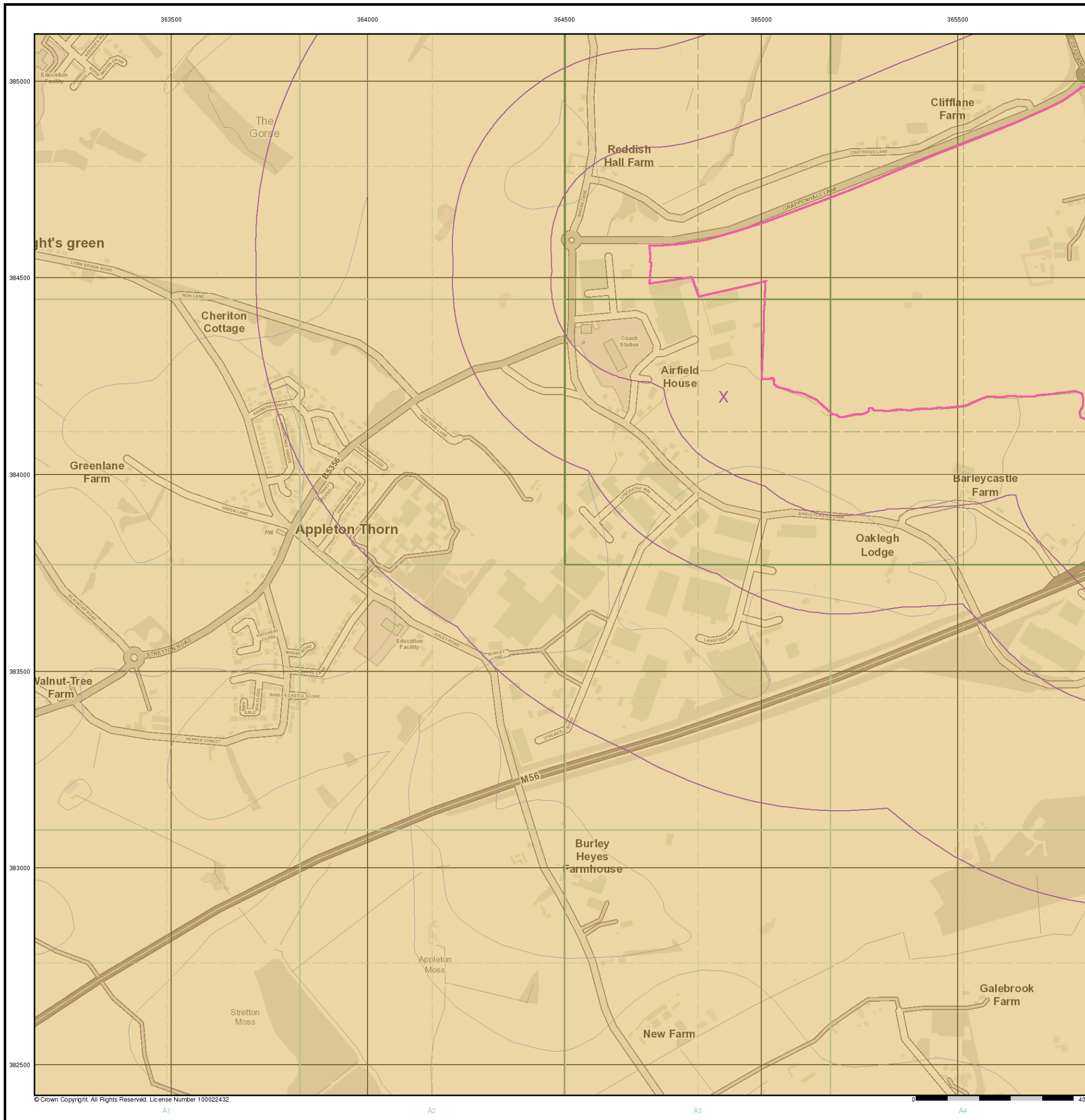


Order Details

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 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



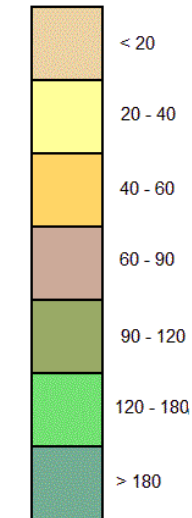
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General

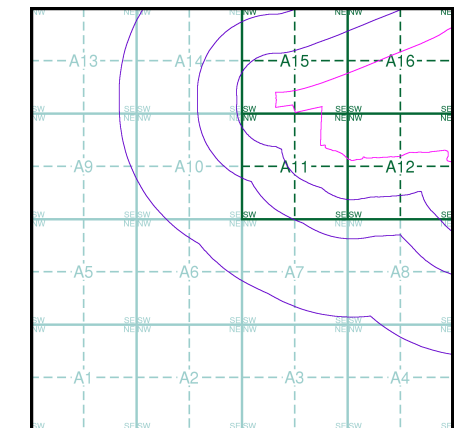
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice A

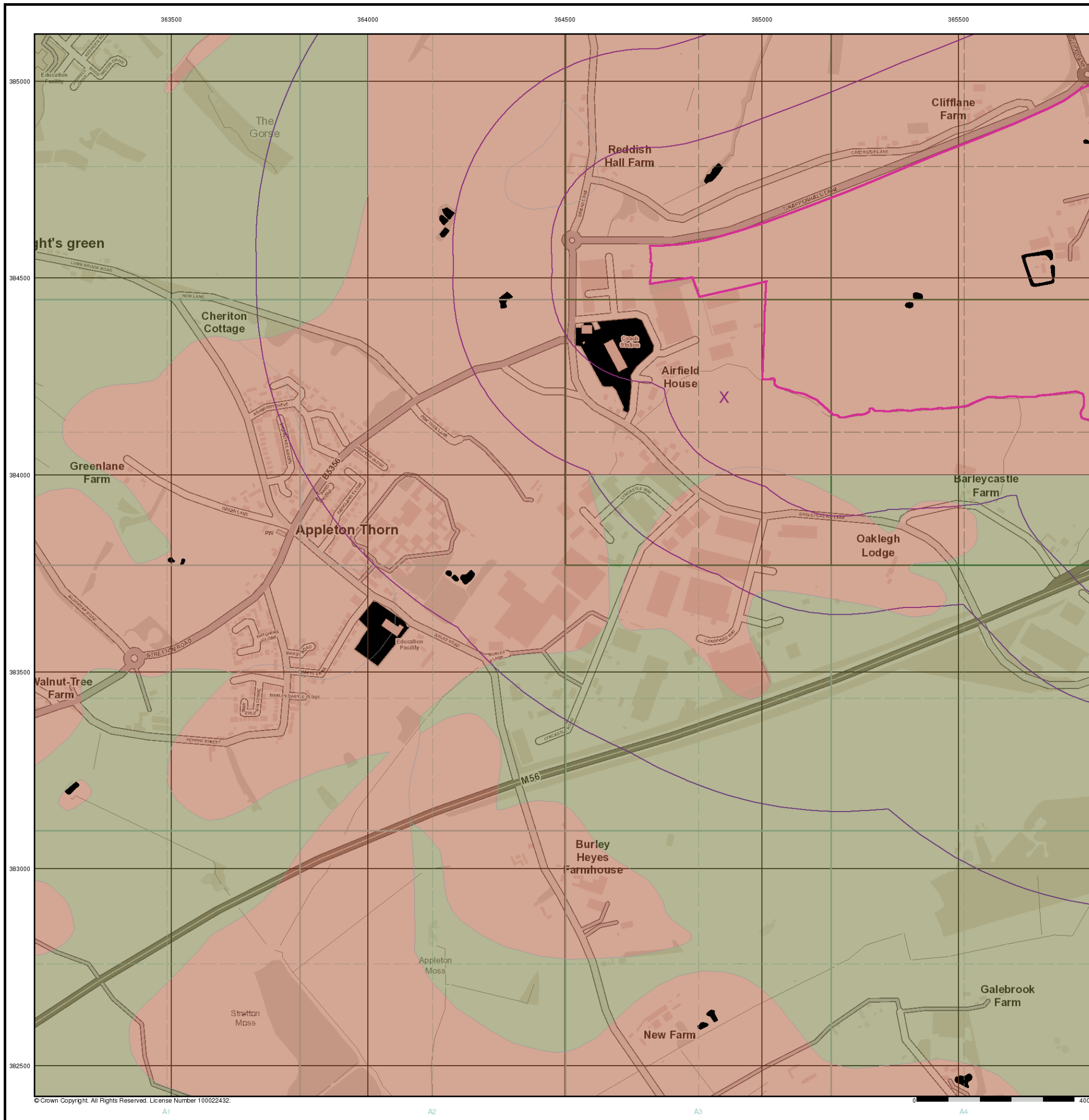


Order Details

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 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



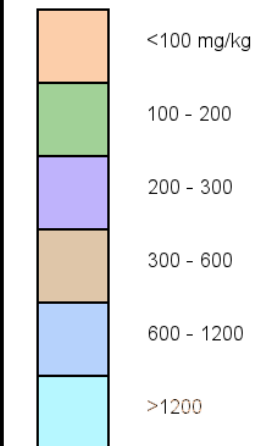
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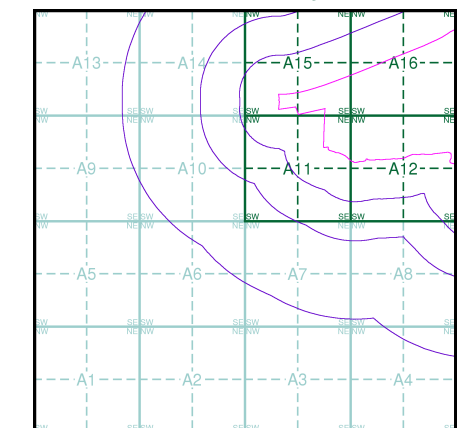
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 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice A

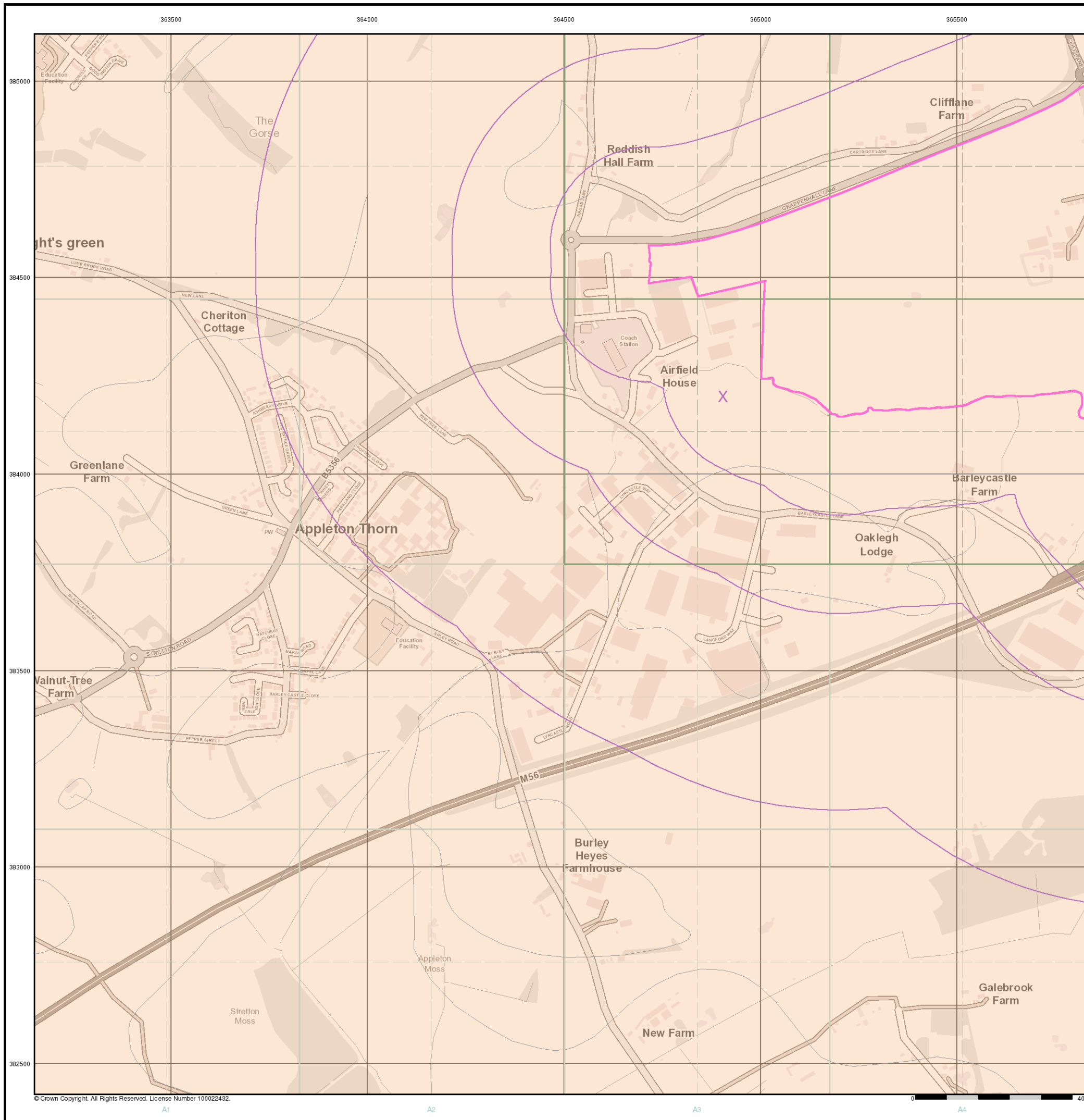


Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



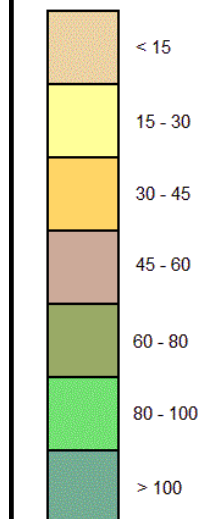
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General

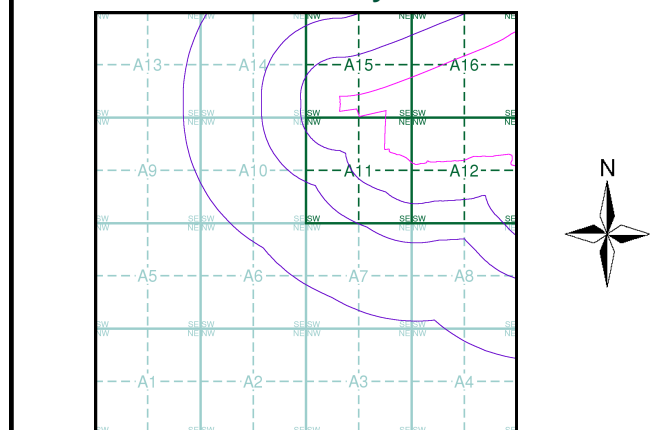
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice A

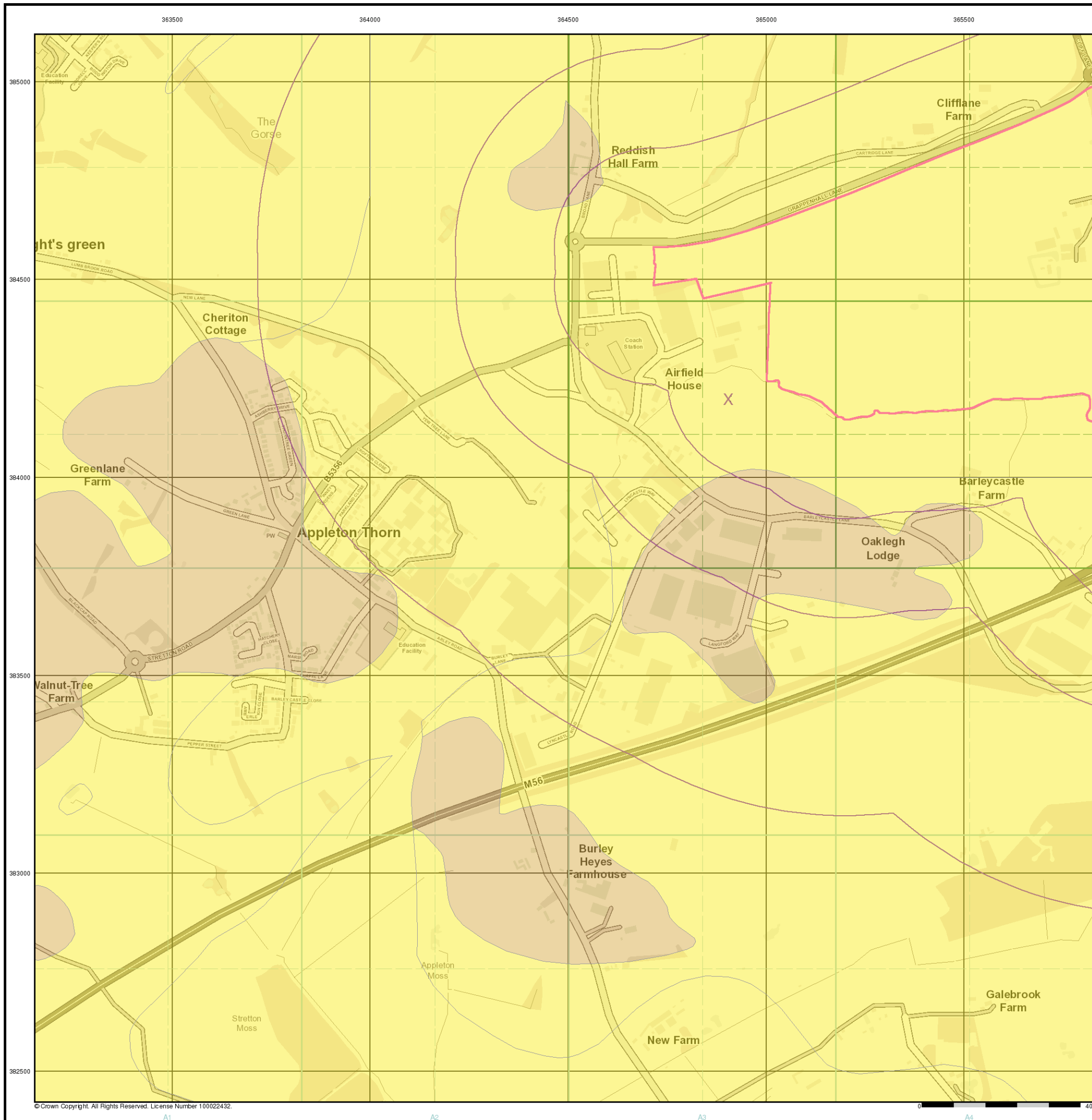


Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 364910, 384200
 Slice: A
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



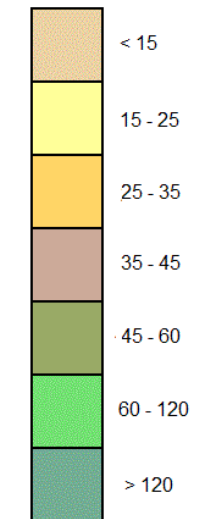
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General

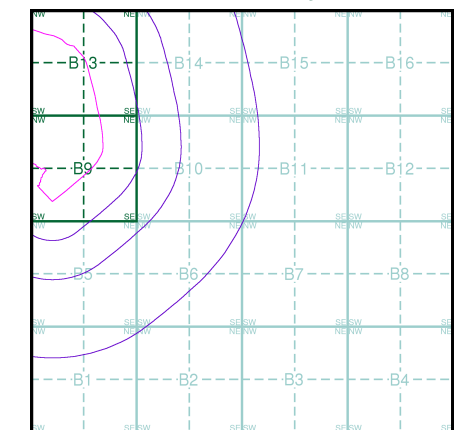
- ⬮ Specified Site
- ⬮ Specified Buffer(s)
- X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg



Estimated Soil Chemistry Arsenic - Slice B



Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



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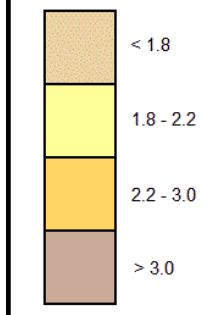


General

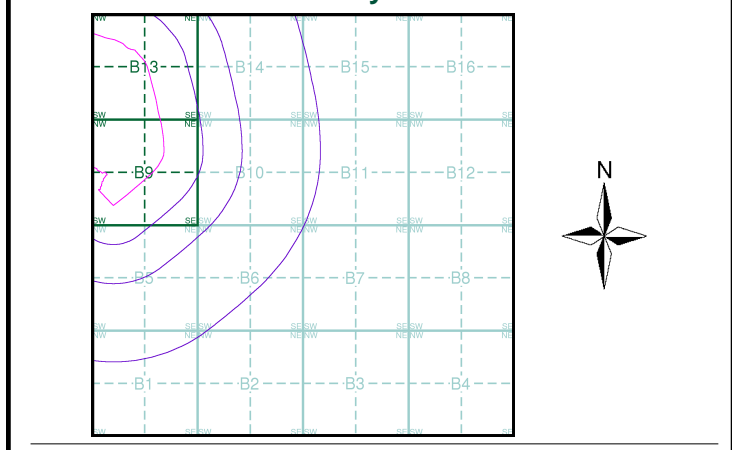
○ Specified Site
 ○ Specified Buffer(s)
 X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg



Estimated Soil Chemistry Cadmium - Slice B



Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

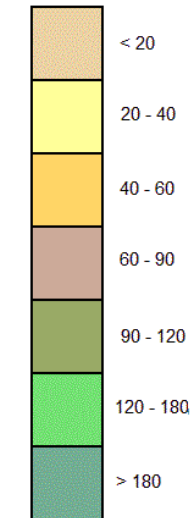
Warrington Interchange Masterplan, WARRINGTON, WA4 4SR

General

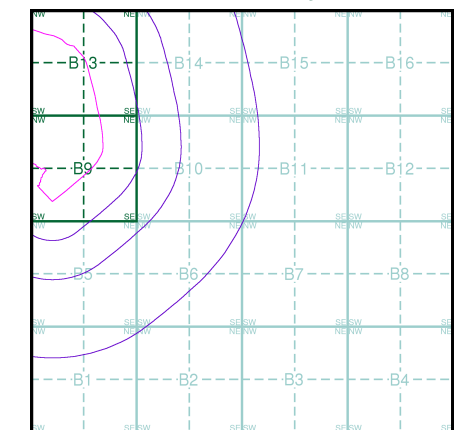
- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg



Estimated Soil Chemistry Chromium - Slice B



Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



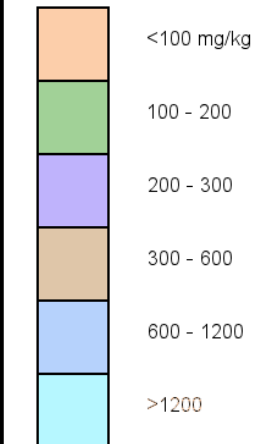
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General

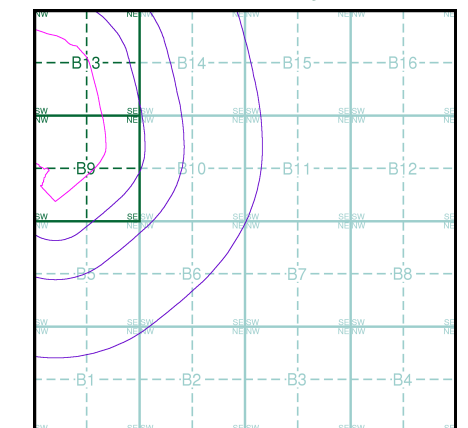
- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg



Estimated Soil Chemistry Lead - Slice B



Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



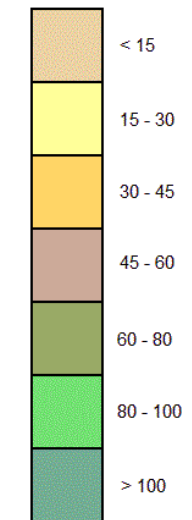
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General

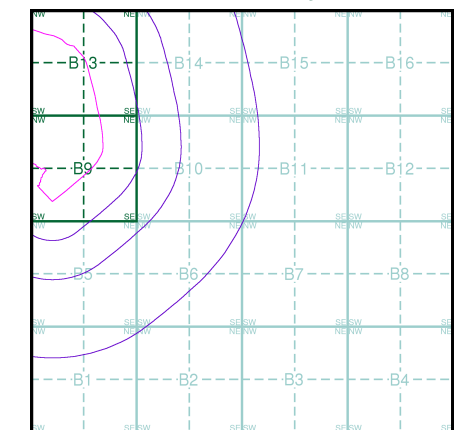
- ✱ Specified Site
- Specified Buffer(s)
- ✕ Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg



Estimated Soil Chemistry Nickel - Slice B

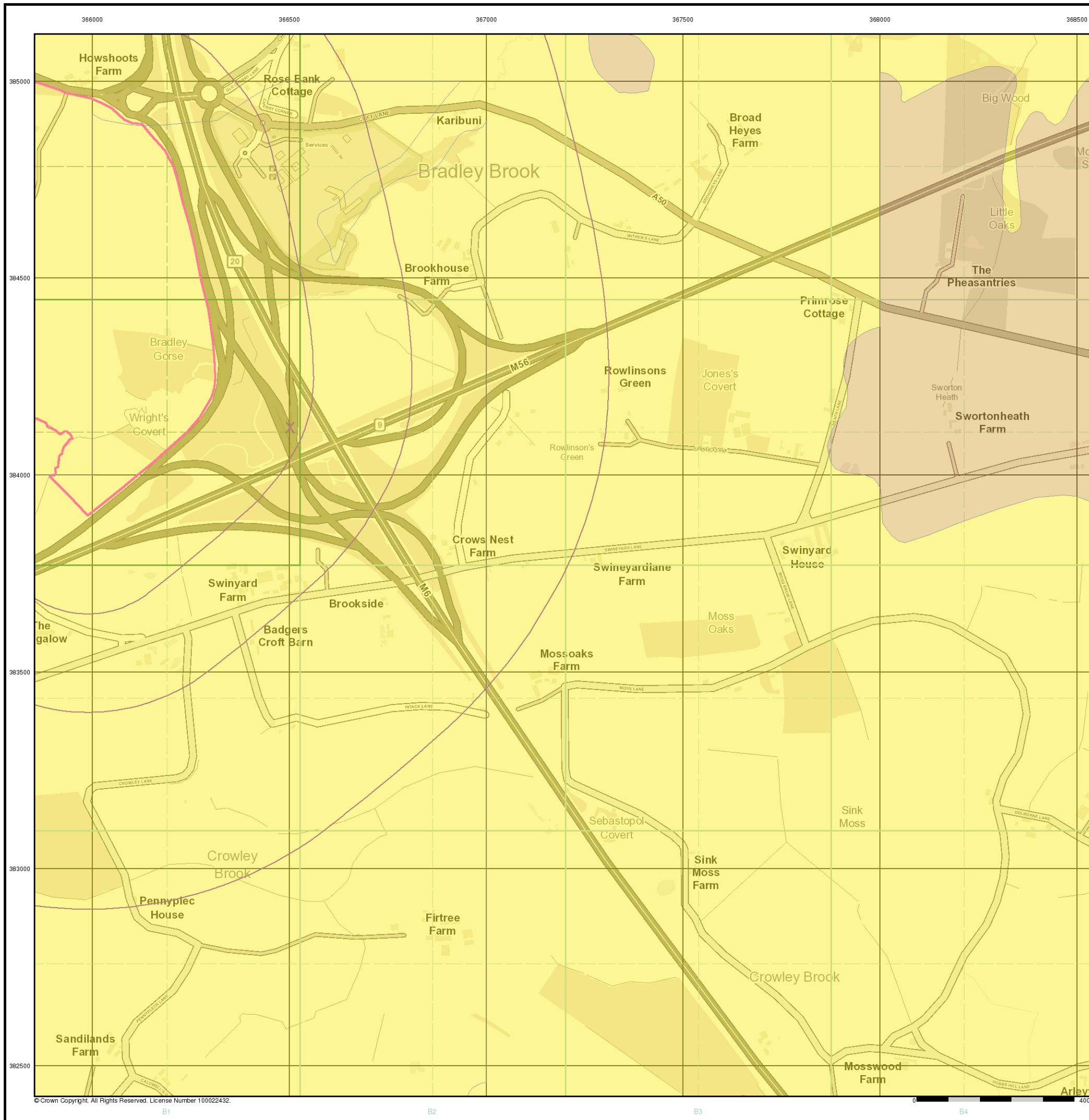


Order Details

Order Details: 135773225_1_1
 Customer Ref: 1015524 - Warrington Interchange MP
 National Grid Reference: 366500, 384120
 Slice: B
 Site Area (Ha): 93.66
 Search Buffer (m): 1000

Site Details

Warrington Interchange Masterplan, WARRINGTON, WA4 4SR



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Appendix C: Historical Borehole Records

5J685E 3

66198 84898

Sampling		Properties			Strata		Depth	Level	Legend
Depth	Type	Cu kPa	w%	SPT N	Description	Depth	Level	Legend	
0.30-0.80	B				TURF and TOPSOIL **	6.L.	58.90		
					MADE GROUND: Grey silty fine to medium sand (Pulverised Fuel Ash) with occasional stiff brown sandy silty clay inclusions and some fine to coarse gravel.	0.30	58.60		
1.20-1.65	CB			12					
1.70-2.15	CB			17					
2.20-2.65	U(40)		12		Stiff red brown mottled grey silty CLAY with a little fine to medium sub-angular to sub-rounded gravel.	2.00	56.90		
2.70-3.15	U(60)	100	16						
3.20-3.65	U(50)		15						
3.70-4.25	U(51)		12						
4.30-4.80	D			12					
4.80	D				Red brown slightly weathered SILTSTONE. Weak. With occasional grey green inclusions.	4.70	54.20		
5.20-5.38	D			50/25					
5.38	D				End of Borehole	5.38	53.52		

Drilling Groundwater

Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water
Pit	G.L.	1.20			NIL			15.11.88	NIL	NIL	NIL
Cable	1.20	5.38	D.15					15.11.88	4.83	3.00	NIL
Percussion								16.11.88	4.83	3.00	NIL

Remarks 16.11.88 5.38 3.00 NIL

Borehole Record	Project	Contract
	M6 Widening Junctions 20 - 21A Department of Transport	E8330
exploration associates		Borehole BI (1 of 1)

SJ 68 SE 11





66366 84468

Sampling		Properties			Strata			66366 84468		
Depth	Type	Cu kPa	w %	SPT N	Description	Depth	Level	Legend		
6.L.-1.50	B			16	MADE GROUND: Stiff brown very sandy silty clay with sandstone fragments and cobbles and some fine to coarse sub-rounded to sub-angular gravel	6.L.	54.10			
1.50-2.50	SD			27		1.50 - 2.50m: with some gravel size clay fragments.				
2.50-2.95	U(60)	120	25		Stiff brown grey silty CLAY.	3.00	51.10			
3.00	D									
3.25	D									
3.50-3.95	SD				Green grey and brown angular SANDSTONE fragments with a little brown sandy silty clay.	4.20	49.90			
4.20-4.25	SD			50*/50			4.25	49.85		
					End of Borehole					

Drilling					Groundwater							
Type	From	To	Size	Fluid	Struck	Behaviour		Sealed	Date	Hole	Cased	Water
Pit	G.L.	1.50				Nil			21.10.88	Nil	Nil	Nil
Cable	1.50	4.25	0.15						21.10.88	4.25	1.60	Nil
Percussion												

Remarks		
Borehole Record	Project	
	M6 Widening Junctions 20 to 21A Department of Transport	
exploration associates	Contract	
	E8330	
Borehole		R3 (1 of 1)

SJ 685E 12
66310 84560

Sampling		Properties			Strata		66310 84560		
Depth	Type	Cu kPa	w%	SPT N	Description	Depth	Level	Legend	
G.L.-1.60	B				MADE GROUND: Red grey mottled grey brown fine to medium sand with a little fine to coarse sub-rounded gravel with a little silty clay and occasional cobbles.	G.L.	54.20		
1.60-2.05	SD			21	Stiff red brown silty CLAY with occasional grey green sand lenses.	1.60	52.60		
2.25	D					2.50	51.70		
2.50-2.95	SD			93	Red brown thinly to thickly laminated SILTSTONE and fine grained SANDSTONE. Weak. With occasional grey bands.	3.05	51.15		
					End of Borehole				

Drilling					Groundwater						
Type	From	To	Size	Fluid	Struck	Behaviour	Sealed	Date	Hole	Cased	Water
Pit	G.L.	1.60						16.10.88	Nil	Nil	Nil
Cable	1.60	3.05	0.15		Nil			17.10.88	3.05	2.00	Nil
Percussion											

Borehole Record		Project		Contract	
exploration associates		M6 Widening Junctions 20 to 21A Department of Transport		E8350	
				Borehole R4 (1 of 1)	

Appendix D: CON29M Non-Residential Mining Report



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

WARRINGTON INTERCHANGE
MASTERPLAN
WARRINGTON
GREATER MANCHESTER

Date of enquiry: 15 September 2017
Date enquiry received: 15 September 2017
Issue date: 15 September 2017

Our reference: 51001626421001
Your reference: 139491618_1 |



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

WARRINGTON INTERCHANGE MASTERPLAN,
WARRINGTON, GREATER MANCHESTER

How to contact us


0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

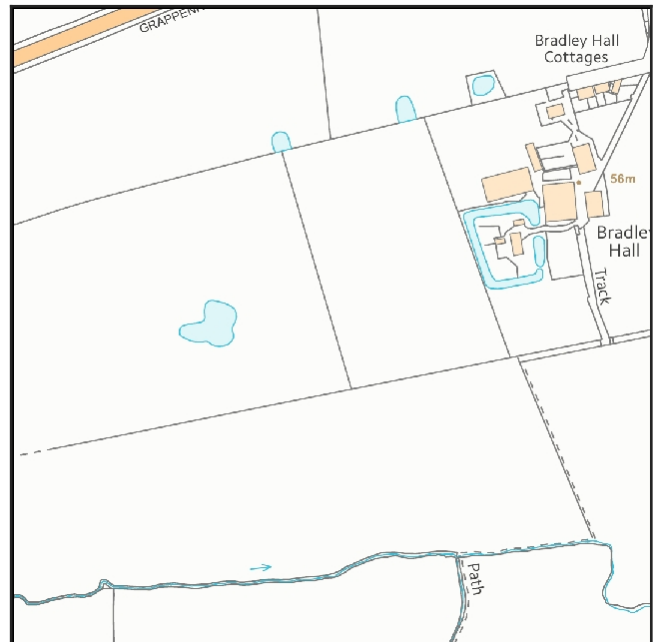
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Ordnance Survey Licence number: 100020315

Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	No
2	Present underground coal mining	No
3	Future underground coal mining	No
4	Mine entries	No
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	Yes

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is not within a surface area that could be affected by past underground mining.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property is situated within the Cheshire Brine Subsidence Compensation District but is not within any consultation area prescribed by the Board under Section 38(1) of the Cheshire Brine Pumping (Compensation for Subsidence) Act 1952.

A Notice of Damage has not been filed in respect of the property and there has been no commutation of claims in connection therewith.

If claims in respect of the property have not been commuted, then should the property suffer damage at some future date through subsidence due to brine pumping, the compensation provisions of the Cheshire Brine Pumping (Compensation for Subsidence) Acts 1952 and 1964 would be expected to apply to the property. Should you wish to file a Prescribed Notice of Damage, please contact the Cheshire Brine Subsidence Compensation Board (tel: 0845 002 0562 or email info@cheshirebrine.com).

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

The map image is too large for this page and will be sent in a separate document


How to contact us


0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

 /company/the-coal-authority

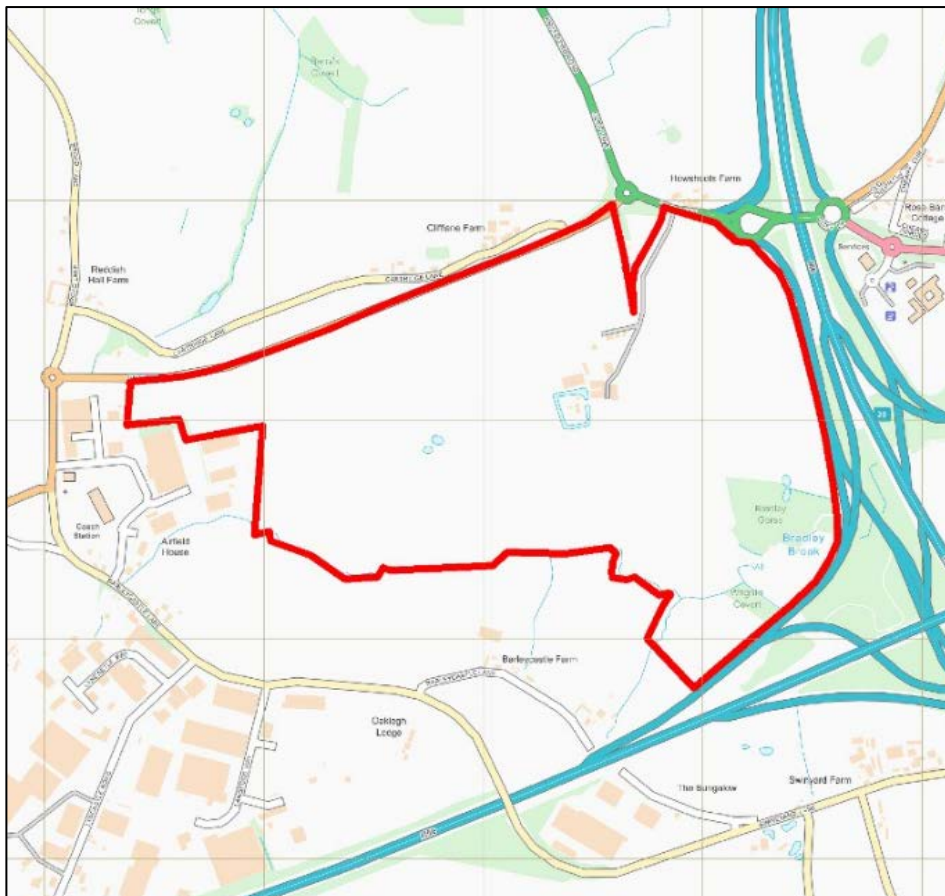
 /thecoalauthority

 /coalauthority

Appendix E: Preliminary Unexploded Ordnance (UXO) Threat Assessment

PRELIMINARY UNEXPLODED ORDNANCE (UXO) THREAT ASSESSMENT

Meeting the requirements of CIRIA C681 'Unexploded Ordnance (UXO) – A guide for the Construction Industry' Risk Management Framework



6 ALPHA PROJECT NUMBER	P6168	ORIGINATOR	S. Barratt
LANDMARK ORDER NUMBER	139294091_2	REVIEWED BY	R. Griffiths (15 th September 2017)
CLIENT REFERENCE	1015524 – Warrington Interchange MP (Boundary)	RELEASED BY	L. Askham (15 th September 2017)
SITE	Warrington Interchange Masterplan, Warrington, WA4 4SR		
RATING	HIGH – This Site requires further action to establish and mitigate any UXO risk posed		

STUDY SITE

The Study Site is described as “Warrington Interchange Masterplan, Warrington, WA4 4SR”, and it is centred on National Grid Reference 365680, 384480.

THREAT POTENTIAL AND RECOMMENDATIONS

UXO PROBABILITY ASSESSMENT = 4 RATING, INDICATING A HIGH PROBABILITY OF UXO ENCOUNTER

The rating scale can be seen on *Figure 2* (Probability of UXO Encounter). In accordance with current guidelines (*CIRIA C681 Chapter 5*), the highest threat rating has been determined at this specific site for UXO threat consideration and has been used for the final assessment and recommendations.

In accordance with *CIRIA C681 Chapter 5* on managing UXO risks, *6 Alpha* recommends that the next stage in the risk management framework is:

DETAILED UXO THREAT & RISK ASSESSMENT

We would be pleased to provide this service, please contact *Envirocheck* for further details:



REPORT SUMMARY

During WWII, the Study Site was situated within *Runcorn Rural District* and *Bucklow Rural District*, which both recorded one High Explosive (HE) bomb strike per 100 hectares; a very low level of bombing. The Study Site was also situated within *Lymm Urban District*, which recorded three HE bomb strikes per 100 hectares; a very low level of bombing.

Luftwaffe aerial reconnaissance photography associated with the Site identified an airfield (located 285m to the south) as a primary bombing target. Further research found the airfield to be *Royal Naval Air Station (RNAS) Stretton*. However, there were no features in the vicinity which may have been considered secondary targets.

Neither *Air Raid Precaution (ARP)* records nor official bomb damage mapping associated with the Site were available. An analysis of post-war mapping and further research of historical records did not identify any bombing or bomb damage in close proximity to the Site boundary.

Given that *RNAS Stretton* was recorded in close proximity; it would suggest that further action is warranted to address the potential for UXO encounter.

USING THIS REPORT

This Preliminary Assessment is designed to inform environmental and construction professionals of the potential threat of military related explosives and/or ordnance on, or in, the vicinity of the Study Site.

This assessment is designed to be employed as a site-screening tool to meet with the requirement of Phase One of the *CIRIA UXO Risk Management Framework*; there are two broad prospective outcomes; either the threat level requires a detailed threat & risk assessment; or no further action is required. In the former instance we can provide a report within 14 working days (or more quickly upon application).

Two figures accompany the report, the *Second World War (WWII)* High Explosive (HE) Bomb Density and the final Probability of UXO Encounter. The purpose of this approach is to demonstrate that whilst bomb density statistics give an indication for WWII bombing, they should not be relied upon exclusively to generate a holistic assessment.












For further information, please contact *Envirocheck*:

Telephone: +44 (0)844 844 9952

Website: <http://www.envirocheck.co.uk>

Email: customerservice@envirocheck.co.uk

DATA FINDINGS

Threat Source (within 1,000m)	Detail	
	Identified	Comments
 Airfields/Military Facilities	✓	Royal Naval Air Station (RNAS) Stretton (245m south).
 Ordnance Manufacture/Storage	✗	None recorded within 1,000m.
 WWII Decoy Bombing Sites	✓	Starfish decoy (120m north).
 WWII Defensive Features	✓	Aircraft dispersal pens (410m south, 690m south and 705m south), a battle HQ (420m south) and gun testing butts (470m south).
 WWII Luftwaffe Designated Bombing Targets	✓	Luftwaffe aerial photography identified an airfield (located 285m south) as a primary bombing target.
 Secondary Bombing Targets	✗	None recorded within 1,000m.
 WWII Bomb Strikes Within Site Boundary	✗	ARP records associated with the Site were not available.
 WWII Bomb Strikes Near Site Boundary	✗	ARP records associated with the Site were not available.
 WWII Bomb Damage	✗	Official bomb damage mapping associated with the Site was not available.
 Abandoned Bomb Register	✗	The official abandoned bomb list did not identify any abandoned bombs within 1,000m.
 WWII Bombing Density Per 100 Hectares	✓	Runcorn and Bucklow Rural Districts and Lymm Urban District which recorded one, one and three HE bomb strikes per 100 hectares.

IMPORTANT NOTES

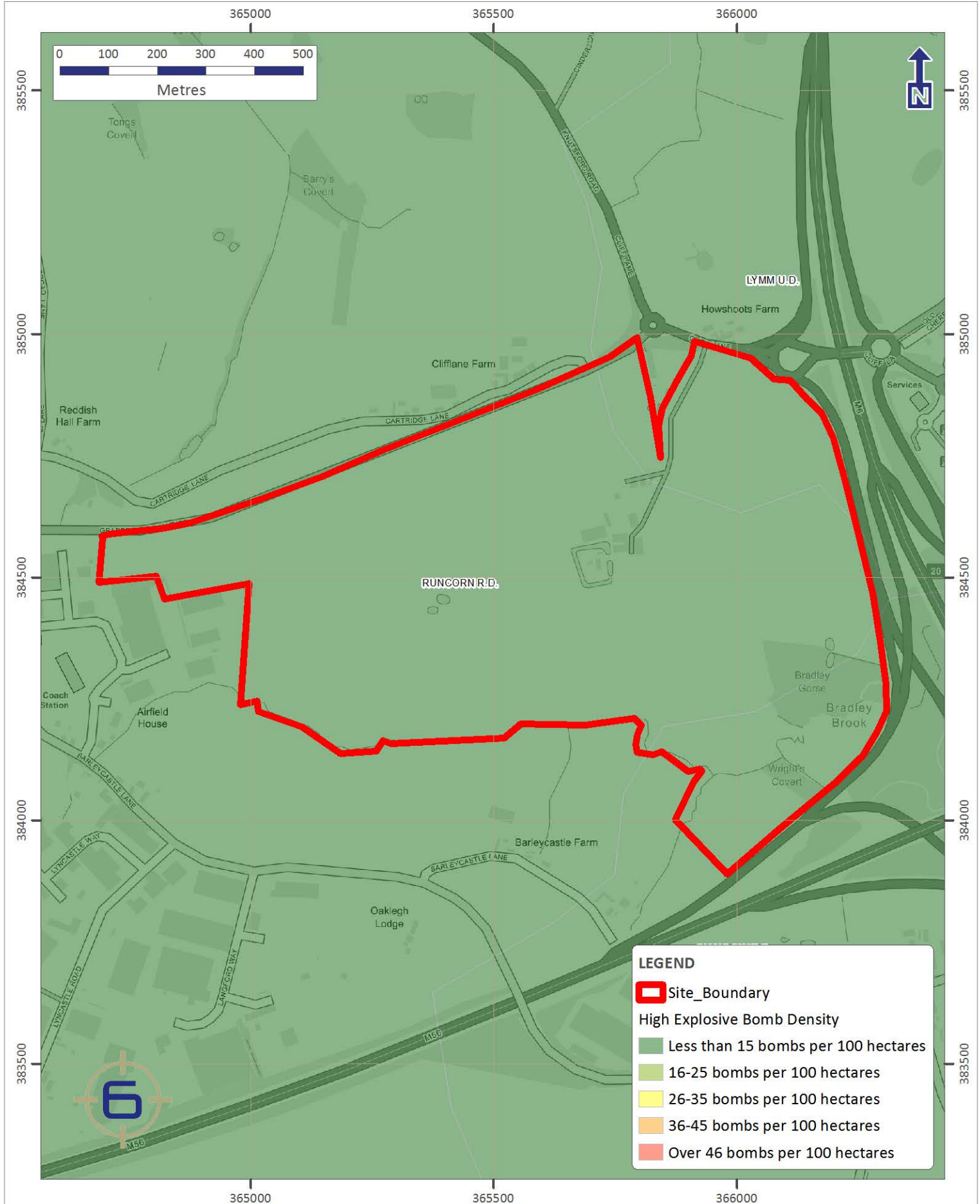
1. The term 'Preliminary UXO Threat Assessment' has been used to describe this report, to fall in line with the CIRIA C681 guidelines. Whilst the term 'Risk' can be justifiably used at this stage, the reader should note that the 'Consequence' function of 'Risk' is not considered. Should it be required, this would be addressed in the 'Detailed UXO Threat & Risk Assessment' (Stages 2 and 3).
2. This report is accurate and up to date at the time of writing.
3. The assessment levels have been generated from historical data and third party sources. Where possible 6 Alpha have sought to verify the accuracy of such data, but cannot be held accountable for inherent errors that may be in third party data sets (e.g. National Archives or library sources).
4. 6 Alpha have exercised all reasonable care, skill and due diligence in producing this service.
5. Whilst every effort has been used to identify all potential UXO/explosive threats, there were a number of private facilities, which may not have released privately recorded information concerning UXO/explosive threats into the public domain. It is therefore possible that some of the aforementioned sites may not be included within the database.



WARRINGTON INTERCHANGE MASTERPLAN, WARRINGTON, WA4 4SR



WWII High Explosive Bomb Density



LEGEND

- Site_Boundary
- High Explosive Bomb Density
 - Less than 15 bombs per 100 hectares
 - 16-25 bombs per 100 hectares
 - 26-35 bombs per 100 hectares
 - 36-45 bombs per 100 hectares
 - Over 46 bombs per 100 hectares

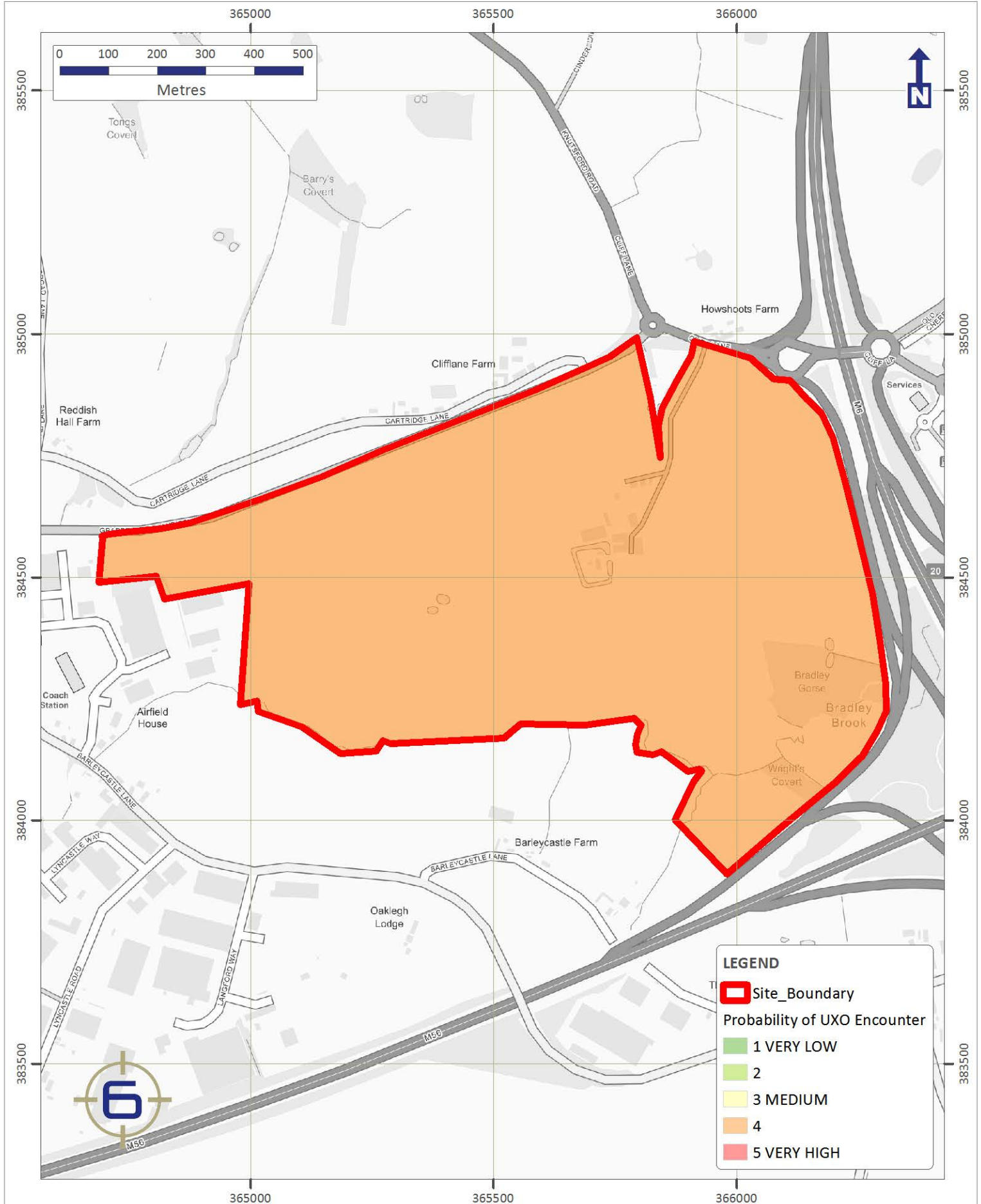
PROJECT NO. P6168	FIGURE 1	DRAWN GC	CHECKED RG	DATE 14 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	
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WARRINGTON INTERCHANGE MASTERPLAN, WARRINGTON, WA4 4SR



Probability of UXO Encounter



LEGEND

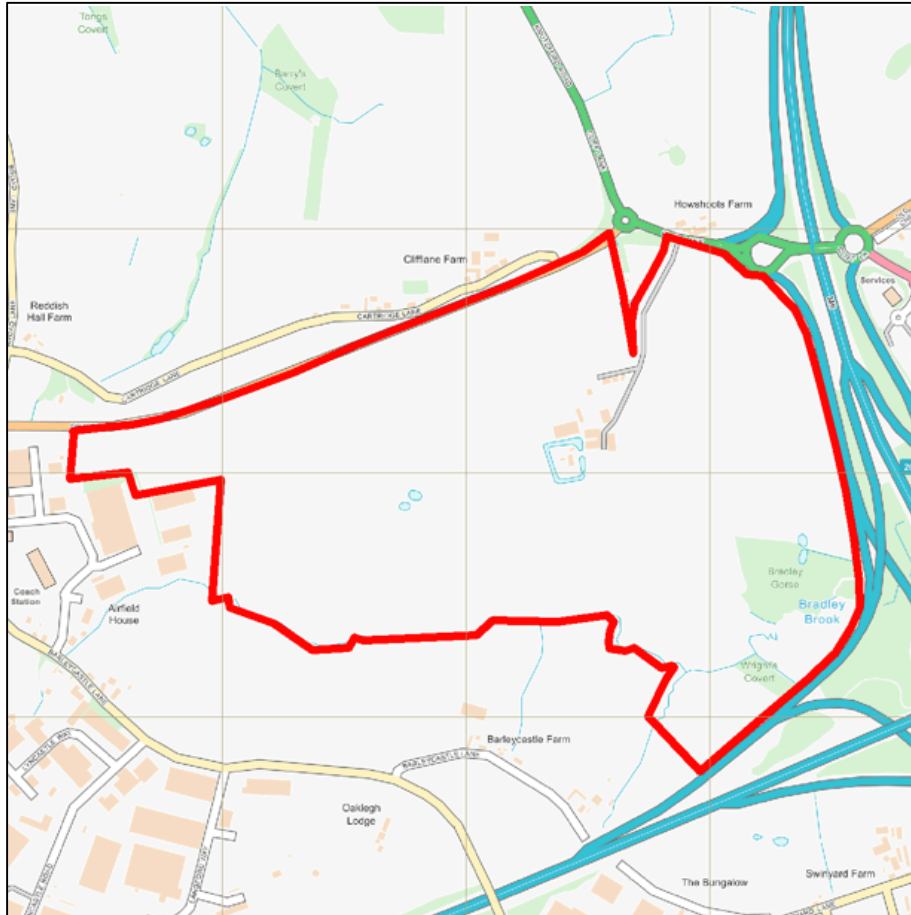
- Site_Boundary
- Probability of UXO Encounter
- 1 VERY LOW
- 2
- 3 MEDIUM
- 4
- 5 VERY HIGH

PROJECT NO. P6168	FIGURE 2	DRAWN GC	CHECKED RG	DATE 14 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	
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Appendix F: Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment

Detailed Unexploded Ordnance (UXO) Threat & Risk Assessment

Meeting the requirements of CIRIA C681 'Unexploded Ordnance (UXO) A guide for the Construction Industry' Risk Management Framework



PROJECT NUMBER	P6173	ORIGINATOR	G. Cooke
VERSION NUMBER	1.0	REVIEWED BY	R. Rickard (22 nd September 2017)
CLIENT	Cundall	RELEASED BY	L. Askham (25 th September 2017)
SITE	Warrington Interchange Masterplan, Warrington, WA4 4SR		
RATING	MEDIUM - This Site requires limited further action to reduce risk to ALARP during intrusive activities.		



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Acronyms and Abbreviations

AA	Anti-Aircraft	LAA	Light Anti-Aircraft
AAA	Anti-Aircraft Ammunition	lb	Pounds
AAC	Army Air Corps	LCC	London County Council
AFS	Advanced Flying School	LDV	Local Defence Volunteers
ALARP	As Low As Reasonably Practicable	LE	Low Explosive
AOD	Above Ordnance Datum	LSA	Land Service Ammunition
ARP	Air Raid Precaution	m	Metres
ATS	Auxiliary Territorial Service	MACP	Military Aid to the Civil Power
AXO	Abandoned Explosive Ordnance	MoD	Ministry of Defence
BD	Bomb Disposal	mm	Millimetres
BDO	Bomb Disposal Officer	NATO	North Atlantic Treaty Organisation
bgl	Below Ground Level	NEQ	Net Explosive Quantity
BGS	British Geological Survey	NFF	National Filling Factory
BH	Borehole	NGR	National Grid Reference
BPD	Bomb Penetration Depth	OD	Ordnance Datum
CDP	Cast Driven Piles	OS	Ordnance Survey
CFA	Continuous Flight Auger	OTU	Operational Training Unit
CIRIA	Construction Industry Research and Information Association	PBG	Polar Blasting Gelignite
CPT	Cone Penetration Testing	PM	Parachute Mine
CS	County Series	PoW	Prisoner of War
EFTS	Elementary Flying Training School	RADAR	Radio Detection And Ranging
ELG	Emergency Landing Ground	RAF	Royal Air Force
EO	Explosive Ordnance	RBL	Rifle Breach Loaded
EOC	Explosive Ordnance Clearance	RDX	Research Department Explosives
EOD	Explosive Ordnance Disposal	RFC	Royal Flying Corps
ERW	Explosive Remnants of War	RML	Rifle Muzzle Loaded
FAA	Fleet Air Arm	RN	Royal Navy
FPP	Flight Pilot Pool	RNAS	Royal Naval Air Service
FTS	Flight Training School	ROF	Royal Ordnance Factory
GI	Ground Investigation	SAA	Small Arms Ammunition
GIS	Geographic Information Systems	Sqn	Squadron
GL	Ground Level	TA	Territorial Army
GP	General Purpose	TNT	Trinitrotoluene
GPS	Global Positioning Systems	UK	United Kingdom
HAA	Heavy Anti-Aircraft	UN	United Nations
HE	High Explosive	USAAF	United States Army Air Force
HO	Home Office	UXB	Unexploded Bomb
HSE	Health and Safety Executive	UXO	Unexploded Ordnance
IB	Incendiary Bomb	V Weapons	<i>Vergeltungswaffe</i> – Vengeance Weapons
IED	Improvised Explosive Device	WAAF	Women's Auxiliary Air Force
JSEODOC	Joint Service Explosive Ordnance Disposal Operations Centre	WD	War Department
kg	Kilograms	WWI	World War One
km	Kilometres	WWII	World War Two

EXECUTIVE SUMMARY

Study Site

The Client has defined the Study Site as “Warrington Interchange Masterplan, Warrington, WA4 4SR”. The Site is located at NGR 365660, 384480.

Risk Level

MEDIUM

Potential Threat Sources

The most probable UXO threat is posed by WWII *German* HE bombs, whilst IBs and *British* AAA projectiles (which were used to defend against *German* bombing raids) pose a residual threat.

Risk Pathway

Given the types of UXO that might be present on-site, all types of aggressive intrusive engineering activities may generate a significant risk pathway.

Key Findings

During WWII, the Study Site was situated within the *Runcorn Rural District*, *Lymm Urban District* and *Bucklow Rural Districts*, which recorded one to three HE bombs per 100 hectares, very low levels of bombing. However, given that the Site was situated adjacent to an airfield which had been identified as a primary bombing target, the localised bombing density may in fact have been much greater.

Luftwaffe aerial reconnaissance photography associated with the Site identified an airfield (located 285m to the south) as a primary bombing target. However, there were no features in the vicinity which would have been considered secondary targets.

Further research found that *RNAS Stretton* was used by many Fleet Air Arm Squadrons throughout WWII. From 1944 the airfield was used as an Airfield Maintenance Yard, and continued to operate as such post-WWII. The airfield was closed on 4th November 1958.

ARP records associated with the Site were not available. Furthermore, whilst IBs may have fallen within the Study Site, they fell in such large numbers they were considered ubiquitous and accurate record keeping was either non-existent or perfunctory therefore, their prospective presence cannot be either corroborated or discounted. Nonetheless, due to the Site’s proximity to *RNAS Stretton* it is possible that information on bomb strikes was recorded and kept privately.

Official bomb damage mapping for the Site was not available. Further research and an analysis of post-war mapping did not identify any bomb damage on-site or in its immediate vicinity. Owing to the Site’s proximity to *RNAS Stretton* it is likely that any records may have been kept private as a matter of national security. Moreover, much of the Study Site was undeveloped during WWII and therefore post-war mapping would not ordinarily be expected to show bomb damage.

Pre-WWII mapping (1938) and aerial photography (1945) associated with the Site shows that it was located within a rural area and comprised of structures associated with *Bradley Hall* and undeveloped ground. As a result, it is plausible that a local civilian may have observed and reported a UXB entry holes, or that the Navy inspected the Site after raids, this is unlikely.

Some structures were built on-site by 1967, but not Site-wide. Consequently, it is considered likely that any UXO within the structural foundations of post-war buildings would have been discovered and removed, however, the potential for UXO to be present within remaining areas is assessed to be extant, although this is considered remote. Given that there is no evidence to suggest that the Site was subjected to bombing or bomb damage, the following risk mitigation measures are recommended as a minimum, in order to reduce risks ALARP, during all intrusive activities.

EXECUTIVE SUMMARY (...continued)

Recommended Risk Mitigation

All Groundworks in All Areas:

1. Operational UXO Emergency Response Plan; appropriate Site Management documentation should be held on-site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO discovery (this plan can be supplied by *6 Alpha*);

2. UXO Safety & Awareness Briefings; the briefings are essential when there is a possibility of explosive ordnance encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the identification of a UXB, what actions they should take to keep people and equipment away from such a hazard and to alert Site management. Information concerning the nature of the UXB threat should be held in the Site office and displayed for general information on notice boards, both for reference and as a reminder for ground workers. The safety awareness briefing is an essential part of the *Health & Safety Plan* for the Site and helps to evidence conformity with the principles laid down in the *CDM regulations 2015* (this briefing can be delivered directly, or in some cases remotely, by *6 Alpha*).

3. On-Call Engineer; An on-call EOD Engineer will be able to identify and/or advise on the appropriate course of action in the event of any suspicious and/or real UXO finds. *6 Alpha* offer three tiers of immediate telephone and/or email response.

For further information, please contact *6 Alpha Associates*:

Website: <http://www.6alpha.com>

Telephone: +44 (0)2033 713 900

Email: enquiry@6alpha.com

ASSESSMENT METHODOLOGY

Approach

6 Alpha Associates is an independent, specialist risk management consultancy practice, which has assessed the risk of encountering UXO (as well as buried bulk high explosives) at this Site, by employing a process advocated for this purpose by CIRIA. The CIRIA guide for managing UXO risks in the construction industry (C681) not only represents best practice but has also been endorsed by the HSE. Any risk mitigation solution is recommended *only* because it delivers the Client a risk reduced to ALARP at best value.

UXO hazards can be identified through the investigation of local and national archives associated with the Site, MoD archives, local historical sources, historical mapping as well as contemporaneous aerial photography (if it is available). Hazards will have only been recorded if there is specific information that could reasonably place them within the boundaries of the Site. The amalgamation of information is then assessed to enable the researcher to provide relevant and accurate risk mitigation practices.

The assessment of UXO risk is a measure of *probability of encounter* and *consequence of encounter*; the former being a function of the identified hazard and proposed development methodology; the latter being a function of the type of hazard and the proximity of personnel (and/or other 'sensitive receptors', such as equipment) to the hazard, at the moment of encounter.

If UXO risks are identified, the methods of mitigation we have recommended are considered reasonably and sufficiently robust to reduce them to ALARP. We advocate the adoption of the legal ALARP principle because it is a key factor in efficiently and effectively ameliorating UXO risks. It also provides a ready means for assessing the Client's tolerability of UXO risk. In essence, the principle states that if the cost of reducing a risk significantly outweighs the benefit, then the risk may be considered tolerable. This does not mean that there is never a requirement for UXO risk mitigation, but that any mitigation must demonstrate that it is beneficial. Any additional mitigation that delivers diminishing benefits and that consume disproportionate time, money and effort are considered *de minimis* and thus unnecessary. Because of this principle, UXB and UXO risks will rarely be reduced to zero (nor need they be).

Important Notes

Key source material is referenced within this document, whilst secondary/anecdotal information may be available upon request.

Although this report is up to date and accurate at the time of writing, our databases are continually being populated as and when additional information becomes available. Nonetheless, 6 Alpha have exercised all reasonable care, skill and due diligence in providing this service and producing this report.

The assessment levels are based upon our professional opinion and have been supported by our interpretation of historical records and third-party data sources. Wherever possible, 6 Alpha has sought to corroborate and to verify the accuracy of all data we have employed, but we are not accountable for any inherent errors that may be contained in third party data sets (e.g. *National Archive* or other library sources), and over which 6 Alpha cannot exercise control.

STAGE ONE – SITE LOCATION AND DESCRIPTION

Study Site

The Client has defined the Study Site as “Warrington Interchange Masterplan, Warrington, WA4 4SR”. The Site is located at NGR 365660, 384480. The Site location and Site boundary are presented at *Figures 1* and *2* respectively.

Location Description

The Study Site is situated within *Runcorn* and *Bucklow Rural Districts* and *Lymm Urban District* and covers an area of approximately 95.66 hectares (ha).

Furthermore, the Site is bounded by:

- North: *Grappenhall Lane*;
- East: an unnamed road;
- South: undeveloped ground;
- West: industrial buildings.

Aerial Photography (2017) (*Figure 3*)

Aerial photography (2017) corroborates the information above and shows that the Site is situated within a rural area with some industrial properties.

Proposed Works

The Client has described the following:

- Hand auger pits to 1.2m
- Dynamic window sample hole to 5m

Ground Conditions

It is important to establish the specific ground conditions in order to determine the maximum *German UXB* penetration depth as well as the potential for other types of munitions to be buried.

If the Site investigations and/or construction methodologies change, and/or if a specific methodology is to be employed, and/or if the scope of work is focused upon a specific part of the Site, then *6 Alpha* are to be informed so that the prospective UXO risks and the associated risk mitigation methodology might be re-assessed. Certain ground conditions may also constrain certain types of UXO risk mitigative works e.g. magnetometer survey is adversely affected in mineralised and made ground.

STAGE ONE – SITE LOCATION AND DESCRIPTION (...continued)

Ground Conditions

BGS borehole log “SJ68SE5 – M6 Widening Jct 20/21A B4A” (located 90m to the north-east of the Site), recorded the following strata:

Depth bgl (m)	Strata	Description
0-0.15m	Sandstone	Red brown fine to medium grained highly to moderately weathered silty sandstone. Very weak to moderately strong. With occasional grey green fine to medium grained sandstone lenses. Very weak.
0.15-2.7m	Sandstone	Grey green fine grained thinly laminated silty highly weathered sandstone. Weak. With occasional mudstone inclusions. Fractures horizontal tight no discolouration (drill induced).
2.7-14.1m	Siltstone	Red brown thinly laminated slightly weathered siltstone. Moderately strong. With occasional mudstone inclusions and gypsum inclusions and bands. Fractures sub-horizontal occasionally vertical. Tight no discolouration.
14.1-14.62m	Mudstone	Red brown slightly weathered silty mudstone. Weak.
14.62-15.1m	Sandstone	Red brown fine grained thinly laminated highly weathered sandstone. Very weak. With occasional grey green bands.
15.1-18m	Siltstone	Red brown thickly bedded slightly weathered siltstone. Moderately strong. Fractures sub-horizontal tight no discolouration.

BGS borehole log “SJ68SW16 – Appleton Thorn FGE/1240, Geological/ Inves. 2” (located 640m west of the Site) recorded the following strata:

Depth bgl (m)	Strata	Description
0-0.5m	Topsoil	Grass over brown clayey topsoil
0.5-1.6m	Sandy Clay	Firm reddish brown and tea green streaked sandy clay with fine lithorelics. Zone 4a.
1.6-2.05m	Sandstone and marl	Reddish brown and tea green moderately hard, very thin bedded closely jointed, moderately weathered fine-grained sandstone and marl with traces of friable clay. Zone 2.
2.05-3.5m	Sandstone and marl	Reddish brown sandstone and marl. Zone 2.

STAGE TWO – REVIEW OF HISTORICAL DATASETS

Sources of Information Consulted

The following primary information sources have been used in order to establish the background UXO threat:

1. *6 Alpha's Azimuth Database*;
2. *Home Office WWII Bomb Census Maps*;
3. WWII and post-WWII aerial photography;
4. Official Abandoned Bomb Register;
5. Information gathered from the *National Archives at Kew*;
6. Historic UXO information provided by *33 Engineer Regiment (Explosive Ordnance Disposal) at Carver Barracks, Wimbish*.

Potential Sources of UXO Contamination

In general, there are several activities that might contaminate a site with UXO but the three most common ways are: legacy munitions from military training/exercises; deliberate or accidental dumping (AXO) and ordnance resulting from war fighting activities (also known as the Explosive Remnants of War (ERW)).

During WWII, the *Luftwaffe* undertook bombing campaigns all over the *UK*. The most common type of UXO discovered today is the aerially delivered high explosive (HE) bomb, which are comparatively thick-skinned and dropped from enemy aircraft. If the bomb did not detonate when it was dropped, the force of impact enabled the UXO to penetrate the ground, often leaving behind it a UXB entry hole. These entry holes were not always apparent and some went unreported, leaving the bomb buried and unrecorded. More rarely, additional forms of *German* UXO are occasionally discovered including *inter alia* V1 and V2 rockets, Incendiary Bombs (IBs), and Anti-personnel (AP) bomblets.

Although the *Luftwaffe* had designated primary bombing targets across the *UK*, their high-altitude night bombing was not accurate. As a result, thousands of buildings were damaged and civilian fatalities were common. Bombs were also jettisoned over opportunistic targets and residential areas were sometimes struck.

As the threat of invasion lingered over *Britain* during WWII, defensive actions were undertaken. The *British* and *Allied Forces* requisitioned large areas of land for military training and bomb storage (including HE bombs, naval shells, artillery and tank projectiles, explosives, LSA and SAA). Thousands of tonnes of these munitions were used for the *Allied Forces* weapon testing and military training alone. It has been estimated that at least 20 per cent of the *UK's* land has been used for military training at some point.

The best practice guide for dealing with your UXO risks on land (CIRIA publication C681) suggests that approximately 10 per cent of all munitions deployed failed to function as designed. ERW are therefore, still commonly encountered, especially whilst undertaking construction and civil engineering groundwork.

Furthermore, in exceptional circumstances, UXO is discovered unexpectedly and without apparent rational explanation. There are several ways this might occur:

- When *Luftwaffe* aircraft wished to swiftly escape e.g. from an aerial attack, they would jettison some or all of their bombs and flee. This is commonly referred to as *tip and run* and it has resulted in bombs being found in unexpected locations;
- Transportation of aggregate containing munitions to an area that was previously free of UXO, usually related to construction activities employing material dredged from a contaminated offshore borrow site;
- Poor precision during targeting (due to high altitude night bombing and/or poor visibility) resulted in bombs landing off target, but within the surrounding area.
- *British* decoy sites were also constructed to deliberately cause incorrect targeting. For obvious reasons, such sites were often built in remote and uninhabited areas.

STAGE TWO – REVIEW OF HISTORICAL DATASETS (...continued)

Site History

From an analysis of the CS and OS historical mapping and aerial photography associated with the Site, the following Site history can be deduced:

Year	On-site	Vicinity
1899 CS Map	The majority of the Site was undeveloped, but <i>Bradley Hall</i> was located in the central sector.	The site was situated in a rural area.
1910-11 CS Map	No changes were recorded on-site.	No changes were recorded in the vicinity.
1938 CS Map	Some more structures were built near <i>Bradley Hall</i> .	No changes were recorded in the vicinity.
1945 Aerial Photography	No changes were recorded on-site.	Buildings were recorded immediately west. An airfield was recorded to the south.
1954 OS Map	No changes were recorded on-site.	No changes were recorded in the vicinity.
1964-70 OS Map	No changes were recorded on-site.	The buildings to the west were labeled 'General Storage Depot'. A road was constructed to the east.
1967 OS Map	Some structures were built on-site.	No changes were recorded in the vicinity.
1970-81 OS Map	No changes were recorded on-site.	No changes were recorded in the vicinity.
1984-93 OS Map	No changes were recorded on-site.	The area became more developed. A road was constructed immediately to the north, and another to the south.
2005 Aerial Photography	No changes were recorded on-site.	A new road junction was recorded to the north-east.
2009 Aerial Photography	No changes were recorded on-site.	No changes were recorded in the vicinity.

WWII Site Use

The CS mapping prior to WWII (1938), shows that the Study Site was located within a rural area, and the Site comprised of buildings associated with *Bradley Hall*.

Aerial Photography (1945) (Figure 4)

The aerial photography (1945) associated with the Site shows that some structures were located in the central sector of the Site. Nonetheless, the resolution of the photograph is insufficient to be able to identify accurately, the precise local features and/or type of structures, then within the curtilage of the Site.

WWII Bombing of Cheshire

The county of *Cheshire* was not subjected to a vast amount of bombing as the city of *Liverpool*, located to the north, was a strategic bombing target for the *Luftwaffe* due to its port industry and facilities. Nevertheless, *Cheshire* was home to numerous targets of interest such as chemical works, army training camps, barracks, arms factories, port installations and a *Royal Ordnance Factory*. *Luftwaffe* aircraft often jettisoned their remaining cargo of bombs on towns and cities whilst flying back in order to make their aircraft lighter for the journey. As such, these sites in *Cheshire* would have been targeted with excess bombs on their return flight from *Liverpool*.

STAGE TWO – REVIEW OF HISTORICAL DATASETS (...continued)

WWII Luftwaffe Bombing Targets (*Figure 5*)

Prior to WWII, the *Luftwaffe* conducted numerous aerial photographic reconnaissance missions over *Britain*, recording key military, industrial and commercial facilities for attack, in the event of war. In addition, logistics infrastructure and public services, such as railways, canals, power stations, reservoirs, water and gas works were also considered viable bombing targets.

Luftwaffe aerial reconnaissance photography associated with the Site identified an airfield (located 285m to the south) as a primary bombing target. However, there were no features in the vicinity which would have been considered secondary targets.

RNAS Stretton (*Figure 6*)

When construction began on *Stretton* airfield it was intended to be a base from which to defend *Manchester* and *Liverpool*. However, by the time the airfield was completed, the threat to *Manchester* and *Liverpool* had subsided. As a result, the airfield was commissioned as *RNAS Stretton/HMS Blackcap* in June 1942. The airfield was used by many Fleet Air Arm Squadrons throughout WWII. From 1944 the airfield was used as an Airfield Maintenance Yard, and continued to operate as such post-WWII. The airfield was closed on 4th November 1958.

WWII HE Bomb Strikes

During WWII, ARP wardens compiled detailed logs of bomb strikes across their respective districts. However, ARP records associated with the Site were not available. Furthermore, whilst IBs may have fallen within the Study Site, they fell in such large numbers they were considered ubiquitous and accurate record keeping was either non-existent or perfunctory therefore, their prospective presence cannot be either corroborated or discounted.

In addition to IBs and HE bomb strikes, during the latter part of the war when aerial bombing had significantly declined, the main threat came from V type weapons. V1 and V2 rockets were thin-skinned, unmanned and inaccurate weapons. Despite this, there is no evidence to suggest that the Site (or its immediate vicinity) was subjected to rockets strikes during WWII.

WWII Bomb Damage

Official bomb damage mapping for the Site was not available. Further research and an analysis of post-war mapping did not identify any bomb damage on-site or in its immediate vicinity.

WWII HE Bomb Density (*Figure 7*)

The Study Site was located within the *Runcorn Rural District*, *Lymm Urban District* and *Bucklow Rural Districts*, which recorded one to three HE bombs per 100 hectares, very low levels of bombing. However, given that the Site was situated adjacent to an airfield which had been identified as a primary bombing target during WWII, the localised bombing density may in fact have been much greater.

Abandoned Bombs

An examination of the official abandoned bomb records has not identified any abandoned bombs on-site or within 1,000m of it.

Records of WWII UXB Disposal Tasks

Civil defence records listing UXBs dealt with in *Runcorn Rural District*, *Lymm Urban District* and *Bucklow Rural District* from 1940-45 was not available. Further research did not identify any WWII UXB disposal tasks on-site or in its vicinity.

Records of Post-WWII UXB Disposal Tasks

An examination of the post-WWII BDO tasks associated with the area has not identified any BDO operations on-site or in its vicinity.

STAGE THREE – DATA ANALYSIS

Was the ground undeveloped during WWII?

Predominantly, yes; according to the CS mapping prior to WWII (1938), the Study Site comprised mostly undeveloped ground, but also contained some structures associated with *Bradley Hall*.

Is there a reason to suspect that the immediate area was a bombing target during WWII?

Yes; *Luftwaffe* aerial reconnaissance photography associated with the Site identified an airfield (located 285m to the south) as a primary bombing target. However, there were no features in the vicinity which would have been considered secondary targets.

As WWII progressed, major towns and cities became targets within their own right as the *Luftwaffe* switched from specifically targeting industrial and military facilities to a more general method of *carpet bombing*, and as a result, suburban and residential areas were frequently bombed.

Is there firm evidence that ordnance landed on-site?

No; ARP records associated with the Site were not available. Furthermore, whilst IBs may have fallen within the Study Site, they fell in such large numbers they were considered ubiquitous and accurate record keeping was either non-existent or perfunctory therefore, their prospective presence cannot be either corroborated or discounted.

Nonetheless, due to the Site's proximity to *RNAS Stretton* it is possible that information on bomb strikes was recorded and kept privately.

Is there firm evidence of bomb damage on-site?

No; official bomb damage mapping for the Site was not available. Further research and an analysis of post-war mapping did not identify any bomb damage on-site or in its immediate vicinity. Owing to the Site's proximity to *RNAS Stretton* it is likely that any records may have been kept private as a matter of national security. Moreover, much of the Study Site was undeveloped during WWII and therefore post-war mapping would not ordinarily be expected to show bomb damage.

Would a UXB entry hole have been observed and reported during WWII?

Unlikely; the Site was mostly undeveloped during WWII, and while it is possible that a local civilian may have observed and reported any UXB entry holes, or that the Navy inspected the Site after raids, this is unlikely.

Is there any reason to suspect that live firing or military training may have occurred at this location?

No; there is no supporting evidence to suggest that military training, guns or associated artillery (or other types of) munitions were ever stored, manufactured, located and/or fired from this Site during WWII nor subsequently. That said, both munitions storage and live firing may have been undertaken at the airfield located 285m to the south.

What is the expected level of UXO contamination?

The most likely source of UXO contamination is from *German* aerially delivered ordnance, which ranges from small IBs through to large HE bombs (the latter forms the principal threat). Additional residual contamination may be present from *British* AAA projectiles (which were used to defend the UK against *German* bombing raids).

STAGE THREE – DATA ANALYSIS (...continued)

Would previous earthwork have removed the potential for UXO to be present?

In some areas; possibly; from an analysis of the post-WWII mapping associated with the Site, the following phases of Site activity were evident:

1967 OS Map - Some structures were built on-site.

On this evidence, it is apparent that the Site has not been subject to any significant post-WWII redevelopment, although some small structures have been built. As a result, it is likely that any UXO within the structural foundations of post-war buildings would have been discovered and removed, however, the potential for UXO to be present within remaining areas is assessed to be extant.

Does the probability of a UXO discovery vary across the Site?

Yes; the probability of discovering UXO within post-WWII foundations is considered to be remote, however, the probability of UXO discovery within remaining areas of the Site is extant, although this is considered unlikely.

STAGE FOUR – RISK ASSESSMENT

Threat Items

The most probable UXO threat items are *German* HE bombs, whilst IBs and *British* AAA projectiles pose a residual threat. The consequences of initiating *German* HE bombs are more severe than initiating IBs or AAA projectiles, and thus they pose the greatest prospective risk to intrusive works.

Maximum Bomb Penetration Depth

Considering the ground conditions (highlighted in Stage 1), the average BPD for a 250kg *German* HE bomb is assessed to be approximately 5m bgl, with the maximum BPD considered to be approximately 10m bgl. Although it is possible that the *Luftwaffe* deployed larger bombs in the area, their deployment was infrequent, and to use such larger (or the largest) bombs for BPD calculations are not justifiable on either technical or risk management grounds.

WWII *German* bombs have a greater penetration depth when compared to IBs and AAA projectiles, which are unlikely to be encountered at depths greater than 1m bgl.

Risk Pathway

Given the types of UXO that might be present on-site, all types of aggressive intrusive engineering activities (i.e. investigative groundworks) may generate a significant risk pathway. Whilst not all UXO encountered aggressively will initiate upon contact, such a discovery could lead to serious impact on the project especially in terms of critical injury to personnel, damage to equipment and project delay.

Prospective Consequences

Consequences of UXO initiation include:

1. Fatally injure personnel;
2. Severe damage to plant and equipment;
3. Deliver blast and fragmentation damage to nearby buildings;
4. Rupture and damage underground utilities/services.

Consequences of UXO discovery include:

1. Delay to the project and blight;
2. Disruption to local community/infrastructure;
3. The expenditure of additional risk mitigation resources and EOD clearance;
4. Incurring additional time and cost.

UXO RISK CALCULATION

Site Activities

Although there is some variation in the probability of encountering and initiating items of UXO when conducting different types of intrusive activities, a number of investigative methodologies have been described for analysis at this Site. The consequences of initiating UXO vary greatly, depending upon, *inter alia* the mass of HE in the UXO and how aggressively it might be encountered. For this reason, *6 Alpha* has conducted separate risk rating calculations for each investigative methodology that might be employed.

Risk Rating Calculation

6 Alpha's Semi-Quantitative Risk Assessment assesses and rates the risks posed by the most probable threat items when conducting a number of different activities on the Site. Risk Rating is determined by calculating the probability of encountering UXO and the consequences of initiating it.

STAGE FOUR - RISK ASSESSMENT (...continued)

UXO RISK CALCULATION TABLE – ALL AREAS

Activity	Threat Item	Probability (SHxEM=P)	Consequence (DxPSR=C)	Risk Rating (Px C=RR)
Hand Auger Pits (to 1.2m)	HE Bombs	1x2=2	1x3=3	2x3=6
	AAA Projectiles	1x2=2	3x1=3	2x3=6
	IBs	1x2=2	3x1=3	2x3=6
Window Sampling (to 5m)	HE Bombs	1x2=2	3x2=6	2x6=12
	AAA Projectiles	1x2=2	3x1=3	2x3=6
	IBs	1x2=2	3x1=3	2x3=6

Abbreviations – Site History (SH), Engineering Methodology (EM), Probability (P), Depth (D), Consequence (C), Proximity to Sensitive Receptors (PSR) and Risk Rating (RR).

STAGE FIVE – RECOMMENDED RISK MITIGATION MEASURES

If a geophysical survey is required are the ground conditions an issue?

Non-Intrusive Methods of Mitigation – Magnetometer results may be affected by ferro-magnetic contamination due to previous construction activities and made ground within the Site.

MITIGATION MEASURES TO REDUCE RISK TO ‘ALARP’

Activity/Area	Risk Mitigation Measures	Final Risk Rating
All Activities in All Areas	<p>1. Operational UXO Emergency Response Plan; appropriate Site Management documentation should be held on Site to guide and plan for the actions which should be undertaken in the event of a suspected or real UXO discovery (this plan can be supplied by <i>6 Alpha</i>);</p> <p>2. UXO Safety & Awareness Briefings; the briefings are essential when there is a possibility of explosive ordnance encounter and are a vital part of the general safety requirement. All personnel working on the Site should receive a briefing on the identification of a UXB, what actions they should take to keep people and equipment away from such a hazard and to alert Site management. Information concerning the nature of the UXB threat should be held in the Site office and displayed for general information on notice boards, both for reference and as a reminder for ground workers. The safety awareness briefing is an essential part of the <i>Health & Safety Plan</i> for the Site and helps to evidence conformity with the principles laid down in the <i>CDM regulations 2015</i> (this brief can be delivered directly, or in some cases remotely, by <i>6 Alpha</i>).</p> <p>3. On-Call Engineer; An on-call EOD Engineer will be able to identify and/or advise on the appropriate course of action in the event of any suspicious and/or real UXO finds. <i>6 Alpha</i> offer three tiers of immediate telephone and/or email response.</p>	ALARP

This assessment has been conducted based on the information provided by the Client, should the proposed works change then *6 Alpha* should be re-engaged to refine this risk assessment

Report Figures

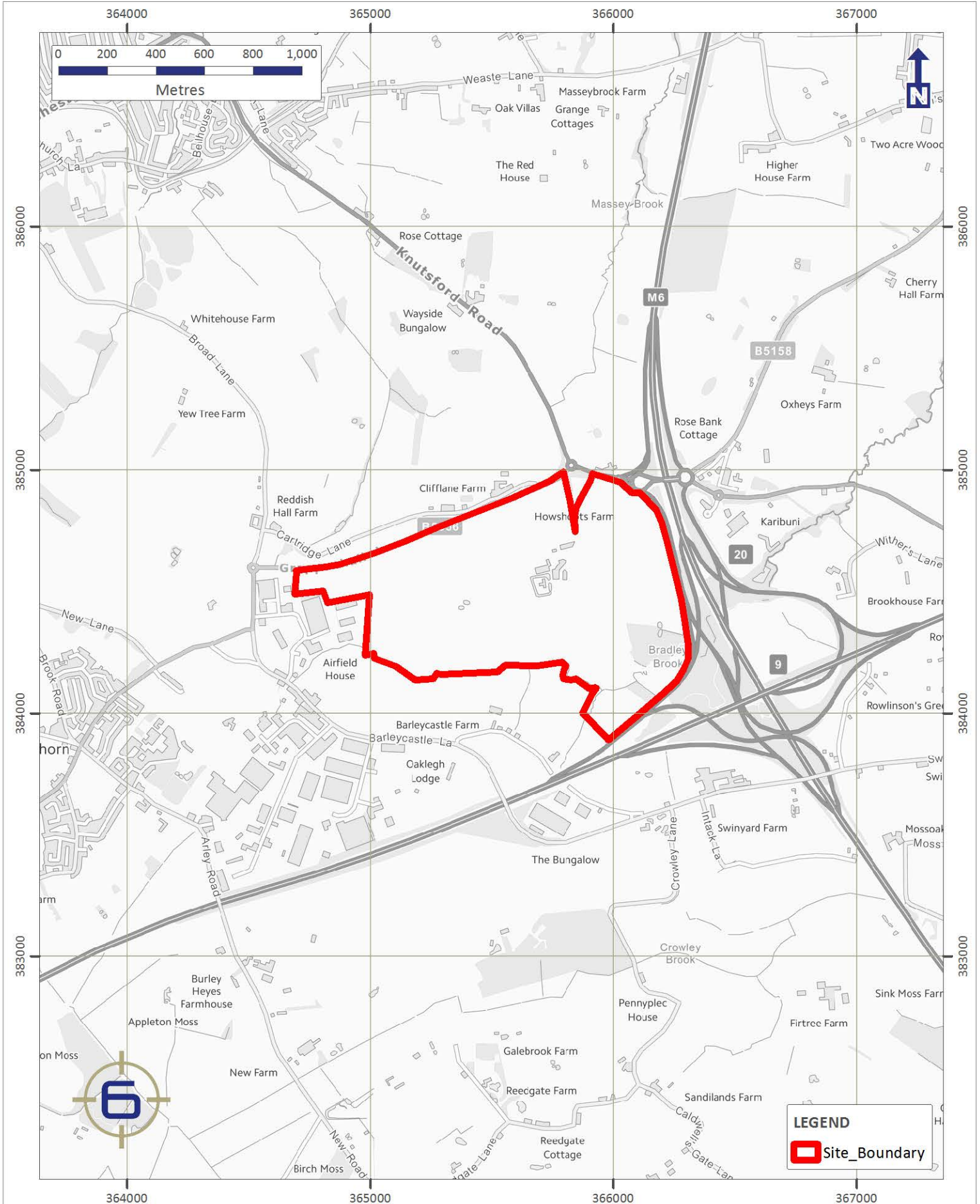
Figure One

Site Location



WARRINGTON INTERCHANGE MASTERPLAN, WARRINGTON, WA4 4SR

Site Location



LEGEND

 Site_Boundary


PROJECT NO. P6173	FIGURE 1	DRAWN GC	CHECKED RG	DATE 18 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	
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Figure Two

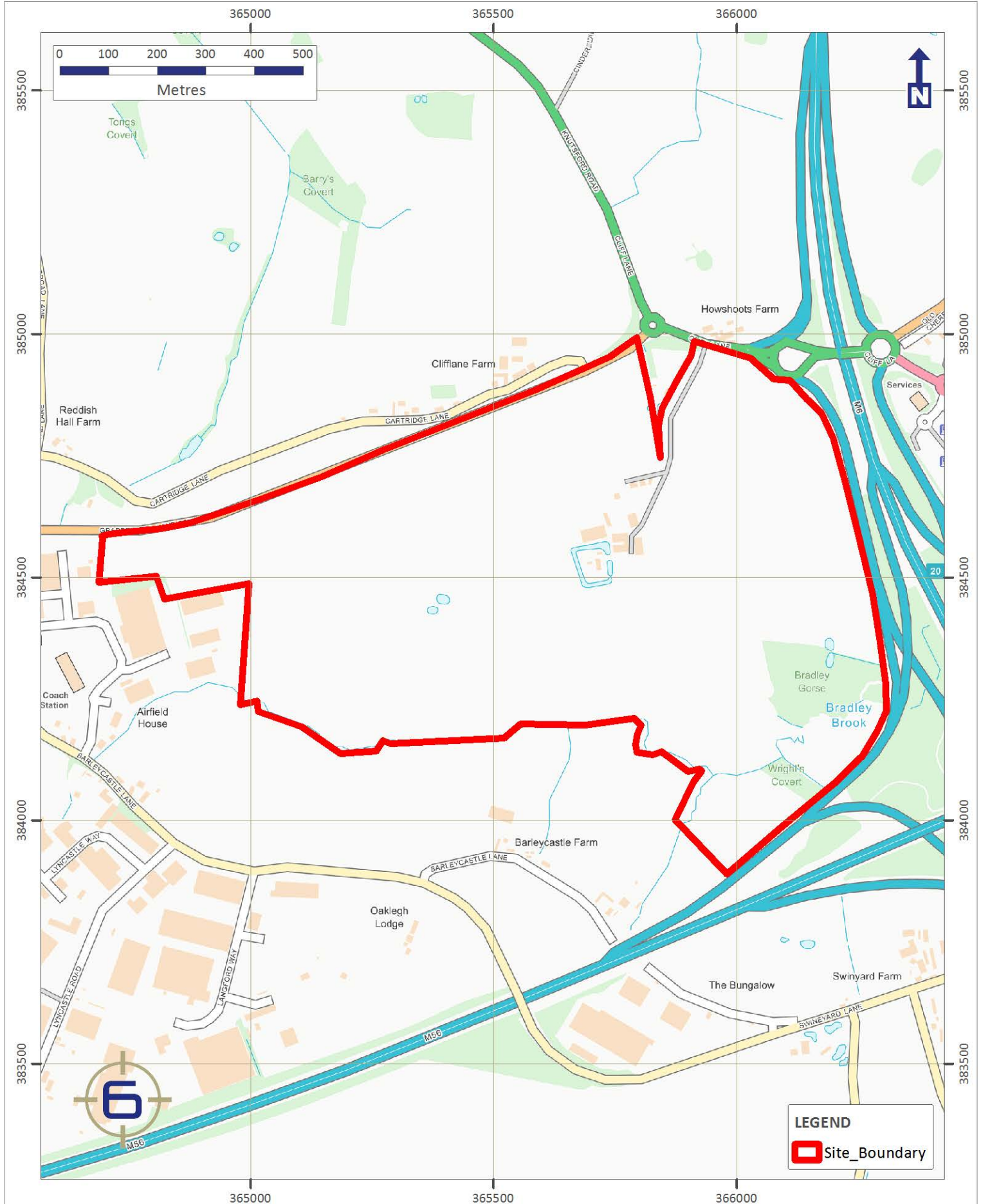
Site Boundary



WARRINGTON INTERCHANGE MASTERPLAN, WARRINGTON, WA4 4SR



Site Boundary



LEGEND

Site_Boundary

PROJECT NO. P6173	FIGURE 2	DRAWN GC	CHECKED RG	DATE 18 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	
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Figure Three

Aerial Photography (2017)



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Aerial Photography (2017)



PROJECT NO. P6173	FIGURE 3	DRAWN GC	CHECKED RG	DATE 18 September 2017	Map data: Google	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	alpha ASSOCIATES
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Figure Four

Aerial Photography (1945)



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Aerial Photography (1945)



PROJECT NO. P6173	FIGURE 4	DRAWN GC	CHECKED RG	DATE 18 September 2017	Map data: Google, The GeoInformation Group	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	alpha ASSOCIATES
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Figure Five

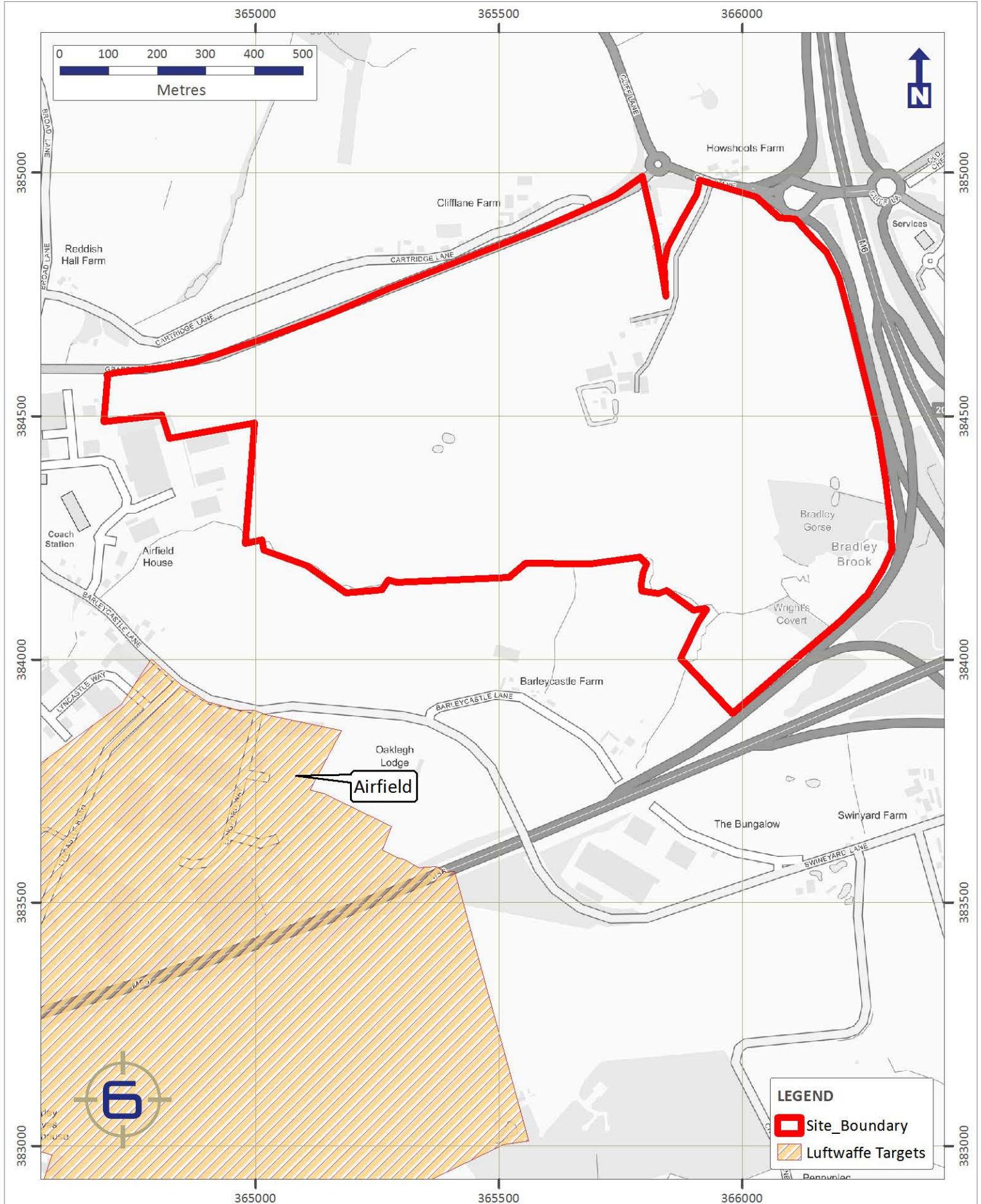
WWII Luftwaffe Bombing Targets



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WWII Luftwaffe Bombing Targets



PROJECT NO. P6173	FIGURE 5	DRAWN GC	CHECKED RG	DATE 18 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	alpha ASSOCIATES
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Figure Six

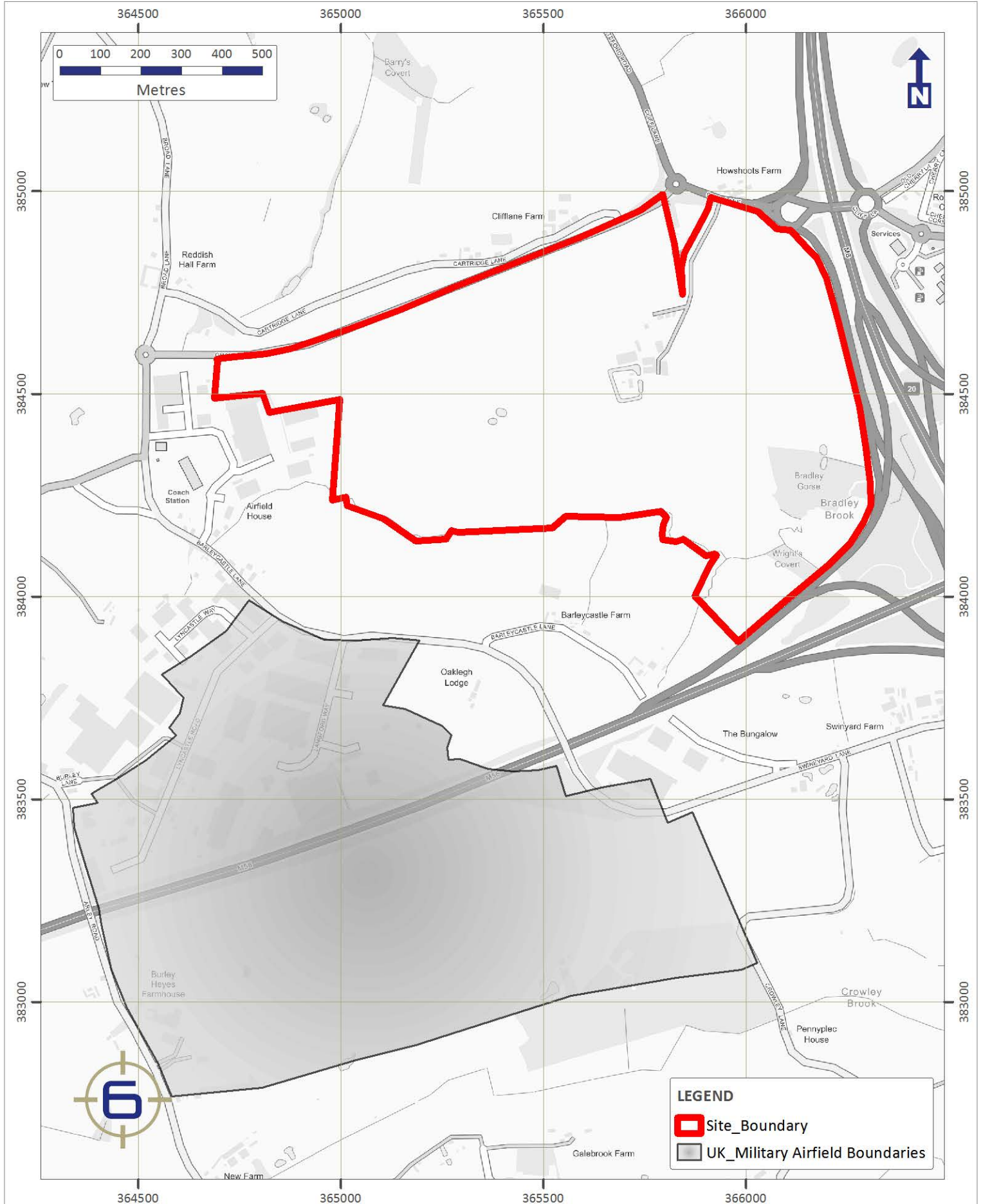
Extent of RNAS Stretton



WARRINGTON INTERCHANGE MASTERPLAN, WARRINGTON, WA4 4SR



Extent of RNAS Stretton



PROJECT NO. P6173	FIGURE 6	DRAWN GC	CHECKED RG	DATE 18 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	alpha ASSOCIATES
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Figure Seven

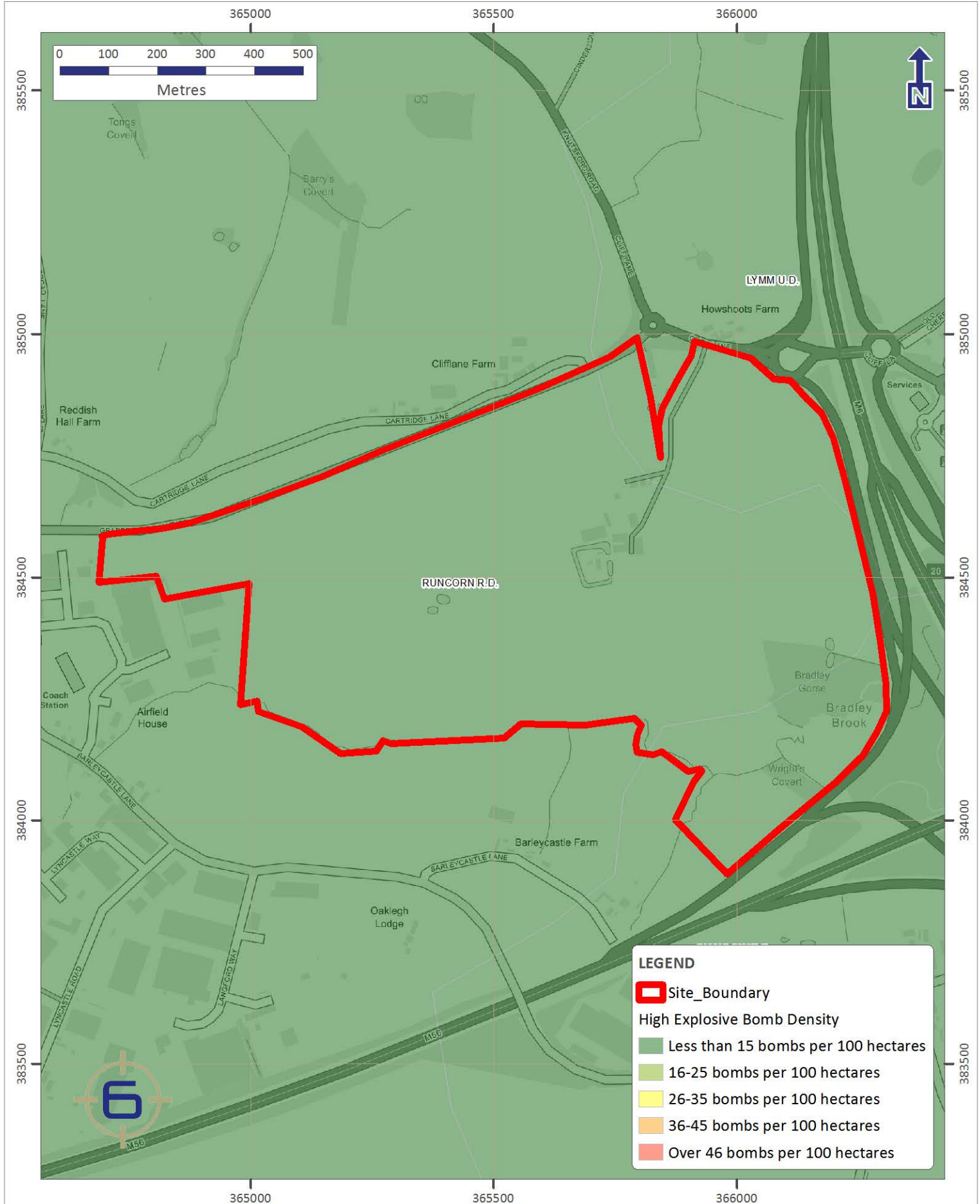
WWII High Explosive Bomb Density



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WWII High Explosive Bomb Density



LEGEND

- Site_Boundary
- High Explosive Bomb Density
 - Less than 15 bombs per 100 hectares
 - 16-25 bombs per 100 hectares
 - 26-35 bombs per 100 hectares
 - 36-45 bombs per 100 hectares
 - Over 46 bombs per 100 hectares

PROJECT NO. P6173	FIGURE 7	DRAWN GC	CHECKED RG	DATE 18 September 2017	Contains Ordnance Survey data © Crown copyright and database right 2017	Produced by and Copyright to 6 Alpha Associates Ltd. Users noting any errors please notify 6 Alpha.	
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Appendix G: Risk Assessment Framework and Methodology

Background Methodology

The contaminated land regime under Part II A of the Environmental Protection Act 1990 provides a risk based approach to the identification and remediation of land where contamination poses an unacceptable risk to human health or the environment. For 'contaminated land' to exist a valid contaminant linkage must be present; that is, there should be a source of contamination, a receptor where 'significant harm' or 'significant possibility of harm' may be caused; or pollution of controlled waters is being, or likely to be caused, and a pathway which connects the two. Should any element of this contaminant linkage not be present (or severed) then the land may not be regarded as contaminated land. The risk assessments undertaken in this report have been undertaken in accordance with current statutory guidance and good practice, including CIRIA C552. The following tables present the definitions of the risk terms used during risk assessment for the site based on CIRIA C552.

Contamination Risk Rating Terminology - Consequence

Potential Consequence of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
Severe	Short-term (acute) risk to human health likely to result in significant harm. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.
Medium	Long-term (chronic) damage to human health. Pollution of sensitive water resources. A significant in change in a particular ecosystem, or organism forming part of such ecosystem. Damage to sensitive buildings and structures.
Mild	Slight short term health effects to humans. Slight pollution of non-sensitive water resources. Some change to population densities but with no negative effects on the function of the ecosystem. Slight damage to sensitive buildings, structures and services.
Minor (Negligible)	Non-permanent effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services (e.g. discolouration of concrete).

Contamination Risk Rating Terminology – Probability

Classification of Probability of Hazard – Receptor Linkage (in accordance with CIRIA C552)	
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely in the long term.
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Matrix of Consequence versus Probability to determine Resultant Risk Classification

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Resultant Risk Classification Definitions

Potential Significance: Risk Classification (in accordance with CIRIA C552)	
Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard at the site. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not undertaken already) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the long term.
Moderate / Low Risk	Not defined in context in CIRIA 552.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

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Warrington Interchange MP

Baseline Geotechnical & Geoenvironmental Assessment

First Industrial / Langtree




Job No: 1015524
Doc Ref: 1015524.RPT.GL.003
Revision: —
Revision Date: 14 September 2017

Project title	Warrington Interchange MP	Job Number
Report title	Baseline Geotechnical & Geoenvironmental Assessment	1015524

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1.0

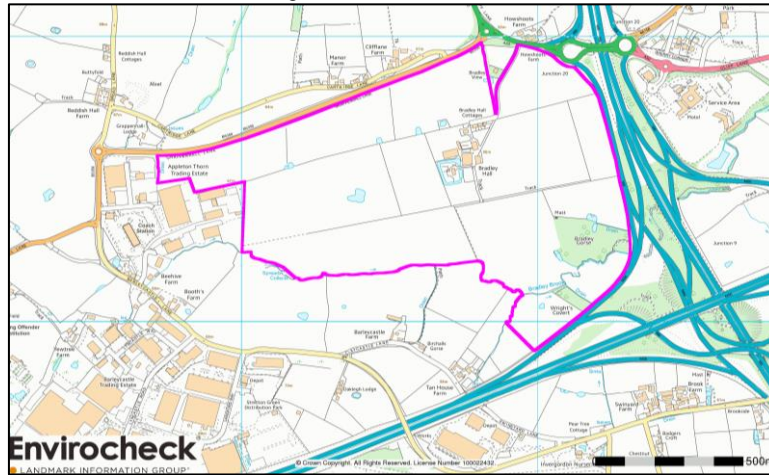
Baseline Geotechnical & Geoenvironmental Assessment

1.0 Baseline Geotechnical & Geoenvironmental Assessment

1.1 Introduction

Langtree (the Client) are proposing to redevelop the site located approximately 6 km south east of the centre of Warrington, Cheshire. The site’s location and boundary is shown in Figure 1.

Figure 1: Site Location Plan



1.2 Objectives

This assessment of the site has been undertaken in the context of the proposed development in order to assess potential geoenvironmental and geotechnical risk and development constraints and provide outline recommendations for further work. The assessment is based upon the review of readily available information pertaining to the site and a site inspection visit.

1.3 The Scheme

The proposed development is understood to comprise nine warehouse units located across the site, surrounding the existing Bradley Hall and Bradley Gorse, including areas of soft landscaping and three large ponds.

1.4 Site Details

A summary of the site’s key features is given in Table 1.

Table 1: Site Details

Site Area and Shape	The site comprises an irregular shaped parcel of land approximately 92 Ha in area.
Site Boundaries and Adjacent Land Uses	<ul style="list-style-type: none"> ▪ The B5356 runs along the northern site boundary meeting the A50 to the north east of the site with farmland beyond. Bradley View house is located north of the site to the south of the B5356. ▪ The M6 is located to the east of the site running along the site boundary. ▪ Bradley Brook is located along the southern boundary to the east of the site with Barleycastle Farm beyond. ▪ Appleton Thorn Trading Estate lies immediately west of the site.
Site Topography	The site generally slopes ~10m from the north to the south / south east towards Bradley Brook.
Existing Land Uses/Features	<p>Bradley Hall Farm and Bradley Hall are located in the centre of the site with Bradley Hall Cottages directly north. Pastural fields cover the majority of the site.</p> <p>An area of woodland known as Bradley Gorse is located in the south east corner of the site and Bradley Brook runs through the south east corner of the site, south of Bradley Gorse.</p>

Surface Cover	The majority of the site is covered by pastoral farmland, with dense woodland covering an area in the south east corner of the site. Hardstanding surrounds the buildings associated with Bradley Hall Farm in the centre of the site.
----------------------	--

1.5 Historical Development

By 1877, the site was recorded as mainly agricultural in use with Bradley Hall, Bradley Hall Farm, Bradley Gorse, Bradley Brook and 21 ponds recorded on site. By 1970, the site has assumed its present-day layout, with Bradley Cottages also recorded on site. In 2017, only 12 ponds are recorded on site, the remainder having been potentially infilled.

1.6 Geological Setting

The entire site is anticipated to be covered by Glacial Till deposits which are typically firm to stiff clays with variable amounts of sands and gravels. In the north west edge of the site it is likely that rockhead will be shallow as geological mapping shows superficial deposits to be absent in this area, whilst deposits vary in thickness between 0.90 to 2.70m across the site.

The site is underlain by a bedrock of Bollin Mudstone Member consisting of red marl interbedded with evaporite deposits. Evaporite deposits may include gypsum, halite or other soluble / sulphate bearing strata.

Made ground is anticipated to be present proximal to Bradley Hall and Bradley Hall Farm in the centre of the site.

1.7 Unexploded Ordnance (UXO) Risk

A preliminary UXO risk assessment was obtained for the site due to the proximity of an airfield recorded on historical maps ~250m south of the site. The report indicates a high possibility of UXO encounter at the site and therefore, a detailed UXO risk assessment is currently being undertaken for the site.

The detailed UXO risk assessment will inform any risk mitigation measures that need to be employed during any subsequent intrusive ground investigation or construction phases.

1.8 Geoenvironmental Setting

The superficial Glacial Till is classified as a Secondary Aquifer – Undifferentiated and the underlying Bollin Mudstone Member bedrock is classified as a Secondary Aquifer – B by the Environment Agency and is therefore generally capable of storing limited amounts of groundwater.

The site is not located within an Environment Agency groundwater Source Protection Zone and the Envirocheck Report indicates there to be no groundwater abstractions within 250m of the site.

The whole site falls within an area of Adopted Green Belt and an area of Unadopted Green Belt is recorded in the south east of the site.

1.9 Preliminary Geoenvironmental Assessment

No potential sources of contamination were identified during the site inspection, although it is anticipated that fuel storage tanks associated with the agricultural land use may be located on site.

Potential sources identified as part of the desk based research are as follows;

- Contamination within shallow soils associated with the agricultural use of the site and/or the infilling of the former ponds with presently undetermined materials.
- The infilled ponds located on the site and in close proximity to the site are considered to be a potential source of hazardous ground gas.

1.10 Development Constraints

The following possible development constraints have been identified:

- The entire site is underlain by the Bollin Mudstone Member, a red marl interbedded with evaporite and is recorded to be within the Cheshire Brine Subsidence Compensation District. Therefore, there may be the potential for dissolution

features to exist within the evaporite deposits where in contact with groundwater beneath the site and where salt works may be present beneath the site. The potential will be further assessed as part of the Phase I Geotechnical & Geoenvironmental Assessment.

- High sulphate concentrations resulting from the weathering of the Bollin Mudstone Member bedrock beneath the site have the potential to attack buried concrete.
- Groundwater levels beneath the site are anticipated to be shallow due to the presence of Bradley Brook and several ponds and water features located across the site.
- A number of historical ponds are assumed to have been infilled based upon historical mapping of the site. The nature of this fill material is unknown and may contain contaminants and the ponds may have been infilled in an uncontrolled manner which may result in future uncontrolled settlements in these areas.
- Organic material may be present across the site due to the presence of both historical and existing water features located on site. This may be soft and compressible, representing a risk to buildings in terms of both absolute and differential settlements and may also represent a source of hazardous ground gas.

1.11 Recommendations for Further Works

It is anticipated that an Environmental Impact Assessment will be required for planning purposes as well as a detailed assessment of the geotechnical and land quality (contamination) status of the site. Therefore, it is recommended that a Phase II intrusive ground investigation is undertaken at the site.

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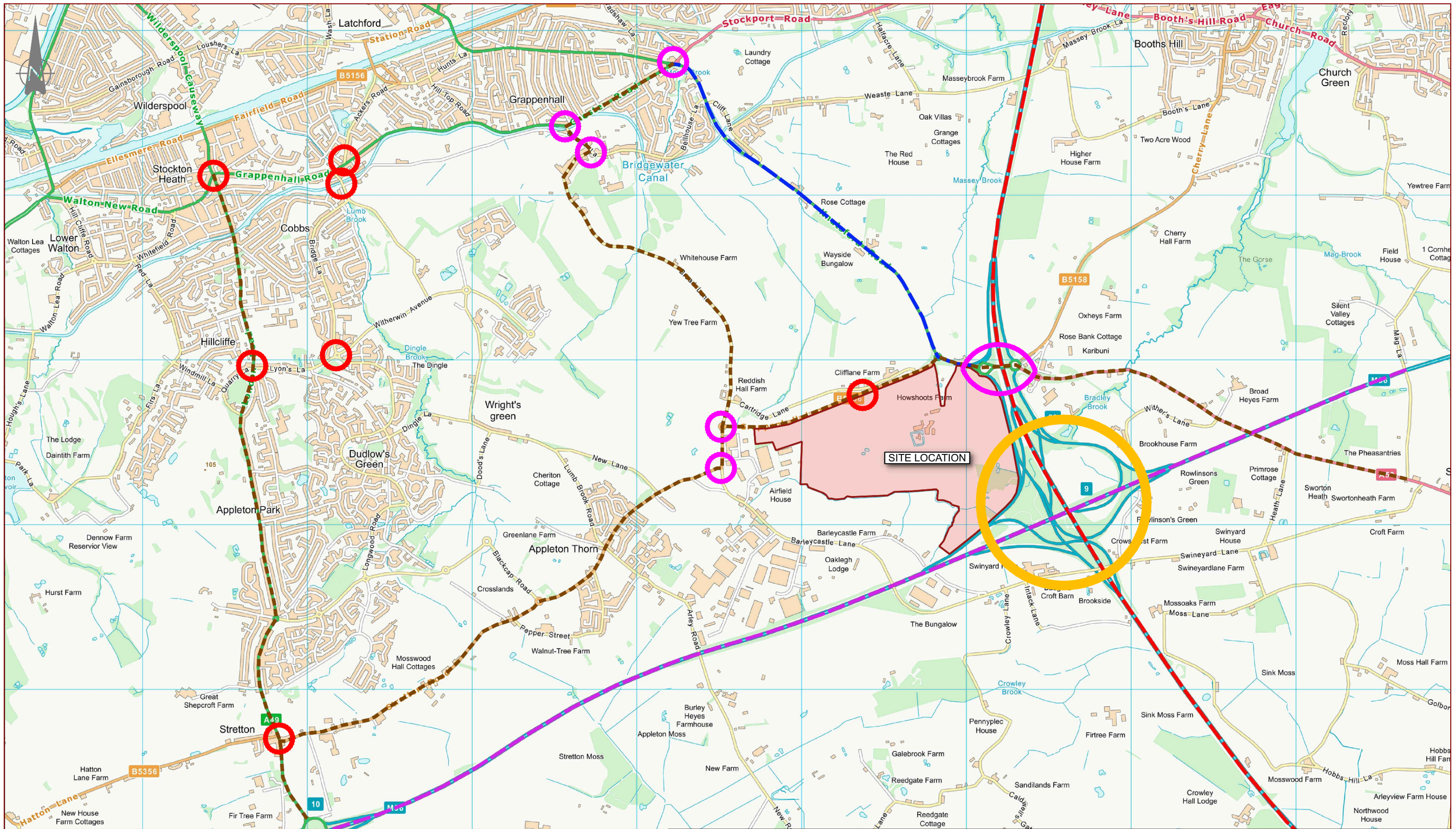
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ES Scoping Appendix 9 – Traffic and Transportation:

- Plan of Junctions Assessed



- KEY:**
- Junction already surveyed in July 2017
 - Junction not surveyed yet
 - Data for the M56/ M6 Interchange collected from Data.gov.uk



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Project:	SIX : 56 WARRINGTON	Status:	PRELIMINARY	
Drg Title:	JUNCTIONS POTENTIALLY TO BE INCLUDED IN TRANSPORT ASSESSMENT STUDY AREA			
Project No:	Originator:	Zone:	Level:	Type:
64076	- CUR	- XX	- 00	- DR - TP - 04002 - P02
Discipline:	Category / Number:	Rev:		
Drawn By:	LK	Checked By:	AV	
Designed By:	LK	Date:	18/11/17	
Scale:	NTS			

P02	Data collection area added to plan	23/02/18	JM
Rev:	Description:	Date:	By:

GENERAL NOTES:

ES Scoping Appendix 10 – Flood Risk and Drainage:

- Drainage and Flood Risk Baseline Assessment

Warrington Interchange MP

Drainage and Flood Baseline Assessment

First Industrial / Langtree

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1.0

Introduction

1.0 Introduction

Cundall has been commissioned to undertake Environmental Impact Assessment in relation to drainage and flood risk for eventual inclusion in an Environmental Statement required for outline planning application for a new circa 100 hectare development site off Cliff Road, Warrington.

This baseline assessment has been undertaken to set the initial parameters for the Environmental Statement Scoping stage.

This report covers the following baseline in relation to drainage and flood risk in the context of the new development proposals:

- Site walkover findings
- Record information
- Initial liaison with statutory consultees

2.0

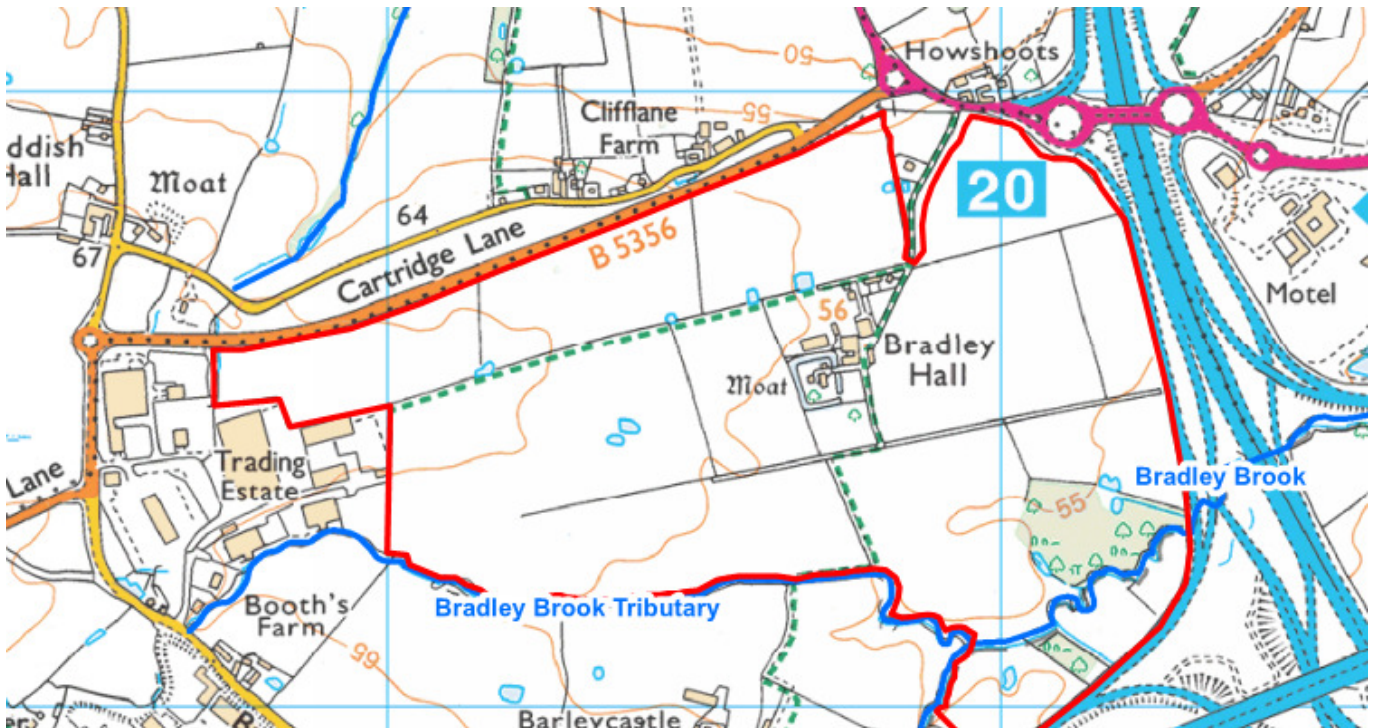
Site Findings

2.0 Site Findings

A site visit was undertaken on Wednesday 30th September to investigate existing features relating to land, drainage and flood risk. The following items were observed during the walkover which will need to be considered in the Environmental Scoping and the Masterplanning of the scheme.

2.1 Bradley Brook (and tributary)

A watercourse (known as Bradley Brook to the east and a tributary of Bradley Brook to the west, see images below) is located to the southern boundary of the development. The watercourse originates from Barleycastle lane where it flows through the site conveying flows offsite to the east across the M6. The Brook was walked along its full length as part of the site walkover and no particular issues were encountered that require highlighting in the baseline although it will be considered in its entirety during scoping and impact.



Extract from Environment Agency Map



Photographs showing Bradley Brook (and tributary)

2.2 Water Bodies within the central site

A number of water bodies were encountered across the development during a site walkover. Most of the water bodies appear to be manmade (or historically occurring) depressions in the topography within the farming areas to aid in drainage, although these do not appear to have any positive outfalls. The water bodies will be assessed as part of the scoping in terms of amenity, ecology and drainage. Images of two of the site ponds are shown below:



Photographs of two central ponds

2.3 Water Bodies associated with Bradley Gorse

A number of water bodies were encountered in and around Bradley Gorse (dense woodland to the south east of the development site). These watercourses appear to be part of the natural drainage system which eventually connects to Bradley Brook.



Photographs showing water bodies in and around Bradley Gorse

2.4 Site Outfalls

Three site outfalls were identified in which surface water flows are disposed of offsite.

To the north east, a ditch was observed in which flows were being received from a piped connection in a direction originating onsite, source unknown. The photograph below shows this connection. The ditch flows to the north boundary prior to being culverted beneath the B5356. An additional connection appears to be discharging foul waste into the watercourse, from the direction of the adjacent property.



Photograph showing surface water flow to the ditch (L) and additional connection from adjacent property appears to discharge waste to head of the ditch (R)

A second ditch was also located on the northern section of the western boundary of the site bordering the industrial area behind. A piped connection was noted into the ditch however no flow was observed. It is assumed this is then culverted across the highway (B5356) to the north although this could not be identified. Photographs shown below:



Photographs showing incoming connection to ditch (L) and ditch appearing to fall towards the northern boundary (R) but no culvert/outlet could be identified

The third site outfall is present at the south-east corner of the site where Bradley Brook meets the M6. The Brook is culverted beneath the highway (M6) by a large diameter sewer which discharges flows offsite to the east. At the culvert location pipework was observed discharging into the watercourse. It is assumed these convey flows both from the highway drainage above (larger diameter from the south) and from the water bodies within Bradley Gorse (small diameter from the north). A photo of the outfall can be seen below.



Photograph showing incoming connections to Bradley Brook

2.5 Existing Site Drainage

As part of the site walkover, existing drainage networks were investigated to determine the site discharge strategy for the existing properties on site.

It was observed and informed that the foul drainage to the farm, cottages and hall, all drain to nearby septic tanks which are routinely emptied by an external party.

The surface water drainage however has not been identified to date due to access restrictions. At this time it is assumed that all storm drainage is contained within the site and infiltrated through soakaways or natural pathways with eventual discharge to one of the site outfalls. Further investigation is required to verify existing routing and strategy when access is possible although due to the isolated nature of the properties this should have no impact on the new strategy for the development.

3.0

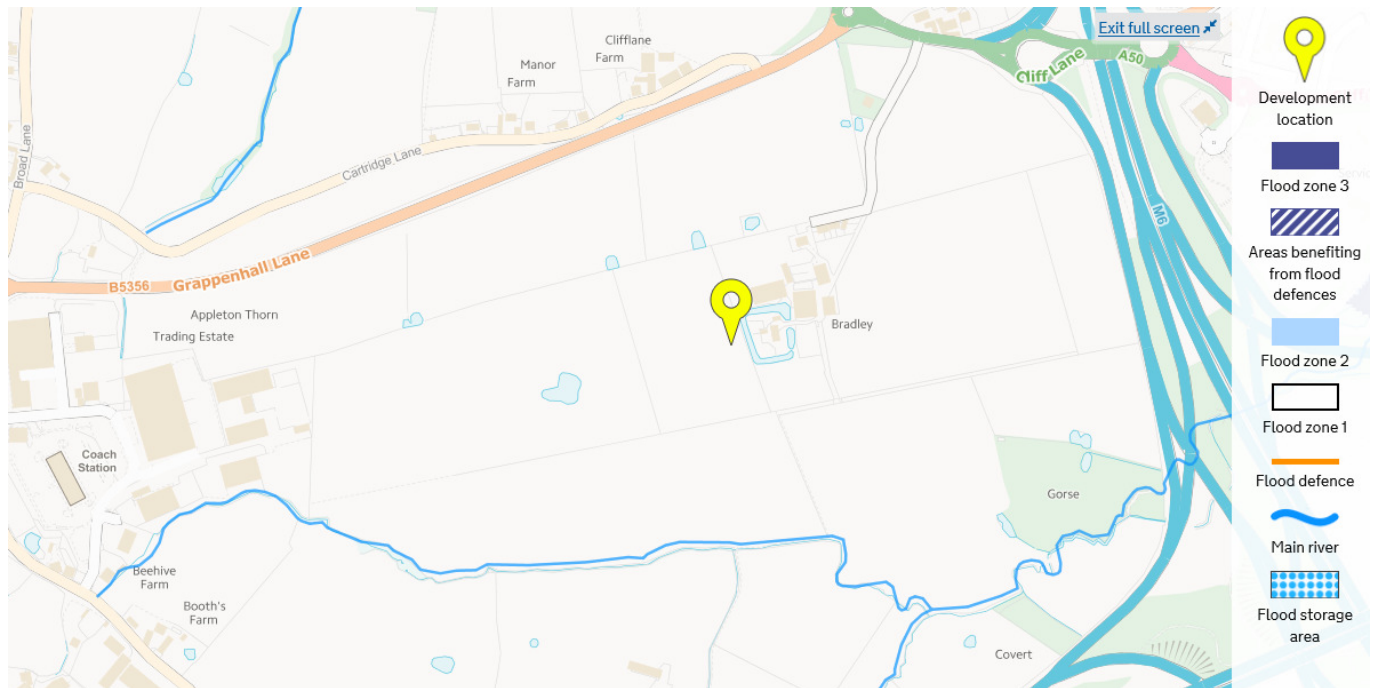
Records

3.0 Records

As part of the baseline assessment, records were requested from relevant local and statutory authorities.

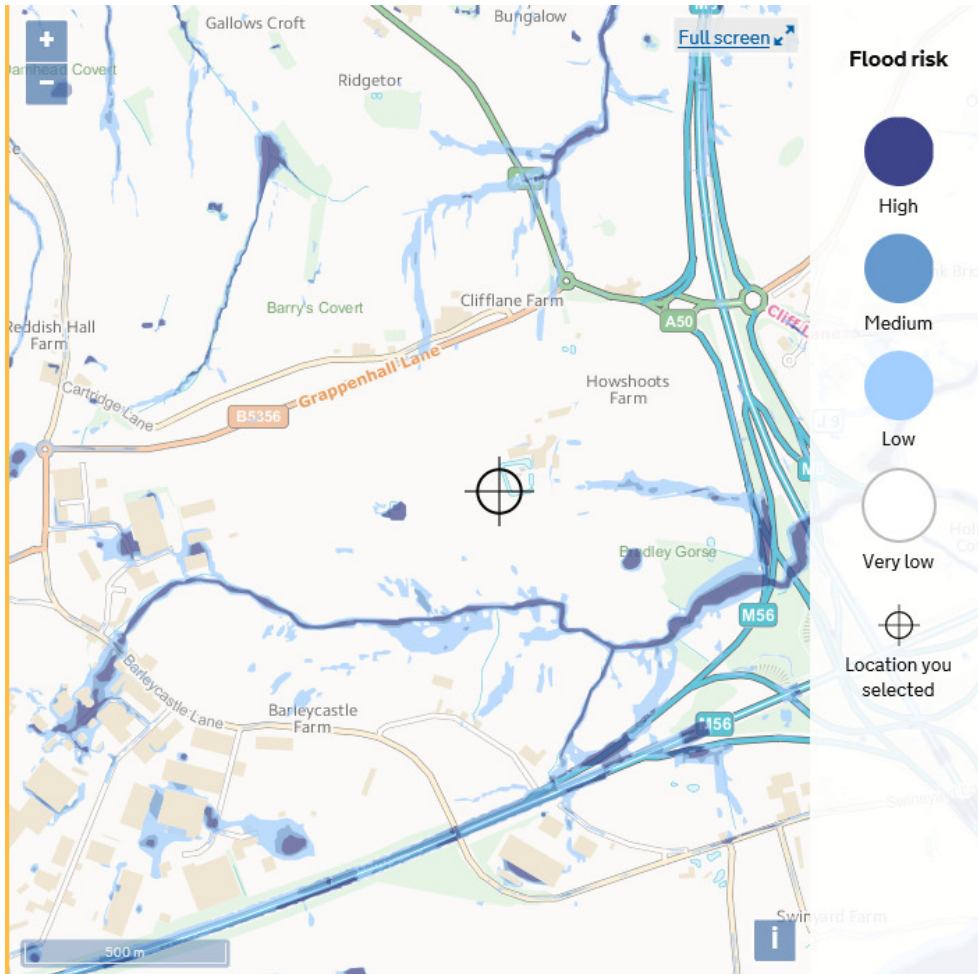
3.1 Environment Agency

The EA Flood Map shows that the site resides wholly within Flood Zone 1 land as shown from the map below.



Environment Agency Flood Map showing the site in Flood Zone 1

The EA Flood Risk from Surface Water map shows that there is high risk of overland flow paths originating within the site development although no flow paths originate offsite.



EA Flood Map showing site originated flow paths

3.2 United Utilities

Sewer records were requested from United Utilities. Combined and storm sewers serving the industrial area to the south west of the development site are identified on the plans. There are no records of any sewers within the site or to the immediate north, east or south of the boundaries. United Utilities did identify the combined sewer network to the east of the M6 as a potential interest to the site for waste discharge and the extract is shown below.



Extract of UU Map showing combined sewers to the east of the M6

4.0

Statutory Consultee Liaison & Baseline Criteria

4.0 Statutory Consultee Liaison & Baseline Criteria

The Lead Local Flood Authority (LLFA of Warrington Borough Council), the Environment Agency and United Utilities were contacted to ascertain baseline assessment criteria and impact criteria for the proposed development. A copy of received relevant correspondence can be seen in Appendix A.

4.1 LLFA

Warrington Borough Council's flood team have provided pre-application advice regarding surface water discharge for the site. 5l/s/ha (or greenfield run off rate) is permitted to be discharged from the development to the book in accordance with the hierarchy outlined by United Utilities. Further coordination will be required with the LLFA to agree surface water design principles to be adopted across the site.

4.2 Environment Agency

The Environment Agency have provided outline pre-application advice regarding the site, surface water and watercourses located at the development.

The EA designates Bradley Brook and its tributary as a main river. Any works that are to occur within 8m of the watercourse (top of bank) or its structures will require flood defence consent to commence any activity.

The proposed development is to ensure that access to and along the banks of the watercourse is provided and maintained. In accordance with the permit requirement, a minimum of an 8m buffer will should be maintained for clear access.

Foul discharge possibilities are currently being discussed with the EA.

Additionally, the EA stated that part of the south-east corner of the site sits within the remit of Cheshire East Council and confirmation is required from the project management team on potential liaison or crossover prior to engagement.

4.3 United Utilities

United Utilities have provided pre-development response outlining available connection locations and discharge criteria for the site.

Foul

A connection unrestricted is available to utilise to UU sewers in Old Cherry Lane, which is located on the adjacent side of the M6, North of the service station. A connection from the development here would require major offsite infrastructure works to facilitate crossing the highway. Other possible locations and strategies are currently being pursued in conjunction with UU and the EA.

Surface Water

United Utilities have outlined the hierarchy for discharging surface water flows from the site. Infiltration in the first instance is preferred and site investigation studies will be required to identify infiltration potential across the development site. In the event that infiltration is deemed impractical, then discharge to Bradley Brook (or its tributary) will be acceptable in accordance with LLFA design criteria.

5.0 Appendix A – Correspondence

Appendix A – Correspondence

United Utilities

From: Lunt, John [mailto:John.Lunt@uuplc.co.uk]
Sent: 05 September 2017 13:41
To: French, Andrew <a.french@cundall.com>
Cc: Wastewater Developer Services <WastewaterDeveloperServices@uuplc.co.uk>
Subject: (UU Ref: PDE 4200018154) Warrington Interchange, Grappenhall Lane

Hi Andrew,

We have carried out an assessment of your application which is based on the information provided; this wastewater pre development advice will be valid for 12 months.

Foul

The foul water flows emanating from this site will be allowed to drain in to the 300mm public foul water sewerage system located within Old Cherry Lane.

Surface Water

The surface water flows generated from the site should drain to soak away wherever practicable and or via direct means with the adjacent watercourse. Discharge rates and consents must be discussed and agreed with all interested parties.

Connection Application

Although we may discuss and agree discharge points & rates in principle, please be aware that you will have to apply for a formal sewer connection. This is so that we can assess the method of construction, Health & Safety requirements and to ultimately inspect the connection when it is made. Details of the application process and the form itself can be obtained from our website by following the link below

<http://www.unitedutilities.com/connecting-public-sewer.aspx>

Please be aware that on site drainage must be designed in accordance with Building Regulations, National Planning Policy, and local flood authority guidelines, we would recommend that you speak and make suitable agreements with the relevant statutory bodies.

Please note, if you intend to put forward your wastewater assets for adoption by United Utilities, the proposed detail design will be subject to a technical appraisal by an Adoption Engineer as we need to be sure that the proposals meets the requirements of Sewers for adoption and United Utilities Asset Standards. The proposed design should give consideration to long term operability and give United Utilities a cost effective proposal for the life of the assets. Therefore, further to this enquiry should you wish to progress a Section 104 agreement, we strongly recommend that no construction commences until the detailed drainage design, submitted as part of the Section 104 agreement, has been assessed and accepted in writing by United Utilities. Any works carried out prior to the technical assessment being approved is done entirely at the developers own risk and could be subject to change.

Regards,

John

Environment Agency

Cundall
Partnership House
Gosford
Regent Farm Road
Newcastle upon Tyne
NE3 3AF

Our ref: SO/2017/117420/01-L01
Your ref: 170803/RD12

Date: 21 August 2017

FAO Lee French

Dear Mr French

PROPOSED DEVELOPMENT
WARRINGTON INTERCHANGE, BRADLEY BROOK

Thank you for your preliminary request which was received in this office 18th August 2017.

Environment Agency comments

The watercourse that flows along the southern boundary of the site is Bradley Brook Tributary, which is designated "main river". The watercourse that crosses the south-eastern part of the site is Bradley Brook, which is also designated "main river".

The Environment Agency has discretionary powers, within the Water Resources Act 1991, to carry out works to these watercourses for which access is required to and along the banks of the watercourses.

The layout for the proposed development is to ensure that access is provided to and along the banks of these watercourses.

Under the Environmental Permitting (England and Wales) Regulations 2016, a permit may be required from the Environment Agency for any proposed works or structures, in, under, over or within eight metres of the top of the banks of these watercourses. This was formerly called a Flood Defence Consent. Some activities are also now excluded or exempt. A permit is separate to and in addition to any planning permission granted. Further details and guidance are available on the GOV.UK website: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

A permit is unlikely to be granted for any proposals within the 8 metres wide strip that would affect access, to and along these watercourses.

Environment Agency
Richard Fairclough House Knutsford Road, Warrington, WA4 1HT.
Customer services line: 03708 506 506
www.gov.uk/environment-agency

The Lead Local Flood Authority, which for the majority of this site is Warrington Borough Council (with Cheshire East Council who cover a relatively small part of the site in the south-eastern corner), will be able to advise/comment on the discharge of surface water (including storm water) from any proposed development.

Yours sincerely

Mr Stephen Sayce
Sustainable Places Planning Advisor

Direct e-mail stephen.sayce@environment-agency.gov.uk

Lead Local Flood Authority (LLFA)

From: Flood Risk [<mailto:floodrisk@warrington.gov.uk>]

Sent: 04 August 2017 15:14

To: French, Lee <l.french@cundall.com>

Subject: RE: Outline Planning Submission Reqs - LLFA

Hi Lee

If you are intending to discharge the surface water to the main river then greenfield run-off rates would apply to this site which is 5l/s per hectare and the surface water system & attenuation would need to be designed to cope with the different storm events. Below is a link to their guidelines.

http://evidence.environment-agency.gov.uk/FCERM/Libraries/FCERM_Project_Documents/Rainfall_Runoff_Management_for_Developments_-_Revision_E.sflb.ashx

Regards

Colin A Ludden
Asset Design Engineer

Economic Regeneration, Growth & Environment, Warrington Borough Council,
New Town House, Buttermarket Street, Warrington, WA1 2NH

Tel: 01925 442540

Mobile 07740 075778

Email: cludden@warrington.gov.uk

Web: www.warrington.gov.uk

Cundall Johnston & Partners LLP

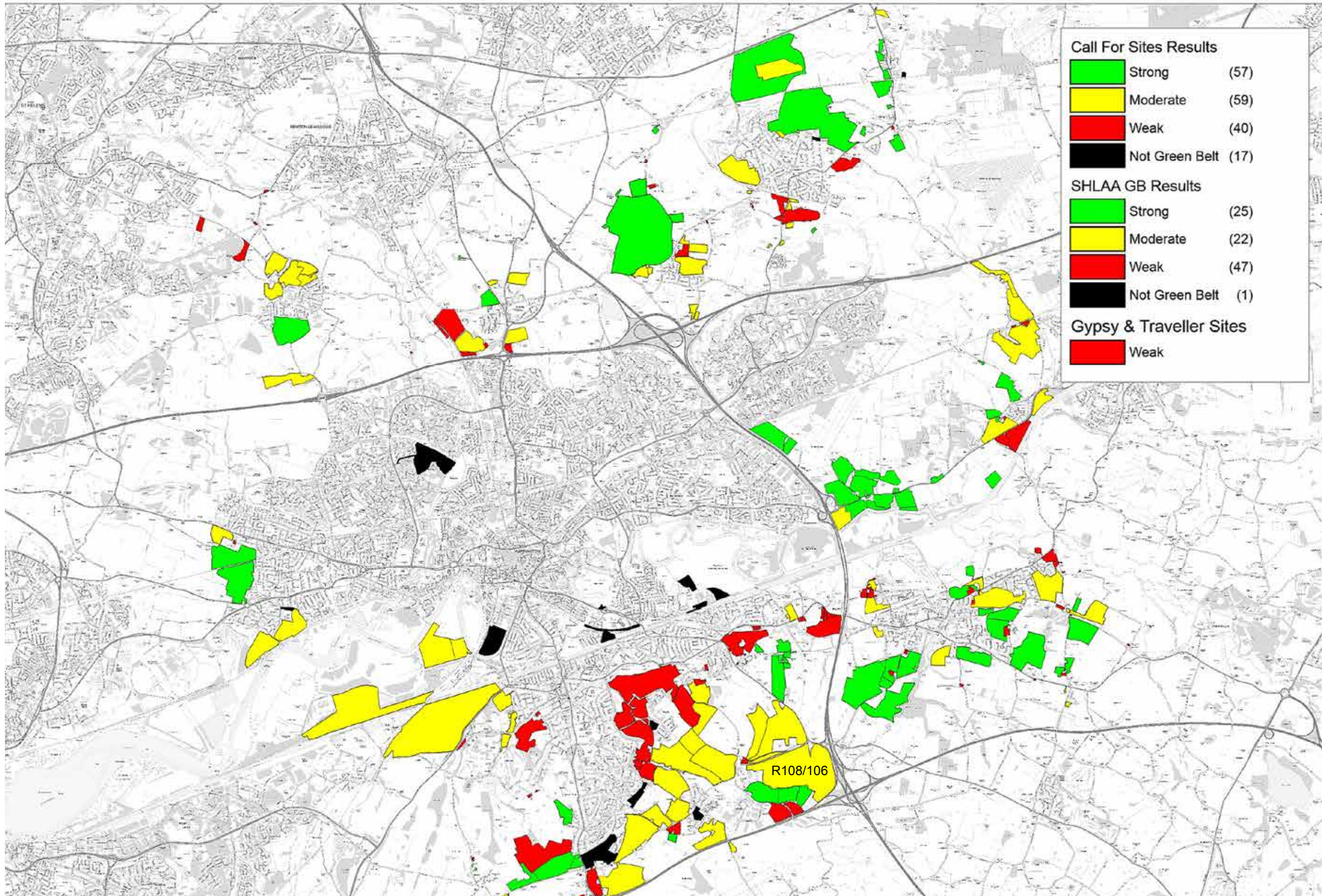
Click down arrow to select CUNDALL Office address

Asia Australia Europe MENA UK and Ireland
www.cundall.com

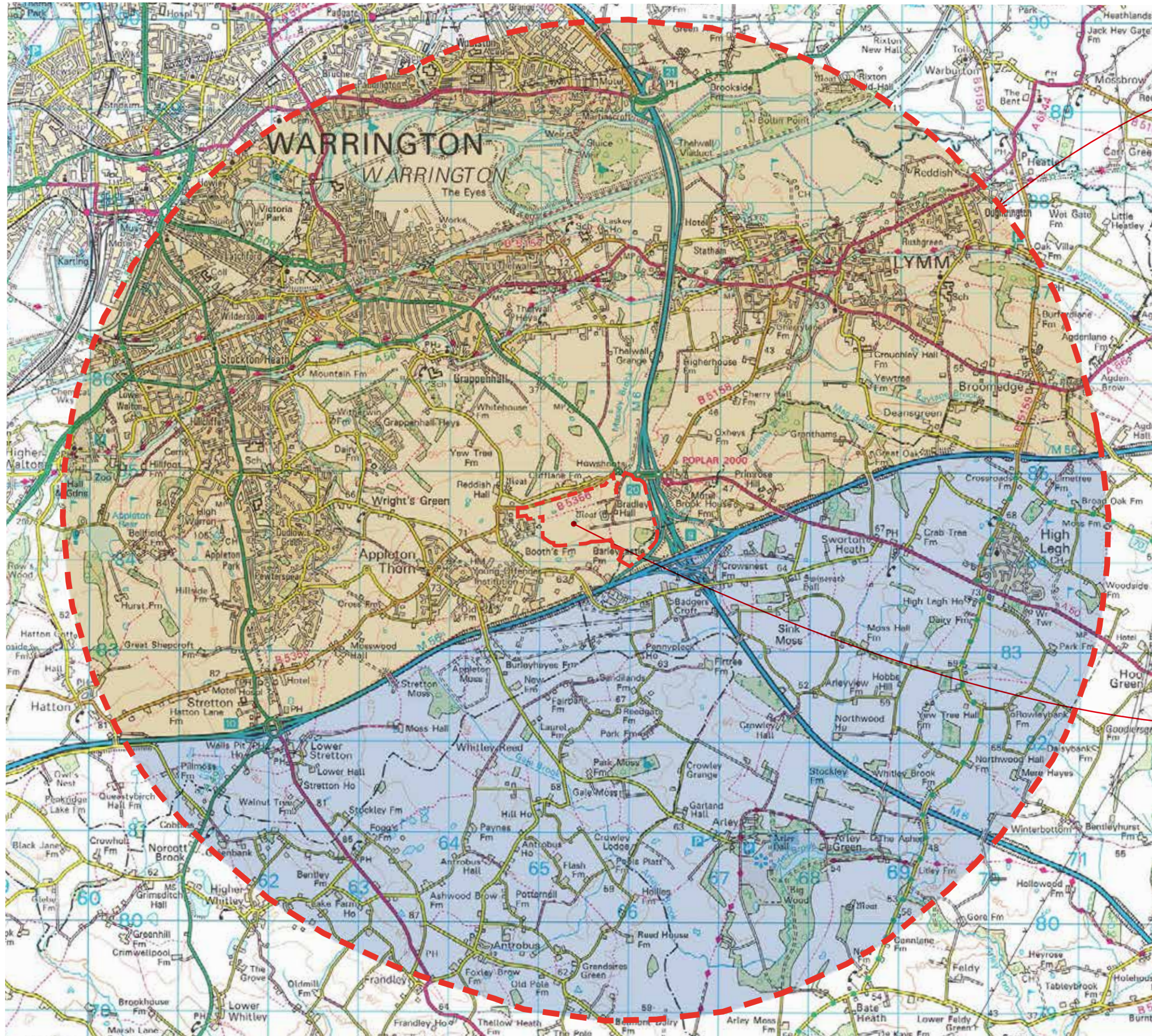


ES Scoping Appendix II – Landscape and Visual Impact:

- LVI - Extract of plan from the Warrington Borough Council Green Belt Assessment 2017
- LV 2-3 - National Character Areas Plan and Local Character Areas Plan
- LV 4-6 - Zone of Theoretical Visibility Plans
- LV 7 - Field Work Zones Plans
- LV 8-26 - Photographs from the Landscape and Visual Baseline Fieldwork
- LV27-33 - Arboricultural Assessment Report and Plans



Warrington Borough Council: Green Belt Assessment 2017



5km radius of study

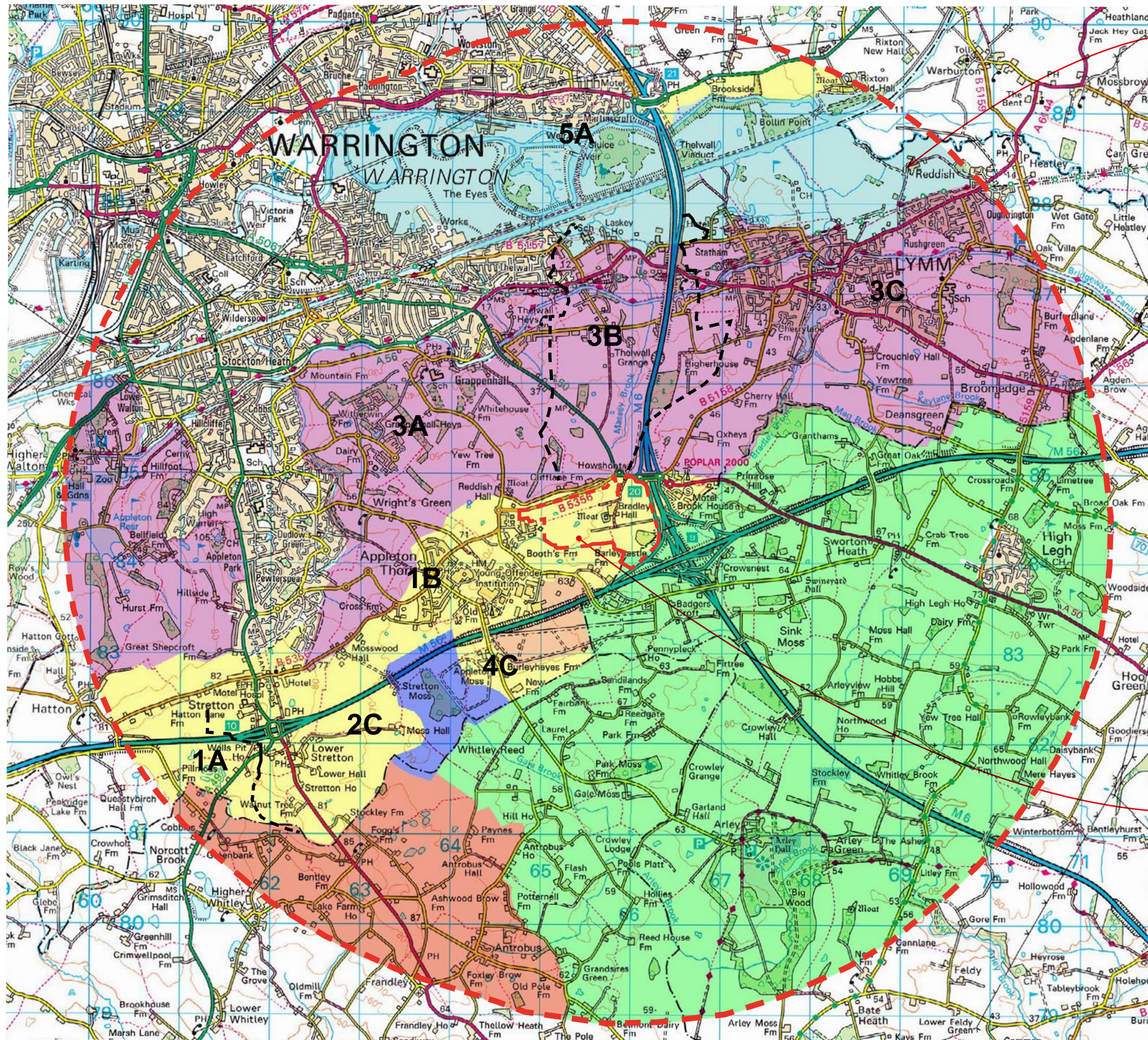
National Landscape Character Area 60-
Mersey Valley



National Landscape Character Area 61-
Shropshire, Cheshire and Staffordshire Plain



SITE LOCATION



5km radius of study

Warrington Borough Council LCA

Undulating Enclosed Farmland

- 1A: Stretton & Hatton
- 1B: Appleton Thorn

Mossland Landscape

- 2C: Stretton & Appleton Moss

Red Sandstone Escarpment

- 3A: Appleton Park & Grappenhall
- 3B: Massey Brook
- 3C: Lymm

Level Areas of Farmland and Former Airfield

- 4C: Former Stretton Airfield

River Flood Plain

- 5A: River Mersey/Bollin

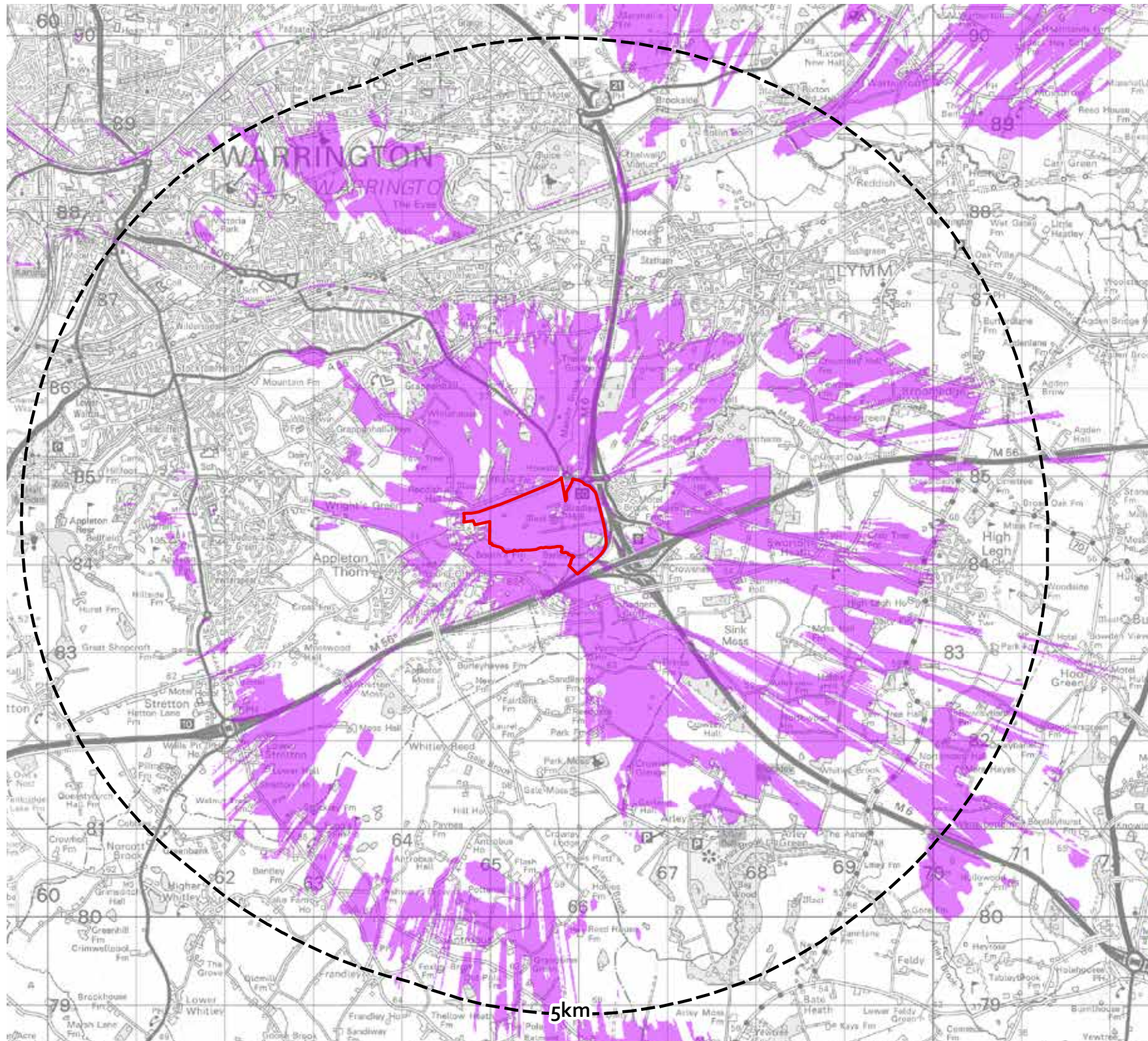
Cheshire East Council LCA

Lower Farms and Woodlands

Rolling Farmland

SITE LOCATION

0 1km



Zone of Theoretical Visibility 14-17m High Units

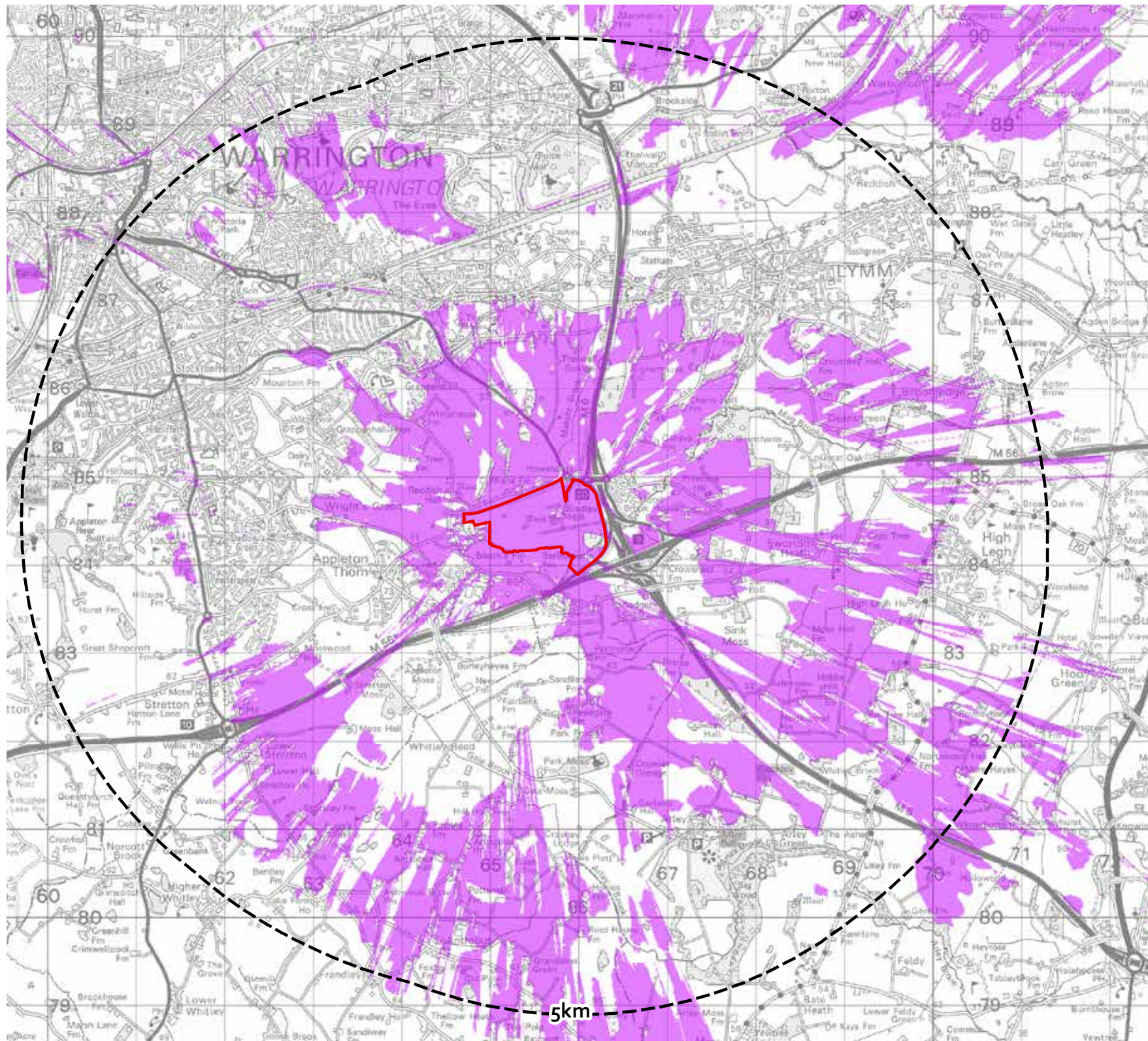
Notes

1. Predicted visibility is defined from an observer eye level of 2m above ground.
2. Created using Ordnance Survey Terrain 5 dataset at 5m grid intervals.
3. The analysis does take into account intervening screening by woodland (nominal 10m height) and buildings (nominal 7.5m height) as shown on OS Vectormap District.
4. Reproduced from 1:50,000 scale mapping by permission of Ordnance Survey.
5. Earth's curvature and light refraction has been included in the calculation.
6. The software used to create this ZTV does not use mathematically approximate methods.

ZTV Run Data

Site centre:	365667, 384480
Resolution:	10m
Calculation:	Single development
Counting method:	1 for each point visible
Visible points:	Ridgeline heights (14m / 17m)

% of 5km study area with theoretical visibility: 23.68%



Zone of Theoretical Visibility 14-22m High Units

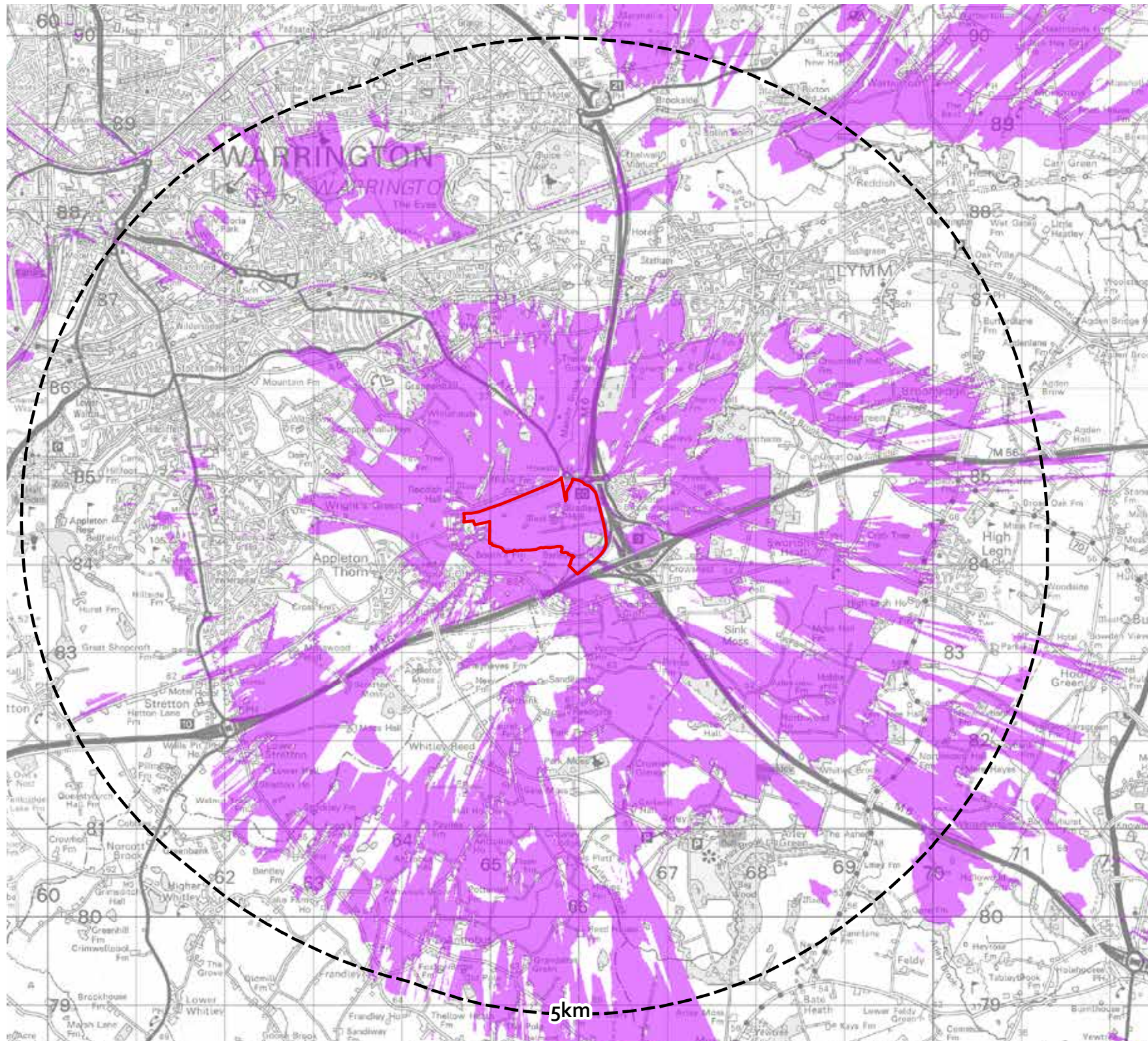
Notes

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2. Created using Ordnance Survey Terrain 5 dataset at 5m grid intervals.
3. The analysis does take into account intervening screening by woodland (nominal 10m height) and buildings (nominal 7.5m height) as shown on OS Vectormap District.
4. Reproduced from 1:50,000 scale mapping by permission of Ordnance Survey.
5. Earth's curvature and light refraction has been included in the calculation.
6. The software used to create this ZTV does not use mathematically approximate methods.

ZTV Run Data

Site centre:	365667, 384480
Resolution:	10m
Calculation:	Single development
Counting method:	1 for each point visible
Visible points:	Ridgeline heights (14m / 17m / 22m)

% of 5km study area with theoretical visibility: 29.66%



Zone of Theoretical Visibility 14-22m Plus 40m High Units

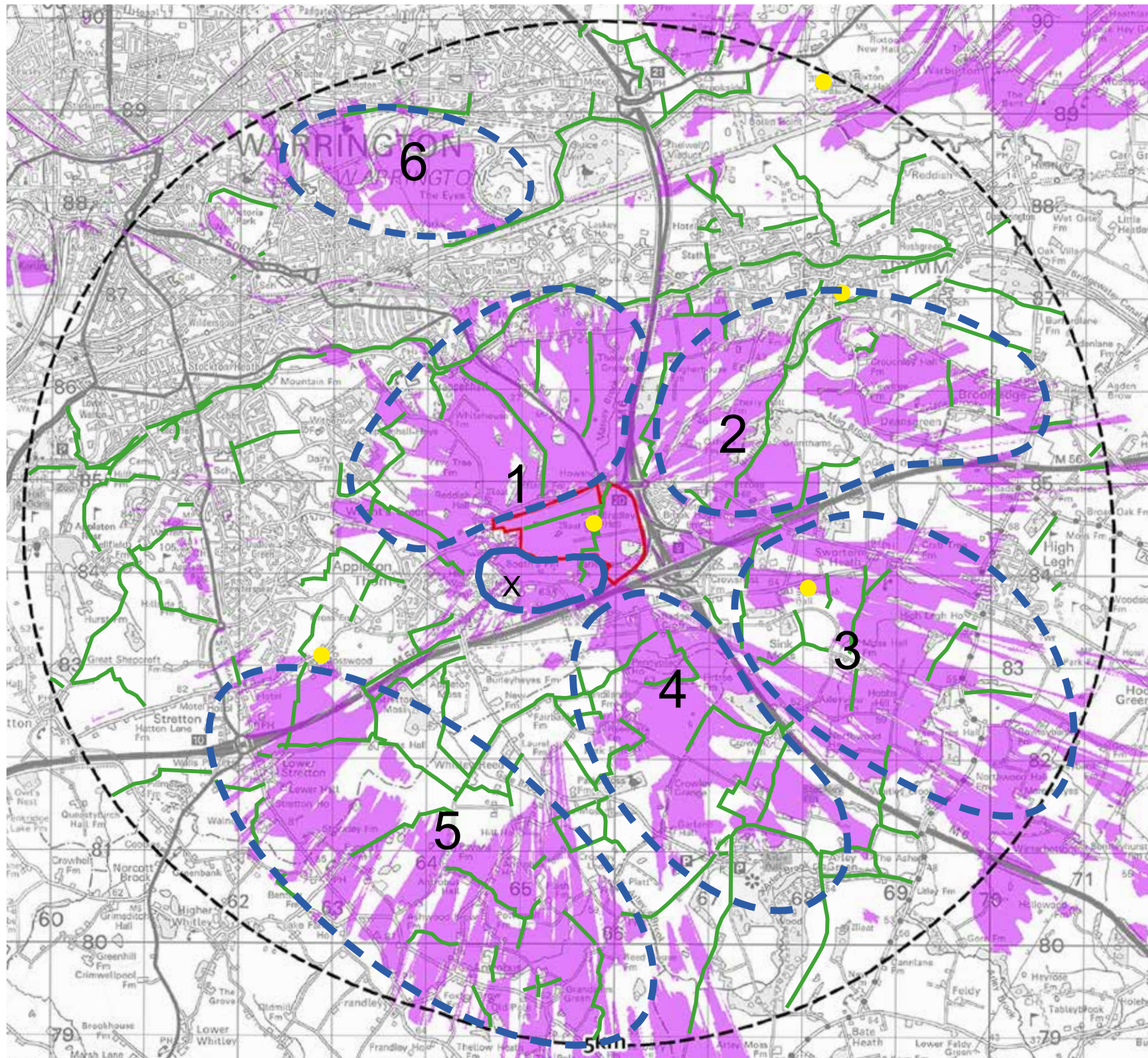
Notes

1. Predicted visibility is defined from an observer eye level of 2m above ground.
2. Created using Ordnance Survey Terrain 5 dataset at 5m grid intervals.
3. The analysis does take into account intervening screening by woodland (nominal 10m height) and buildings (nominal 7.5m height) as shown on OS Vectormap District.
4. Reproduced from 1:50,000 scale mapping by permission of Ordnance Survey.
5. Earth's curvature and light refraction has been included in the calculation.
6. The software used to create this ZTV does not use mathematically approximate methods.

ZTV Run Data

Site centre:	365667, 384480
Resolution:	10m
Calculation:	Single development
Counting method:	1 for each point visible
Visible points:	Ridgeline height (40m)

% of 5km study area with theoretical visibility: 35.29%



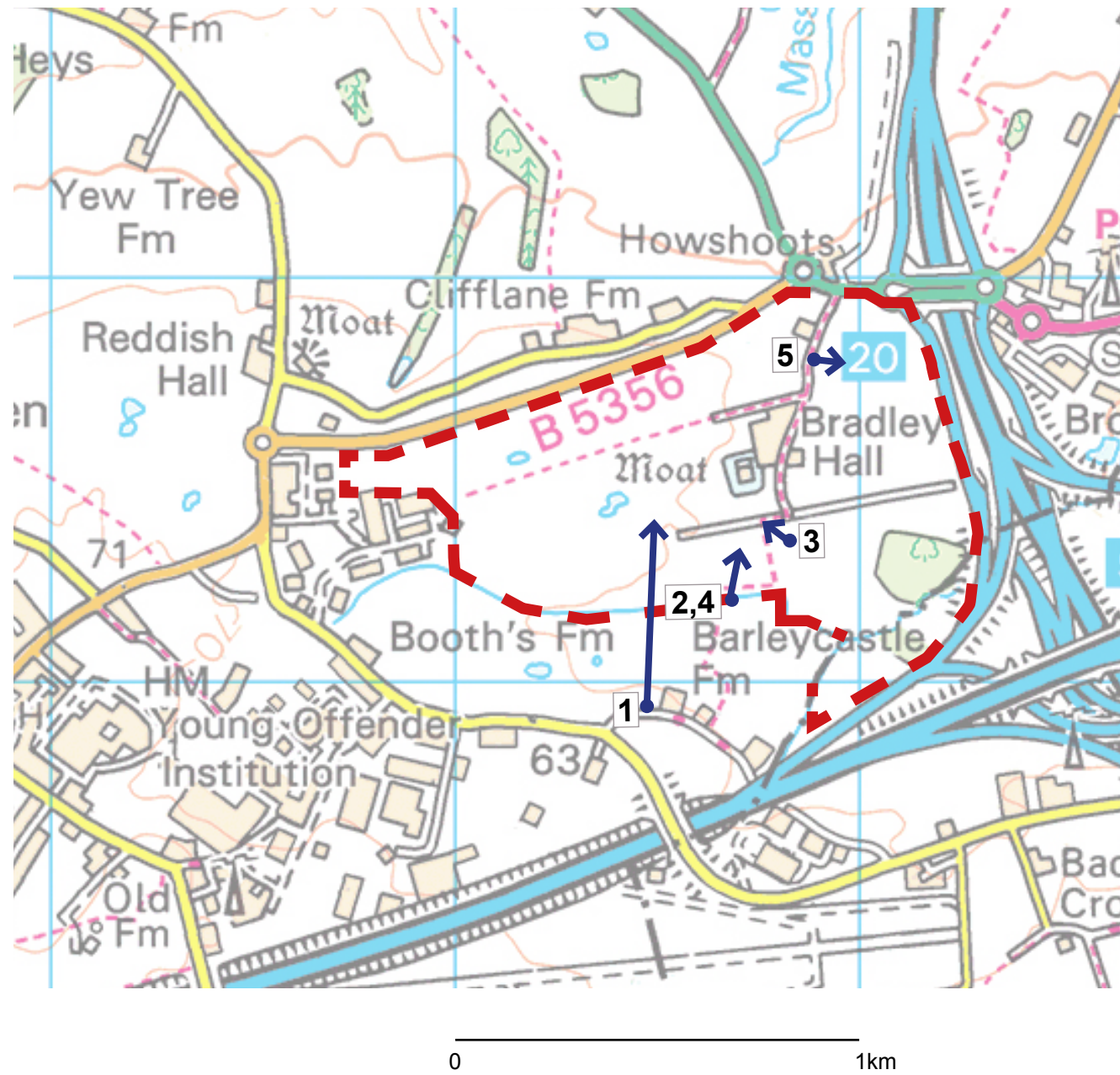
Identified field work zones to confirm typical views of the proposed development identified by the ZTV.

- 1 Grappenhall South (area for allocated SUE)
- 2 M6 East
- 3 M6 South East
- 4 M56 South
- 5 A533 North East
- 6 Manchester Ship Canal

X Area of future employment considered to be lower sensitivity

Field Work Zones 14-22m Plus 40m High Units ZTV

Views from within and adjacent to the site





Picture 1 Barleycastle Lane Distance 0.25km Looking north



Picture 2 Blocked footpath FP00015/23/1



Picture 3 Blocked footpath FP00015/23/1

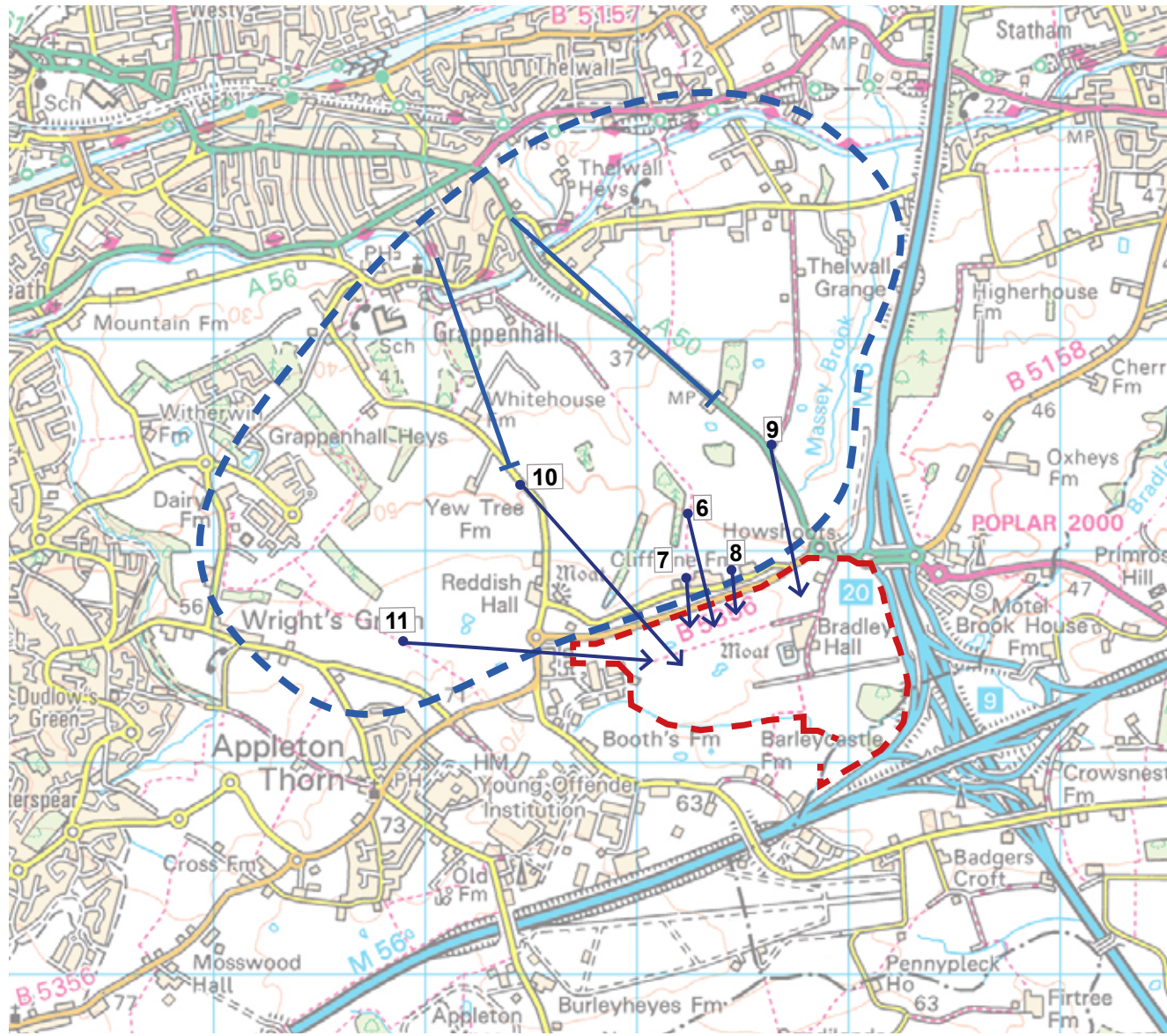


Picture 4 FP00015/23/1 Looking north



Picture 5 FP00015/23/1 Looking east

Zone 1: Grappenhall South



0 1km



Picture 6 FP00129/5/1 Distance 0.2km Looking south



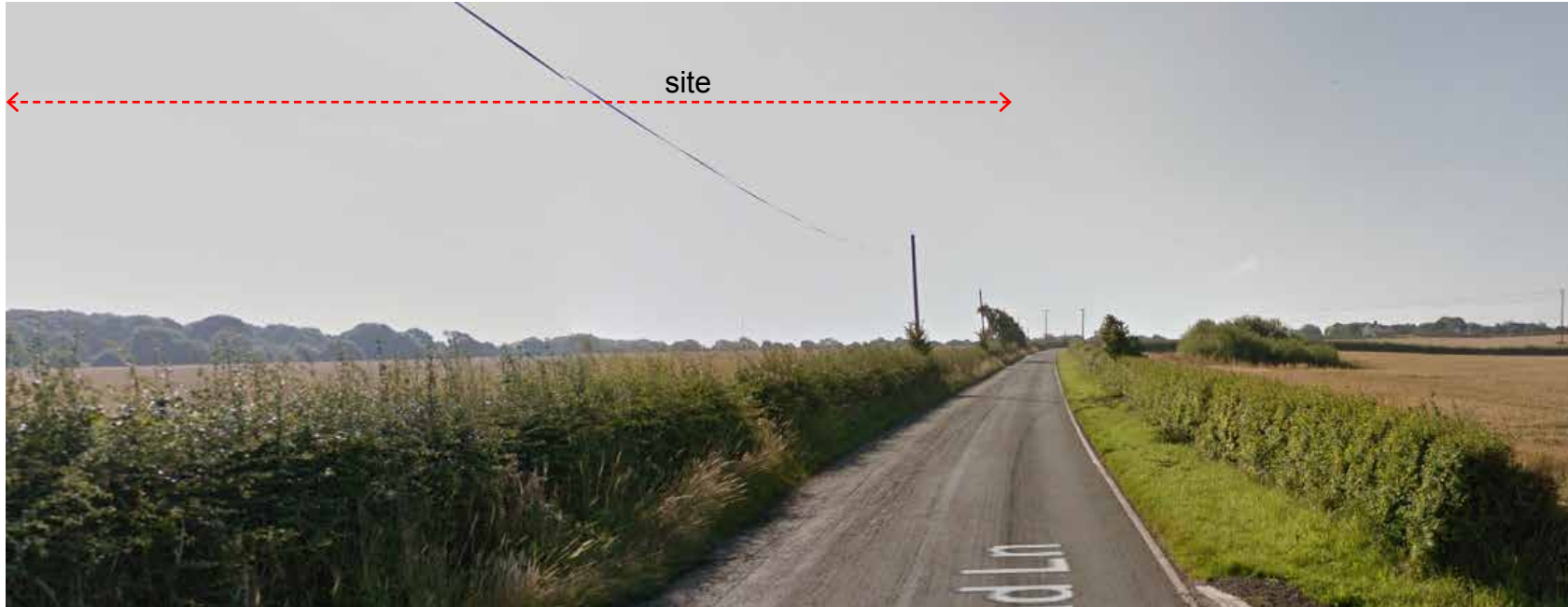
Picture 7 Cartridge Lane Distance 0.1km Looking south



Picture 8 Cartridge Lane Distance 0.02km Looking south

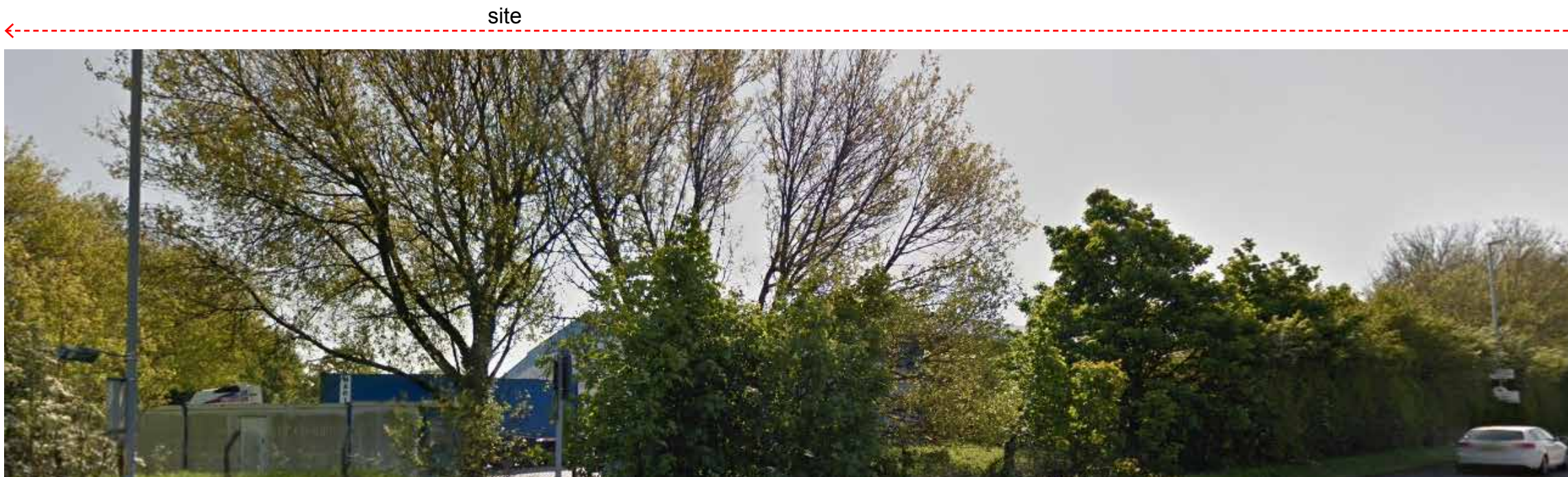


Picture 9 Bridleway 00129/17/1 Distance 0.6km Looking south



Picture 10 Broad Lane Distance 1km Looking south

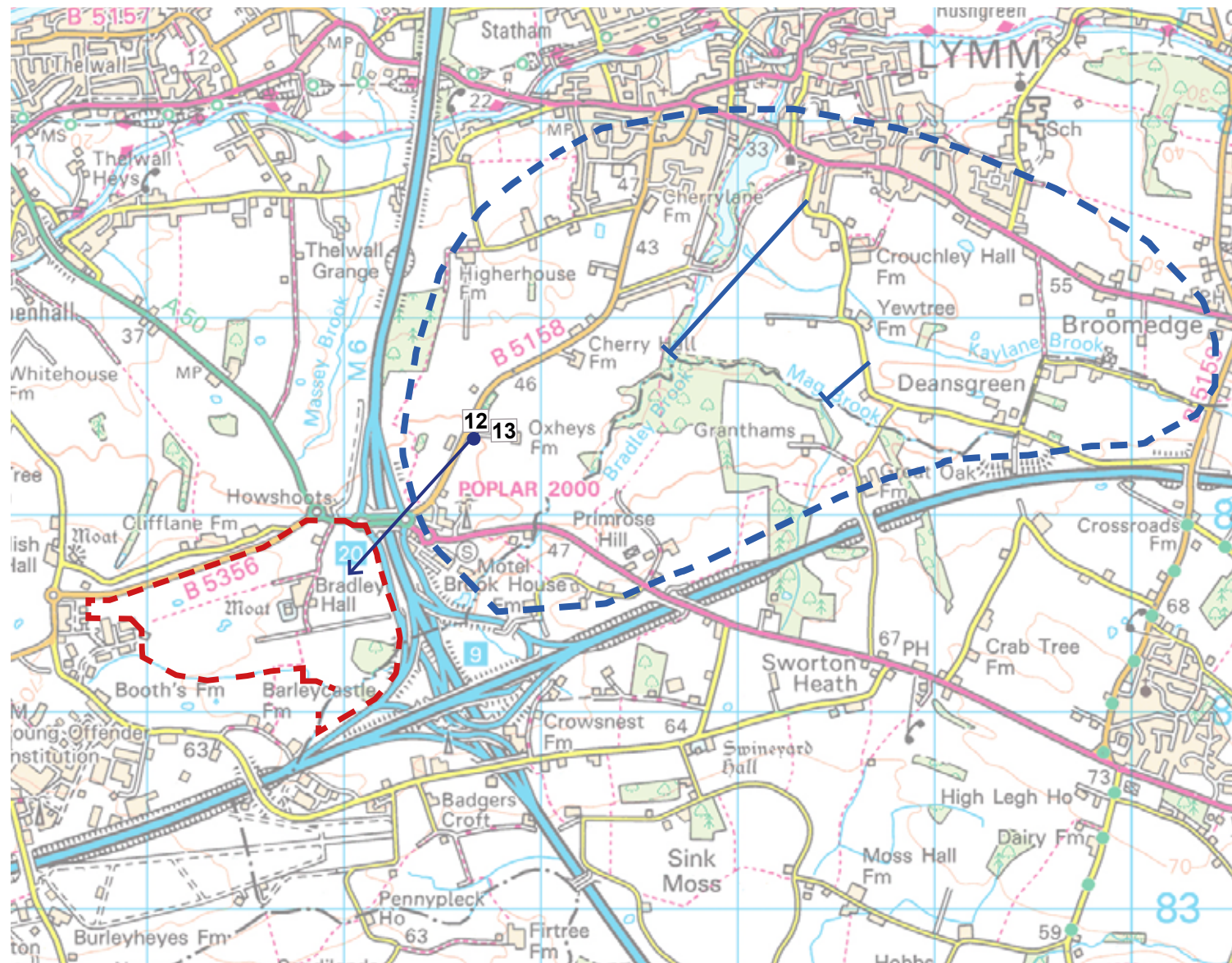
Source Google



Picture 11 Grappenhall Lane Distance 0.22km Looking east towards site over the edge of Barleycastle Industrial Estate

Source Google

Zone 2: M6 East



0 1km

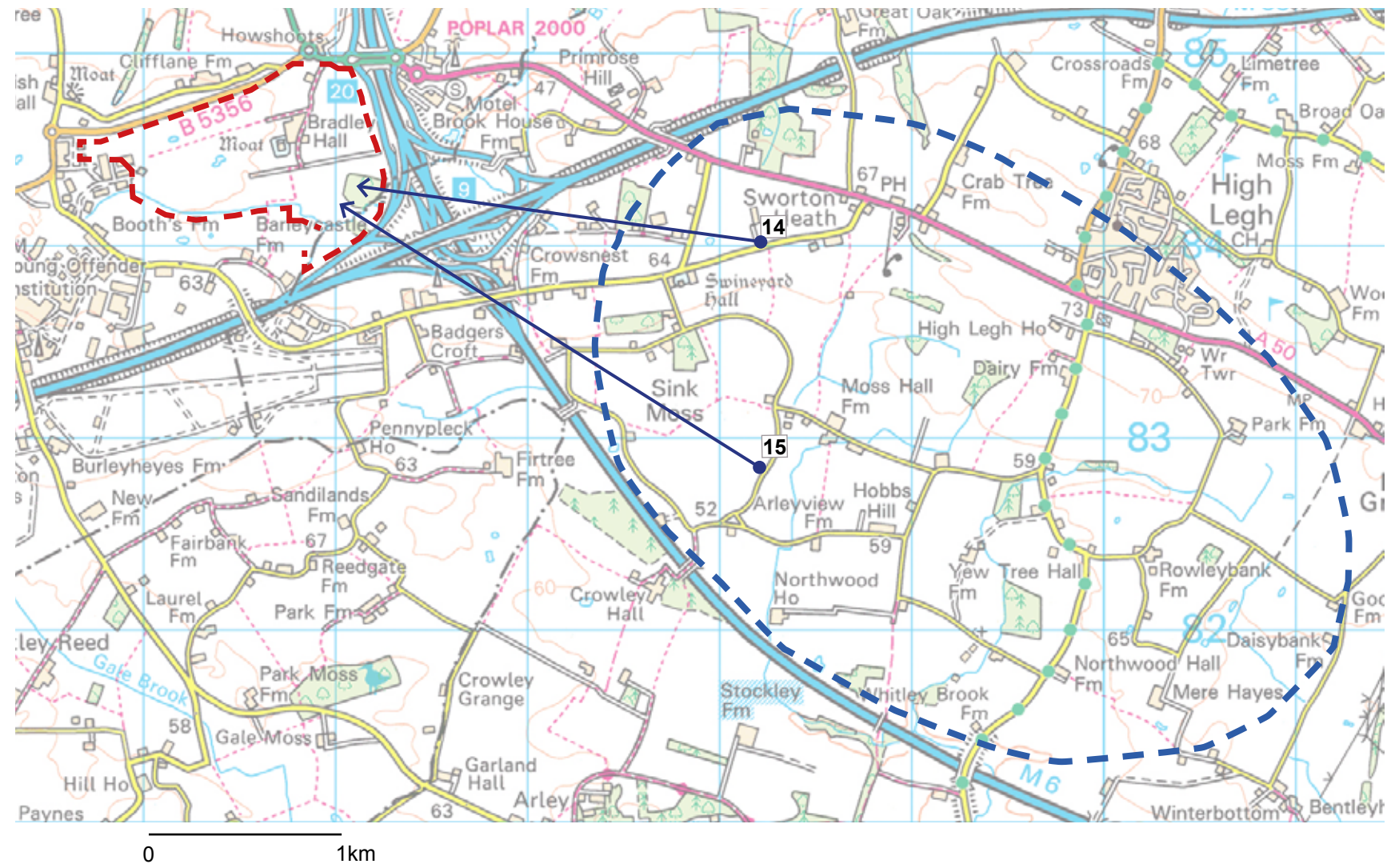


Picture 12 Cherry Lane Distance 0.75km Looking south-west



Picture 13 Cherry Lane Distance 0.75km Source Google

Zone 3: M6 West



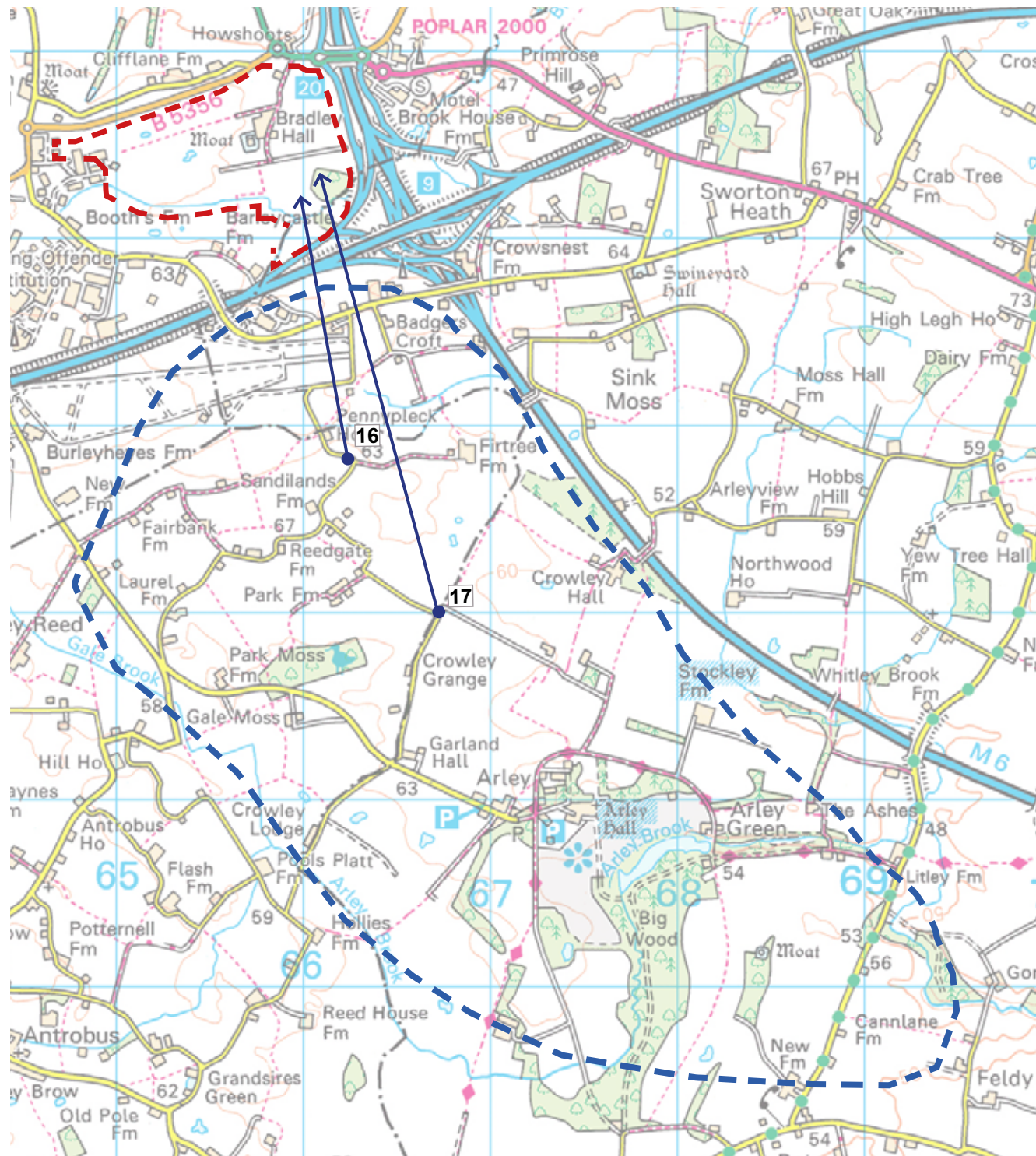


Picture 14 Swineyard Lane Distance 2.1km Looking north-west



Picture 15 Moss Lane Distance 2.6km Looking north-west

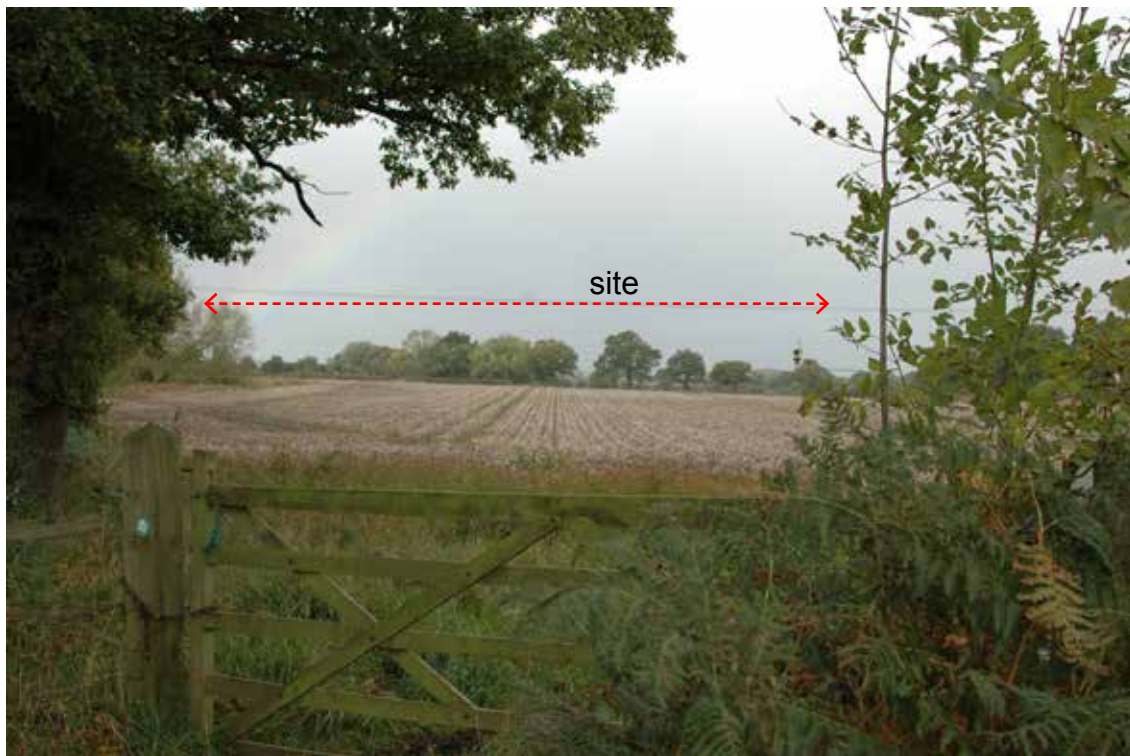
Zone 4: M56 South



0 1km

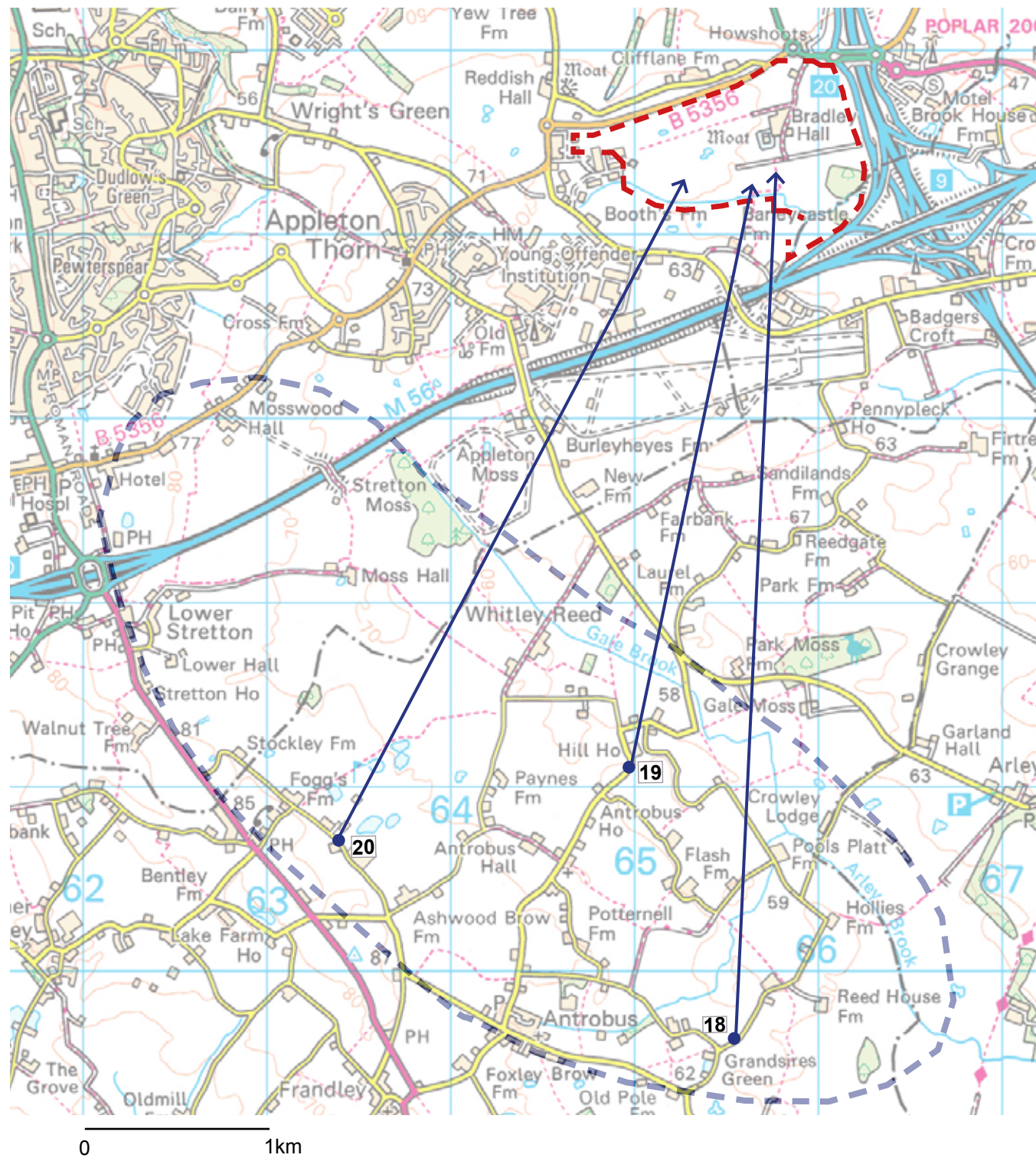


Picture 16 Moss Lane Distance 2.6km Looking north-west



Picture 17 Cadwells Gate Lane Distance 2.3km Looking north-west

Zone 5: A533 North East





Picture 18 Hollins Lane Distance 4.8km Looking north-east

Source Google

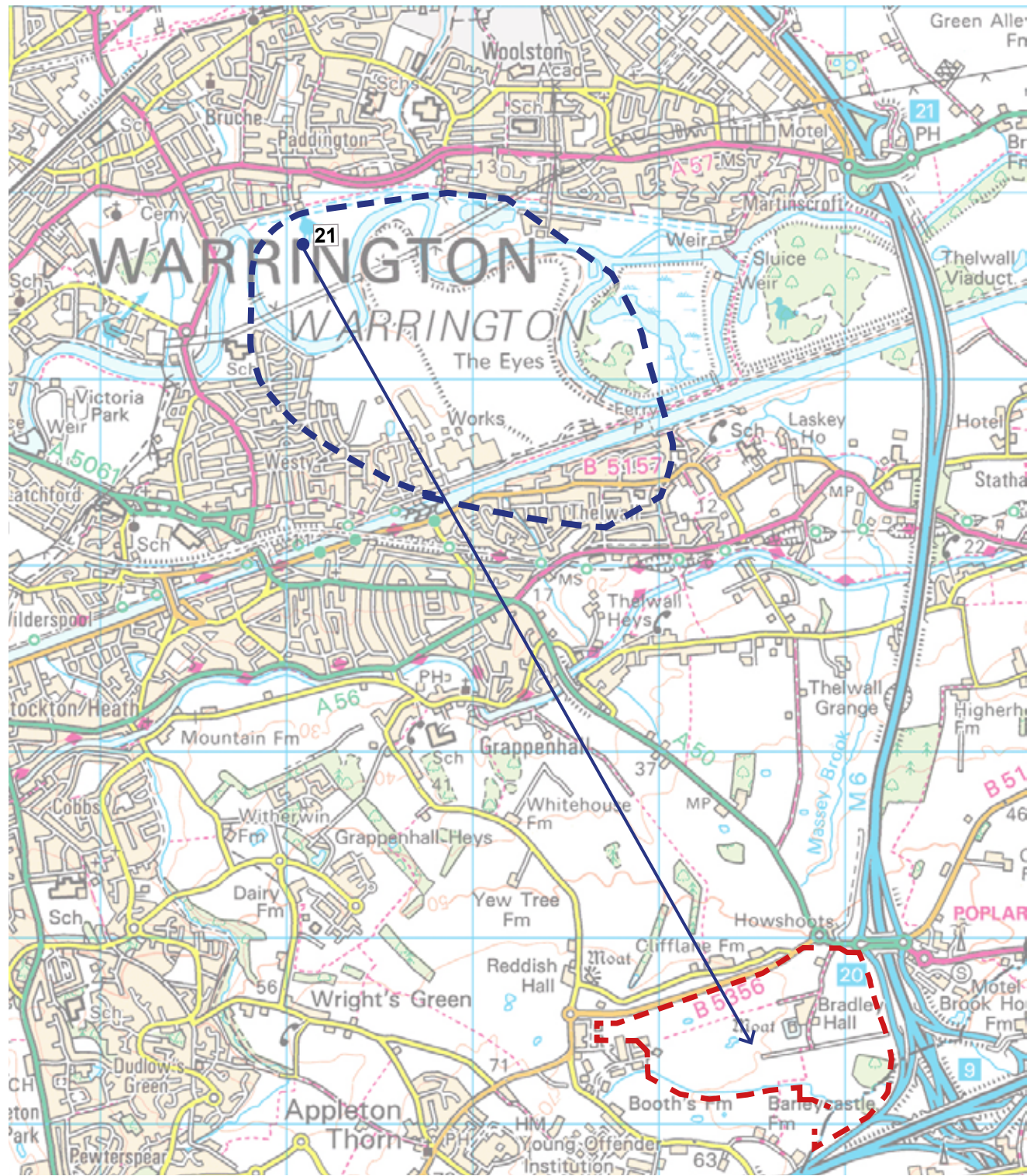


Picture 19 Barber's Lane Distance 3.2km Looking north-east



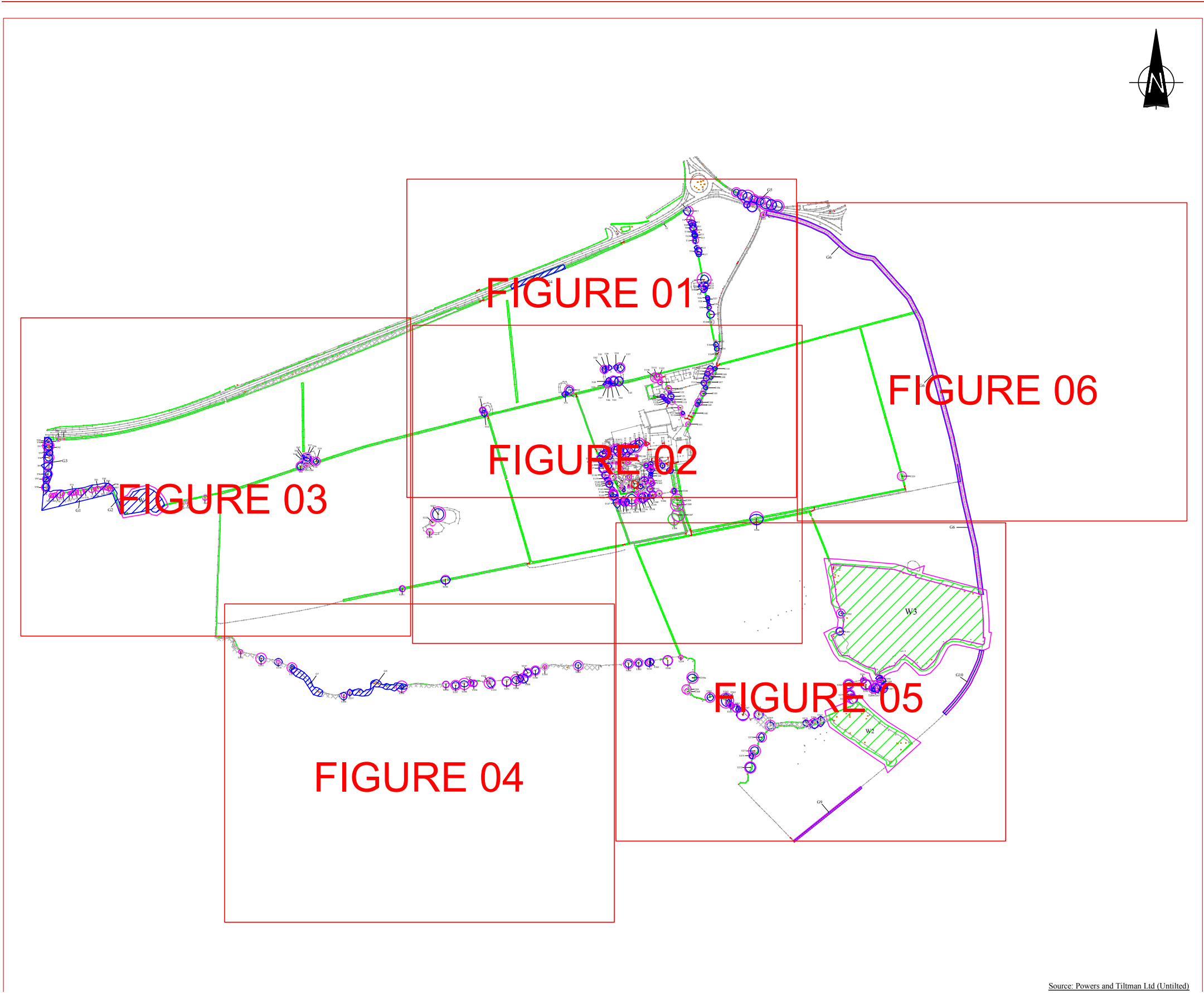
Picture 20 Frogg's Lane Distance 4.1km Looking north-east

Zone 6: River Mersey



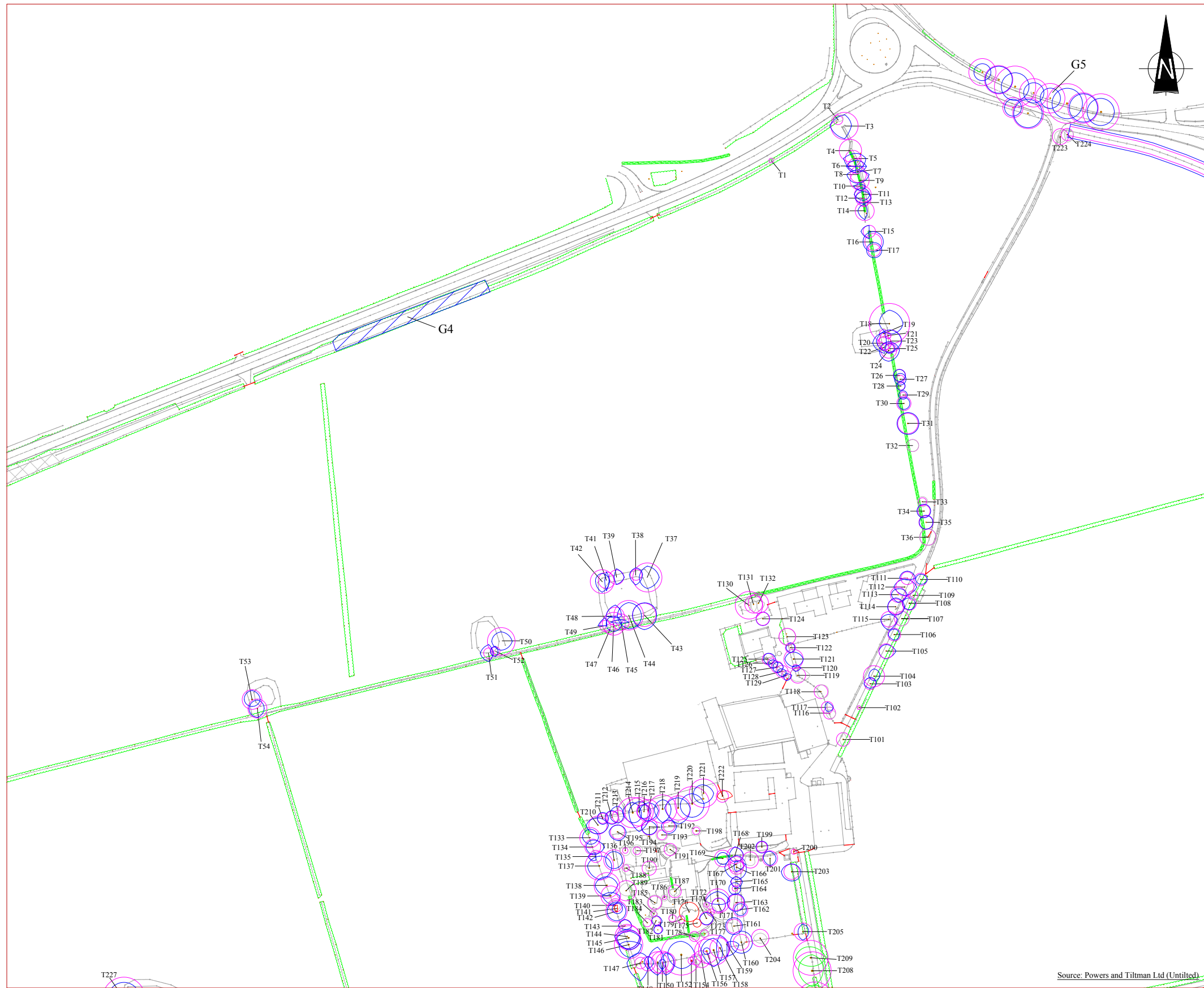


Picture 21 Paddington Meadows Distance 4.5km Looking south-east



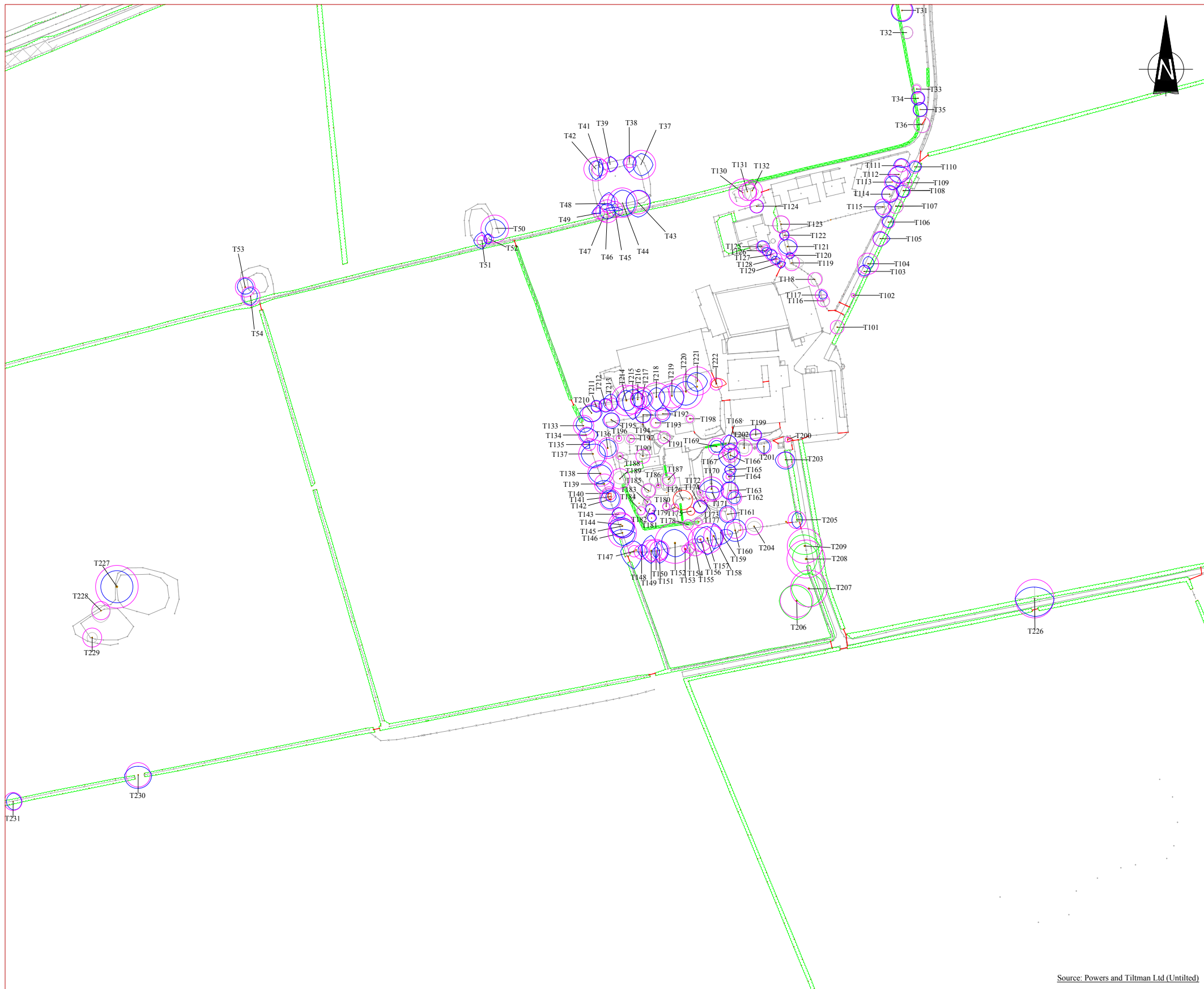
- Key**
- Tree of high landscape value (A2)
 - Tree of moderate landscape value (B2)
 - Tree of low landscape value (C2)
 - Tree of negligible arboricultural merit (R)
 - Tree group of high landscape value (A2)
 - Tree group of moderate landscape value (B2)
 - Shrub masses
 - Root Protection Area (RPA)

Source: Powers and Tiltman Ltd (Untitled)



Key

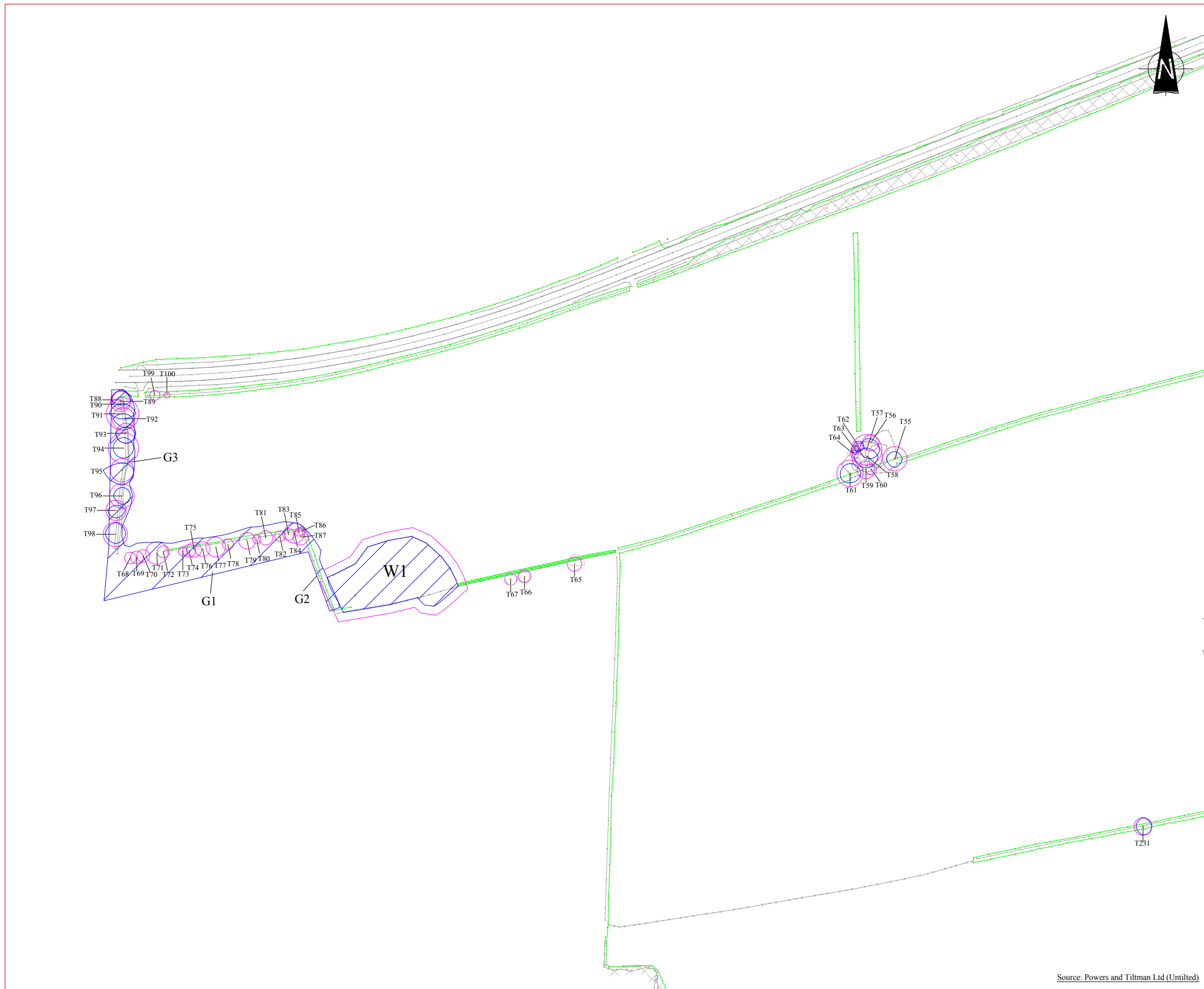
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Key

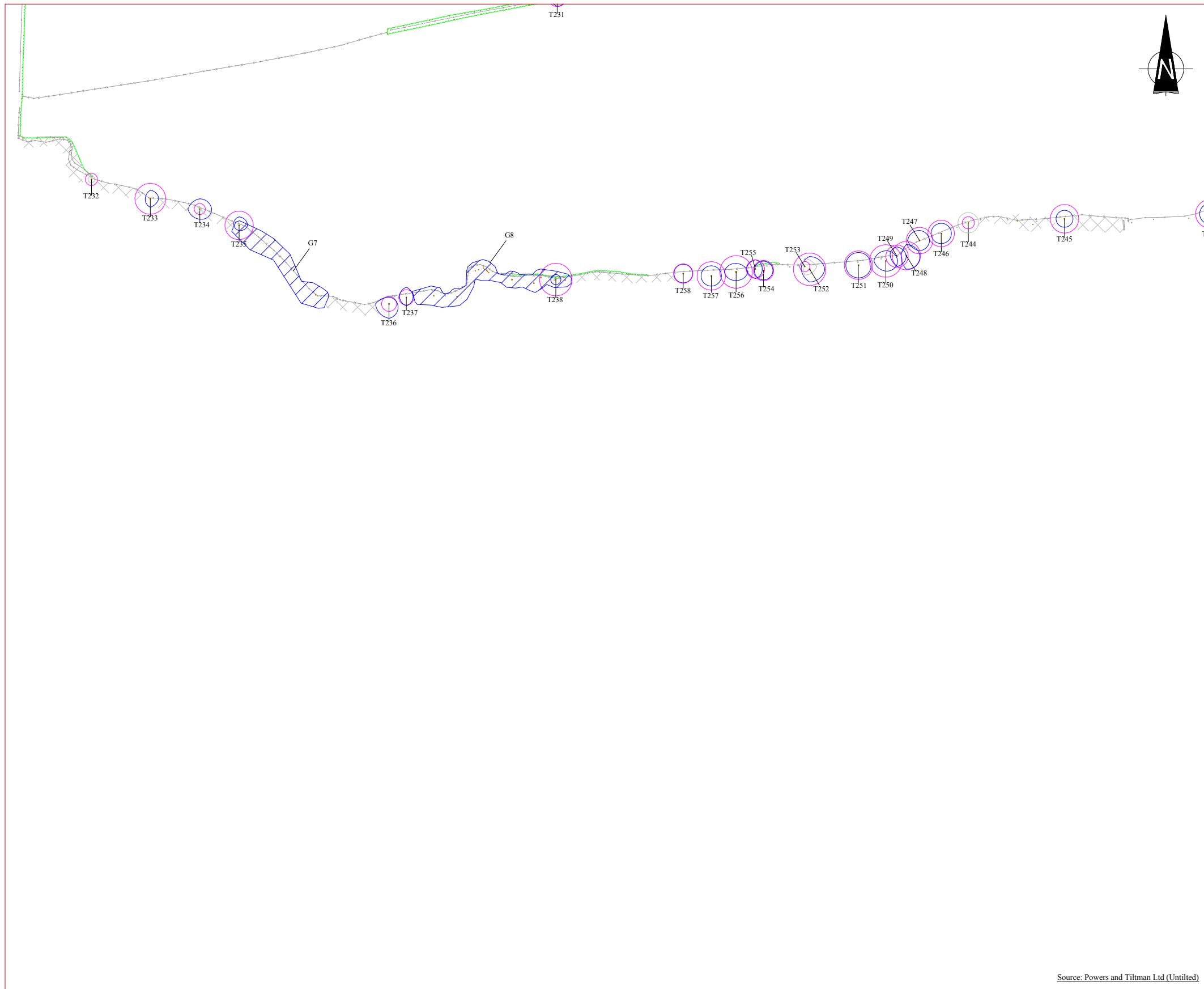
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Source: Powers and Tiltman Ltd (Untitled)











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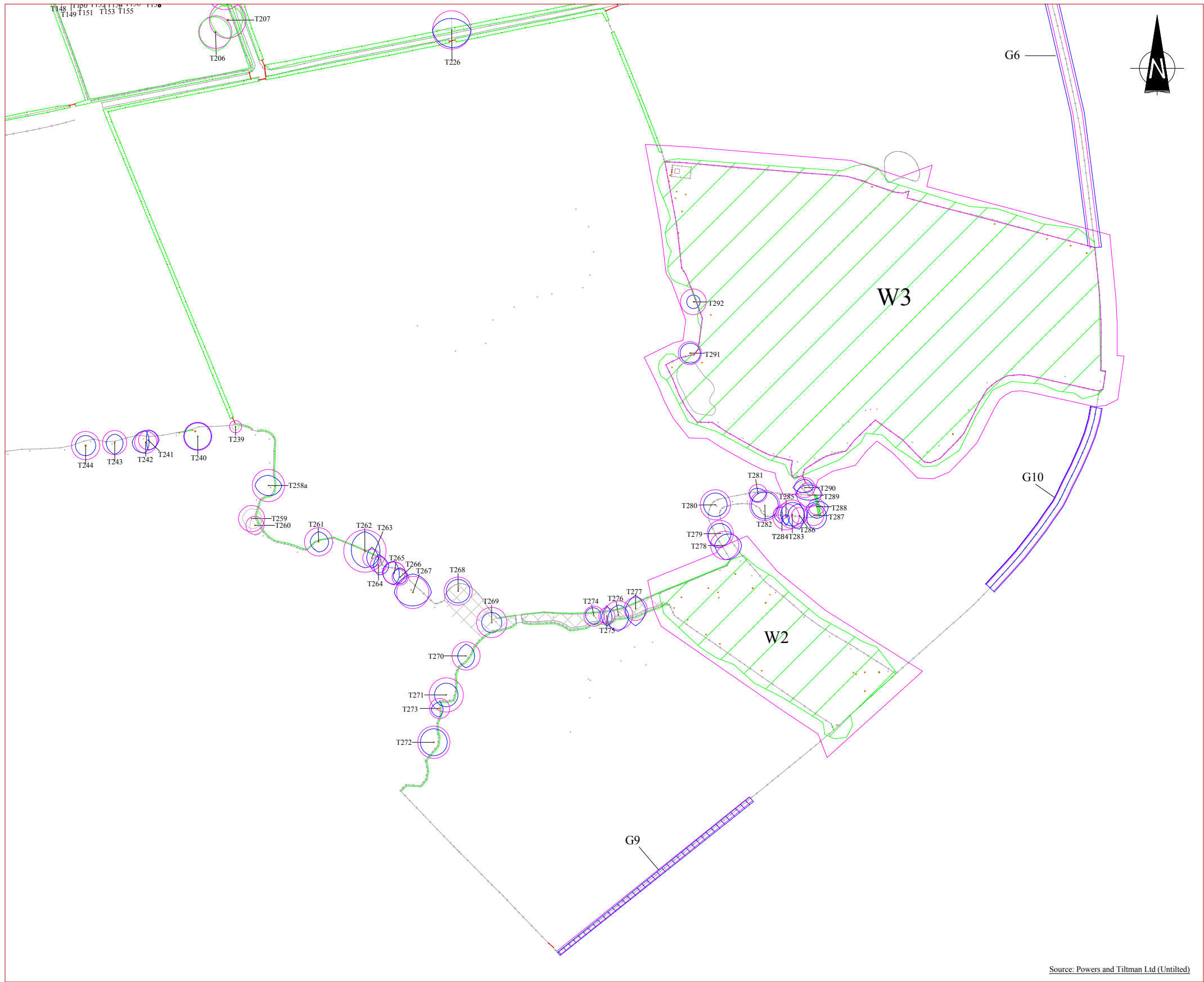
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







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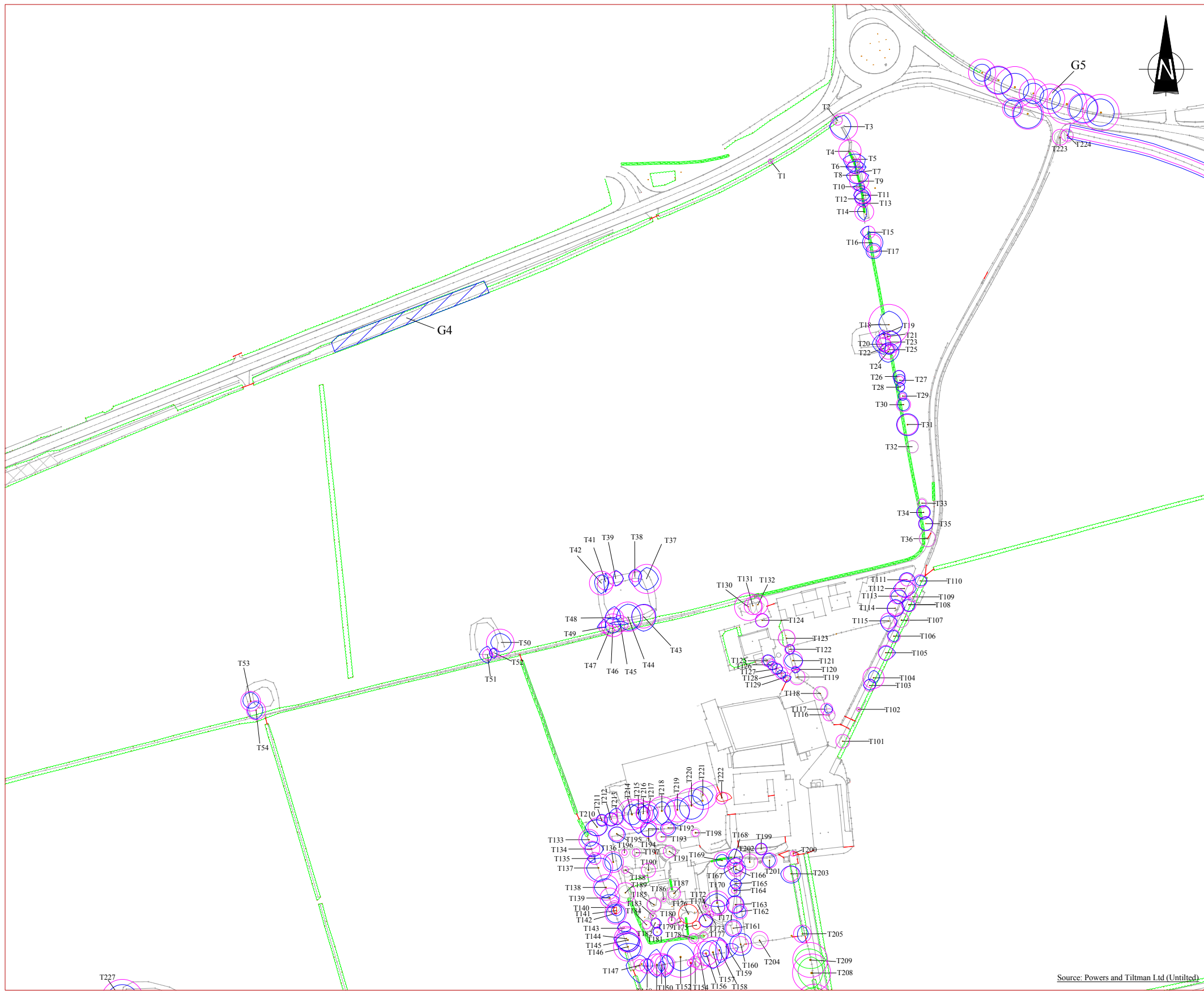
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Source: Powers and Tiltman Ltd (Untitled)











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-  Root Protection Area (RPA)

ES Scoping Appendix 12 – Ecology and Nature Conservation:

- Preliminary Ecological Appraisal

17 November 2017

Land at Junction 20 of
M6/M56 Interchange,
Grappenhall, Cheshire

Preliminary Ecological
Appraisal

Report Number: 10682_R01a_PM_LP

Author: Paul Moody BSc MCIEEM

Revision: Laura Dennis BSc (Hons) MSc
GCIEEM

Checked: John Moorcroft MSc MCIEEM, CEnv



Tyler Grange

Contents

Summary

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Section 3: Ecological Features and Evaluation4

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Section 5: Conclusions19

References

Appendices / Appendix

- Appendix 1: Legislation and Planning Policy
- Appendix 2: Great Crested Newt Habitat Suitability Indices
- Appendix 3: Parameters Plan
- Appendix 4: Ecology Survey Planner

Plans

Habitat Features Plan
10682_P01a October 2017 LRD/HC

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Summary

- S.1. This report has been prepared by Tyler Grange LLP on behalf of Langtree PP and First Panattoni. It sets out the findings of a Preliminary Ecological Appraisal (PEA) of a parcel of land at Junction 20 of M6/M56 Interchange, Grappenhall, Cheshire (OS Grid Reference SJ 66027 84669), hereinafter referred to as the 'site' to inform the site's promotion for future development as a distribution centre.
- S.2. The hedgerows, ponds, woodland, ditches and brook which are present within the site are considered to be of ecological importance. These features should be retained by the development proposals wherever possible and compensation should be given, within the green infrastructure of the site, for any losses that do occur.
- S.3. Further surveys will be required for the following species / faunal groups prior to a planning application:
- Badger survey of site and within 30m of its boundary;
 - Bat activity surveys across the site;
 - Preliminary Roost Assessment of buildings and mature trees which may have potential for roosting bats (where these are affected by development proposals);
 - Breeding bird surveys of the site;
 - Great crested newt surveys of ponds within the site and within 250m of the site; and
 - Otter survey along Bradley Brook, if it is to be affected by the development.
- S.4. Great crested newt is likely to be the biggest constraint on the quantum of development achievable, if they are found to be present within the site. However, it is possible that the great crested newt population present within the site could be accommodated within areas of the site to the south, which will remain undeveloped. The exact amount of mitigation required will depend on the population size and the location of the population in relation to the development area.
- S.5. It is considered that this report is adequate to inform the allocation of the site and that the development could proceed in conformity with relevant legislation and policy, assuming mitigation (informed by detailed surveys for protected species where necessary) can be implemented successfully.



Section 1: Introduction, Context and Purpose

Introduction

- 1.1. This report has been prepared by Tyler Grange LLP on behalf of Langtree PP and First Panattoni. It sets out the findings of a Preliminary Ecological Appraisal (PEA) of a parcel of land at the Junction 20 of M6/M56 Interchange, Grappenhall (OS Grid Reference SJ 66027 84669), hereinafter referred to as the 'site' to inform the site's promotion for future development as a distribution centre.

Context

- 1.2. Plans are being drawn up to develop the site to provide a large distribution centre. A parameters plan for the site has been produced, which will form the basis for an outline planning application.

Purpose

- 1.3. This report:
- Uses available background data and results of field surveys, to describe and evaluate the ecological features present within the likely 'zone of influence' (Zol)¹ of the proposed development;
 - Describes the actual or potential ecological issues and opportunities that might arise as a result of the site's future development for employment use;
 - Where appropriate, makes recommendations for mitigation of adverse effects and ecological enhancement, to ensure conformity with policy and legislation listed in **Appendix 1**; and
 - Assuming site allocation, identifies further work required to inform a future planning application.
- 1.4. It is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development.
- 1.5. This assessment and the terminology used are consistent with the 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2016).

¹ Defined as the area over which ecological features may be subject to significant effects as a result of activities associated with a project and associated activities (CIEEM 2016).



Section 2: Methodology

Data Search

- 2.1. The aim of the data search is to collate existing ecological records for the site and adjacent areas. Obtaining existing records is an important part of the assessment process as it provides information on issues that may not be apparent during a single survey, which by its nature provides only a 'snapshot' of the ecology of a given site.
- 2.2. The data search has been undertaken for a 10km radius around the site for international statutory sites, a 2km radius for national statutory and non-statutory sites and a 1km radius for protected and priority² species records.
- 2.3. The following organisations and individuals have been contacted and, where relevant, the information provided has been incorporated with acknowledgement within this report:
 - rECOrd (Cheshire Biological Records Centre), for protected and priority species records and locations of non-statutory designated sites;
 - Multi-Agency Geographic Information for the Countryside (MAGIC) website, for locations of European and national statutory sites;
 - Section 41 of the Natural Environment and Rural Communities (NERC) Act for priority species and habitats in England, subject to conservation action, to assist with the evaluation of ecological resources and to inform site enhancement strategies;
 - The Local Biodiversity Action Plan (LBAP) known as 'Cheshire Region Biodiversity Partnership', for local priority habitats and species subject to conservation action, to assist with the evaluation of ecological resources and to inform site enhancement strategies; and
 - The Warrington Metropolitan Borough Council website was consulted for details of relevant local planning policies and supplementary planning guidance; and
 - As a small section of the site is within High Leigh Parish which is in within Cheshire East Council (CEC), CEC website was also consulted for details of relevant local planning policies.

Extended Phase I Habitat Survey

- 2.4. An 'extended' Phase I habitat survey was undertaken on 17th November 2016, by Paul Moody and Hayley Care both experienced field ecologists and members of the Chartered Institute of Ecology and Environmental Management (CIEEM). The technique was based upon Phase I survey methodology (JNCC, 2010). This 'extended' Phase I technique provides an inventory of the habitat types present and dominant species.
- 2.5. Additionally, incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support legally protected and priority species.
- 2.6. The weather conditions for the survey were cold (5°C), with blustery winds and heavy rain for a portion of the survey.

² UK priority species and habitats are those subject to conservation action and referred to as Species of Principal Importance (SoPIs) or Habitats of Principal Importance (HoPIs). They are listed at Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act states that local planning authorities must have regard for the conservation of both SoPIs and HoPIs.



Evaluation

- 2.7. The evaluation of habitats and species is defined in accordance with published guidance (CIEEM, 2016). The level of importance of specific ecological features is assigned using a geographic frame of reference, with international being most important, then national, regional, county, local and lastly, within the site boundary only.
- 2.8. Evaluation is based on various characteristics that can be used to identify ecological features likely to be important in terms of biodiversity. These include site designations (such as SSSIs), or for undesignated features, the size, conservation status (locally, nationally or internationally), and the quality of the ecological feature. In terms of the latter, quality can refer to habitats (for instance if they are particularly diverse, or a good example of a specific habitat type), other features (such as wildlife corridors or mosaics of habitats) or species populations or assemblages.
- 2.9. No evaluation of protected or priority species groups has been made as no detailed surveys have been conducted.

Limitations

- 2.10. Owing to the timing of the surveys, some plant species may not have been visible. That said, given the nature of the habitats present, this is not considered likely to affect the conclusions of this report.

Quality Control

- 2.11. All ecologists at Tyler Grange LLP are members of CIEEM and abide by the Institute's Code of Professional Conduct.



Section 3: Ecological Features and Evaluation

Context

- 3.1. The site predominantly consists of a series of arable and cattle and sheep-grazed pastoral fields. It covers approximately 90 ha and is largely flat in the north, with a slight slope to the south. Hedgerows, woodland, trees, watercourses and ponds are all also present within the site.
- 3.2. The site is present within a predominantly rural environment but is bound to the south and east by the M6 and M56 motorways respectively. An industrial estate is also present immediately west of the site

Protected Sites

Statutory Sites

- 3.3. There are no statutory designated sites within the site boundary, but four such sites are located within the study area, see **Table 3.1**.

Table 3.1: Statutory designated sites within the study area.

Site Name	Designation	Distance / Direction from Site	Reason for Designation
Midland Meres and Mosses Phase I	Ramsar	7.2km East	A series of lowland open water and peatland sites supporting a number of rare species associated with wetlands including five nationally scarce plants and an assemblage of rare wetland invertebrates.
Rostherne Mere	Ramsar	7.4km East	One of the deepest and largest meres of the Shropshire-Cheshire Plain which supports overwintering cormorant <i>Phalacrocorax carbo carbo</i> , bittern <i>Botaurus stellaris</i> , and water rail <i>Rallus aquaticus</i> , occurring at nationally important levels.
Rixton Clay Pits	SAC	5.5km Northeast	Disused brickworks with many ponds which support great crested newt <i>Triturus cristatus</i> .
Manchester Mosses	SAC	6.3km North	Degraded raised bog habitat which is still capable of natural regeneration.

Non-Statutory (Local) Sites

- 3.4. The site is not covered by any no-statutory designations, but there are several such sites within the study area, see **Table 3.2**.

Table 3.2: Non-statutory designated sites within the study area.



Site Name	Designation	Distance / Direction from Site	Reason for Designation
The Bongs and the Gorse	LWS	1.3km NE	Designated for its area of broad-leaved semi-natural woodland.
The Dingle and Ford's Rough	LWS	1.7km NW	Designated for its area of broad-leaved semi-natural woodland.
Grappenhall Heys	LWS	1.7km NNW	Designated for its area of broad-leaved semi-natural woodland.
Stretton Moss	LWS	2km SW	Designated for its moss land which is being colonised by scrub

- 3.5. LWSs are selected in accordance with criteria set out in 'Local Wildlife Site Selection criteria for the Cheshire Region' (Giles (ed.) 2012). They are therefore of **county importance**.

Habitats and Flora

- 3.6. The site supports the following habitats:

- Arable land;
- Buildings and hardstanding;
- Hedgerows;
- Improved grassland;
- Ponds;
- Scattered Trees and Scrub;
- Tall Ruderal;
- Watercourses; and
- Woodland (semi-natural broad-leaved).

- 3.7. For ease of reference, habitat types have been described alphabetically, below. All the features described are shown on the Habitat Features **Plan 10682/P01a**.

Arable Land

- 3.8. The northern most fields (fields F1 to F3) are currently used for arable crop production (see **Photograph 1**). At the time of survey, the fields were drilled with a winter crop thought to be a winter silage crop.
- 3.9. Arable fields are monocultures and are of generally little ecological value and are of **negligible ecological importance**, although they can provide foraging habitat for wintering birds. This is evaluated separately under the protected species heading below.





Photograph 1: view of arable fields looking east.

Buildings and Hardstanding

- 3.10. A farm complex is present at the centre of the site, which comprises various dwellings and agricultural buildings, with associated hardstanding and small private gardens.
- 3.11. The building and hardstanding have no inherent value and are of **negligible ecological importance**. However, they may have importance in relation to bats and barn owl, and are considered separately in relation to these species below.

Grassland (improved pasture)

- 3.12. Most of the site consists of fields of improved pasture (see **Photograph 2**). A range of common grasses are present including, perennial-rye grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, red fescue *Festuca rubra*, cock's foot *Dactylis glomerata* and red fescue *Festuca rubra*. Common agricultural weeds were present, particularly around the sites margins, species present common nettle *Urtica dioica*, common cleavers *Gallium aparine*, curly-leaved dock *Rumex crispus*, cow parsley *Anthriscus sylvestris*, stitchwort *Stellaria* sp and creeping thistle *Cirsium arvense*.
- 3.13. The fields are used both for cattle and sheep grazing. The species composition of the swards is similar in fields grazed by cattle and sheep, however the sward within cattle grazed fields was longer with an increased dominance of perennial-rye grass. The sward in sheep grazed fields is shorter with a reduced dominance of perennial-rye grass and an increase in species such as red fescue.
- 3.14. The improved pasture is generally species poor and is a common and widespread resource of little intrinsic ecological value. For this reason, it is considered to be of **negligible ecological importance** only.



Photograph 2: Improved pasture present within the site.

Hedgerows and Scattered Trees

- 3.13. The site and field units are predominantly bound by hedges, some with mature and semi-mature trees. The hedgerows are predominantly species poor hawthorn *Crataegus monogyna* hedgerows which are flail cut. Ground flora at the time of survey was limited to common agricultural weeds present within the fields margins; however, this is expected due to the time of year that the survey was conducted, and the ground flora could be notably more diverse during late spring and summer.
- 3.14. Hedgerows present in the north east of the site, as well as along Bradley Brook are considerably more species diverse and may be classed as being important if assessed against the Hedgerows Regulations 1997.
- 3.15. The hedgerows provide a network of habitat around the site and to and from the wider area. The majority of hedgerows are considered to be of **local ecological importance**.

Ponds

- 3.16. A total of 12 ponds are present within the site, these are predominantly field ponds with associated scrub, but 2 woodland ponds are also present within the site. Further information about the ponds, including descriptions, is given in **Appendix 2**.
- 3.17. Ponds present within the site are considered to be of **local ecological importance** as they provide habitat diversity and potentially habitat for amphibians, including great Crested Newt (GCN) *Triturus cristatus*. If during future surveys the ponds are found to contain important species (such as GCN) or important species assemblages, this value may need to be reassessed and increased.

Scattered Trees and Scrub

- 3.18. Two tree lines are present within the north west of the site these consisted of semi-mature to mature specimens of pedunculate oak, hawthorn, ash and horse chestnut *Aesculus hippocastanum*.

- 3.19. Several mature trees are present within the site; these are mostly associated with hedgerows or the Bradley Brook Corridor. Species present were predominantly pedunculate oak *Quercus robur* but other species including ash *Fraxinus excelsior* and alder *Alnus glutinosa* were also present.
- 3.20. Some small areas of scrub are present within the site, these are associated with ponds and other unmanaged areas of the site, such as meanders in Bradley Brook. Species present included hawthorn, alder and willow *Salix* sp.
- 3.21. The dense scrub and scattered trees cannot be reproduced in the short-medium term and are considered to be of **site ecological importance**.

Tall Ruderal

- 3.22. Small unmanaged areas within fields are dominated by ruderal species such as common nettle *Urtica dioica*, greater willow herb *Epilobium hirsutum*, cow parsley *Anthriscus sylvestris*, red campion *Silene dioica* and other species such as male fern *Dryopteris filix-mas* and reed canary grass *Phalaris arundinacea*.
- 3.23. The areas of ruderal are small in area and consist of common and widespread species they are considered to be of **site ecological importance**.

Watercourses

- 3.24. Bradley Brook flows in a west – east direction along the southern boundary of the site, before entering in the south-eastern corner of the site. Bradley Brook is a small stream as it runs adjacent to and through the site (see **Photograph 3**).
- 3.25. The channel of Bradley Brook is approximately 1m wide and 0.5 m deep, with a water depth of approximately 10 – 20 cm. The brook was fast flowing at the time of survey and has a silt a pebble substrate. This section of the Brook is heavily shaded either by adjacent hedgerows or by trees.
- 3.26. Bradley Brook, provides habitat connectivity along the south of the site as well as habitat for a range of faunal groups, potentially including: aquatic invertebrates, feeding opportunities for birds (potentially including kingfisher) and may also provide a food resource for bats. As such it is considered to be of **local ecological importance**.
- 3.27. Three ditches (D1 – D3 on **Plan 10682/P01a**) are present within the site, these are field drains which were heavily shaded by trees or hedgerows, these channels were approximately 1m wide and 0.8m deep and held little water at the time of survey, with only small puddles being present (see **Photograph 4**).
- 3.28. The ditches present within the site are heavily shaded and were almost dry at the time of survey and do not provide the same level of habitat diversity or extent as Bradley Brook They do however contribute (together with their associated features such as hedgerows and trees) towards providing a network of habitats around the site. They are therefore considered to be of **site ecological importance**.





Photograph 3: Bradley Brook as it flows through the site.



Photograph 4: Ditch (D3) present to the north west of the site.

Woodland (semi-natural broad-leaved)

- 3.29. Two areas of semi-natural broad-leaved woodland are present within the site, Bradley Gorse and Wright's Covert.
- 3.30. The woodland consisted predominantly of semi-mature specimens included pedunculate oak *Quercus robur*, sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, willow *Salix* sp, alder *Alnus glutinosa*.
- 3.31. The understory was underdeveloped but species such as holly *Ilex aquifolium*, hawthorn, and dog rose *Rosa canina* were present. Large areas of the understory of Bradley Gorse are dominated by Rhododendron *Rhododendron ponticum* (see **Photograph 5**). This species is listed as an invasive species within schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and it is illegal to cause its spread in the wild.



Photo 5: Bradley Gorse showing Rhododendron colonisation

- 3.32. Ground flora was limited at the time of survey and predominantly consisted of cleavers *Gallium aparine*, common nettle, bramble *Rubus fruticosus* and red campion.
- 3.33. The woodland is an important ecological resource which cannot be replaced in the short term; it provides structural diversity and habitat for a range of species including birds, invertebrates, amphibians including GCN and mammals including badger.
- 3.34. Taking into account the above, the woodlands on site are considered collectively to be of **local ecological importance**.

Habitats on Adjacent Land

- 3.35. Habitats on adjacent land were not accessible, however based on what can be viewed from aerial photography and what could be seen from public rights of way a brief description is provided below:
- 3.36. The site is bound to the north B5356 (considered to be of negligible ecological importance) beyond which lies further arable fields. To the east the site is bound by the M6. To the south of the site are areas of arable fields (considered to be of negligible ecological importance) and hedgerows. The west of the site is bounded by an industrial estate.
- 3.37. There are also nine ponds on adjacent land which lie within 250m of the site.

Fauna

- 3.38. For ease of reference, descriptions of the fauna have been described alphabetically, below.

Amphibians

- 3.39. No amphibian records were provided by rECOrd within 1km of the site.
- 3.40. A total of 12 ponds are present within the site and a further nine ponds are present within 250m of the site.

- 3.41. Habitat Suitability Indices in relation to Great Crested Newt (GCN) were calculated for ponds within the site and are presented in **Appendix 2**. The ponds within the site range from 'poor' to 'excellent' for their suitability to support GCN.
- 3.42. Most of the site provides suboptimal terrestrial habitat for GCN and other amphibians, as it consists of pastoral and arable fields. However, the presence of ponds both within and around the site means that there is the potential for GCN and other amphibians to be present. Particularly within the hedgerows, tree lines, areas of scrub and woodland.

Badgers

- 3.43. Thirty-two badger records were provided by rECOrd from within 1km of the site.
- 3.44. Potential foraging and sett building habitat is present within the site; particularly within areas of woodland and within hedgerows.
- 3.45. Evidence of badger was found within the site in the form of one badger latrine, which was present towards the south of the site (see **Target Note 1** on Habitat Features **Plan 10682/P01a**).

Bats

- 3.46. No bat records were provided by rECOrd from within 2km of the site.
- 3.47. Common and widespread species of bats, such as pipistrelle and myotis species are likely to use the field margins, hedgerows, Bradley Brook and woodland for commuting and foraging.
- 3.48. The buildings and mature trees present within the site could provide roosting opportunities for bats.

Birds

- 3.49. Notable bird records received from rECOrd are presented in **Table 3.3**.

Species Common Name	Species Scientific Name	Number of records from last 20 years	Conservation Status
Gadwall	<i>Anas strepera</i>	1	LBAP, BoCC Amber, WCA9
Short-eared Owl	<i>Asio flammeus</i>	1	BoCC Amber
Snipe	<i>Gallinago gallinago</i>	2	BoCC Amber
Kestrel	<i>Falco tinnunculus</i>	5	BoCC Amber
Mallard	<i>Anas platyrhynchos</i>	1	BoCC Amber
Swift	<i>Apus apus</i>	1	BoCC Amber
Common Gull	<i>Larus canus</i>	1	BoCC Amber



Species Common Name	Species Scientific Name	Number of records from last 20 years	Conservation Status
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	1	BoCC Amber
Mistle Thrush	<i>Turdus viscivorus</i>	1	BoCC Red
Willow Warbler	<i>Phylloscopus trochilus</i>	2	BoCC Amber
Pochard	<i>Aythya ferina</i>	2	BoCC Red
Tufted Duck	<i>Aythya fuligula</i>	1	BoCC Amber
Shoveler	<i>Anas clypeata</i>	1	BoCC Amber
Pink-footed Goose	<i>Anser brachyrhynchus</i>	1	BoCC Amber
Reed Bunting	<i>Emberiza schoeniclus</i>	1	BoCC Amber
Song Thrush	<i>Turdus philomelos</i>	1	LBAP, BoCC Amber, S41, UKBAP
Starling	<i>Sturnus vulgaris</i>	1	LBAP, BoCC Red
Skylark	<i>Alauda arvensis</i>	4	LBAP, BoCC Red, S41
Grey Partridge	<i>Perdix perdix</i>	1	LBAP, BoCC Red, S41
Yellowhammer	<i>Emberiza citrinella</i>	1	LBAP, BoCC Red, S41, UKBAP
House Sparrow	<i>Passer domesticus</i>	1	LBAP, BoCC Red, S41, UKBAP
Lapwing	<i>Vanellus vanellus</i>	3	LBAP, BoCC Red, S41, UKBAP
Barn Owl	<i>Tyto alba</i>	1	LBAP, S41, UKBAP, WCA 1
Scaup	<i>Aythya marila</i>	2	LBAP, BoCC Red, S41, UKBAP, WCA 1
Abbreviations:			
BoCC – RSPB/BTO Birds of Conservation Concern (red, amber)			
LBAP – Local Biodiversity Action Plan			
WCA 1 – Wildlife and Countryside Act (1981) Schedule 1: Species protected against disturbance at or			



Species Common Name	Species Scientific Name	Number of records from last 20 years	Conservation Status
<p>near an 'active' nest. WCA 9 - Wildlife and Countryside Act (1981) Schedule 9: animals and plants for which release into the wild is prohibited. S41 - Section 41 (S41) of the 2006 Natural Environment and Rural Communities (NERC) Act.</p>			

- 3.50. The hedgerows, mature trees and woodland within the site, are likely to provide nesting habitat for a range of passerine and other woodland bird species. The grassland may provide habitat for ground nesting species such as lapwings, and foraging barn owl, although its species poor short grazed nature means that it is sub-optimal.
- 3.51. Skylark, starling, and redwing *Turdus iliacus* (All BoCC Red listed species and in the case of starling and skylark NERC priority species) were observed during the survey.
- 3.52. The farm buildings and mature trees may also provide suitable roosting and nesting habitat for barn owl *Tyto alba*.
- 3.53. Based on the habitats present, the site potentially provides nesting and / or foraging habitat for several species for which records were provided including; swallow, swift, kestrel, snipe, barn owl, mallard, yellowhammer, house sparrow, song thrush, starling, skylark and mistle thrush), as well as over wintering habitat for species such as pink-footed goose and lapwing. Ponds may also support small numbers of wildfowl.

Invertebrates

- 3.54. One record of emperor dragonfly *Anax imperator* was received from rECOrd. This species could potential breed within water bodies within the site.
- 3.55. The majority of habitats present within the site are considered likely to support an assemblage of common and widespread invertebrate species, with no areas of species rich grassland, deadwood or standing water being present within the majority of the site.
- 3.56. The species rich hedgerows and woodland are likely to provide the greatest species diversity for invertebrates.
- 3.57. The ditches ponds, and Bradley Brook also provide habitat for a range of aquatic invertebrate species.

Reptiles

- 3.58. No reptile records were provided by rECOrd from within the search area.
- 3.59. The areas of grassland and hedgerow habitat within the site could provide some suitable habitat for common reptile species such as slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara* and grass snake *Natrix natrix*, particularly around areas of woodland edge. However, these areas are generally considered to be suboptimal due to a lack of high quality habitat, for example



areas of heath, scrub and tussocky grassland. It is therefore unlikely that reptiles occur within the site.

Water Vole

- 3.60. No water vole *Arvicola amphibius* records were provided by rECOrd.
- 3.61. Bradley Brook is considered to provide suboptimal due to heavy shading, which has led to a lack of suitable vegetation used for both foraging and cover by the species.
- 3.62. It is considered that given the very small areas of potential habitat available and the lack of water depth within the brook, it is unlikely that water vole would be present within the site.

Other Species

- 3.63. Although no records of otter were provided by rECOrd, Bradley Brook could potentially be used by otter for commuting purposes. As a small stream it is unlikely to provide a significant food resource, but this would not necessarily rule out the possibility of a holt or other resting place being present.
- 3.64. Two records of brown hare *Lepus europaeus* were provided by rECOrd from within the search area. Suitable habitat for brown hare is present within the grassland and arable fields within the site, particularly close to the areas of woodland edge.
- 3.65. Although no records of hedgehog *Erinaceus europaeus* were provided by rECOrd the hedgerows, scrub, woodland areas and fields are would potentially be used by hedgehog for nesting, foraging and hibernation.



Section 4: Considerations in Respect of Future Development

Proposed Development

- 4.1. Proposals for the site include its development as a distribution hub. A parameters plan has been produced which is presented in **Appendix 3**.
- 4.2. The potential consequences with respect to development of the site are set out below, with reference to relevant legislation and planning policy, which is summarised in **Appendix 1**.
- 4.3. The development will lead to the loss of the majority of internal hedgerows within the site as well as approximately 80 Ha of improved pasture and arable fields.

Protected Sites

- 4.4. Owing to the distances between the site, a lack of any direct habitat connections, and a lack of public accessibility to the closest LWSs, it is not thought that the development would have any direct major impact to any statutory or non-statutory protected sites. The non-residential nature of the development also means that it would not lead to an increase in recreation pressure on local sites. It is therefore thought that the development would be in accordance with Warrington's Local Plan Core Strategy Policy QE 5 and Cheshire East Local Plan Policy SE 3.

Habitats and Flora

- 4.5. The hedgerows, trees, ponds, brook and woodland within the site are considered to be an ecological resource of local importance. These habitats are likely to provide habitat for amphibians, small mammals, birds and potentially foraging habitat for bats.
- 4.6. Therefore, these habitats should be retained as far as reasonably practical within any future development, ideally as part of a green infrastructure which should form continuous corridors for wildlife movement. These areas should additionally include areas of other habitat such as ditches which are currently present within the site, together with newly created ones, which should seek to augment habitats retained within the development.
- 4.7. The provision of compensatory habitats within the site would ensure the development remains in accordance with the NPPF as well as Warrington's policy Policy QE 5 and Cheshire East's policy SE 3.
- 4.8. Ponds within the site as well as any new ponds could be included and be multi-functional, delivering biodiversity, amenity, aesthetic and drainage benefits. It is understood that some losses of these habitats are unavoidable, and suitable mitigation or compensation should be incorporated into the design. This could be achieved in the undeveloped area towards the south of the site, as well as between buildings within the site to create habitat linkages to areas of land outside of the site.
- 4.9. Although the Bradley Brook is a small watercourse with little aquatic vegetation as it crosses the site, it is still considered to be a resource of local value for wildlife and provides a corridor linking to the habitats on adjacent land. It could provide suitable habitat for otter, birds (potentially including kingfisher) and foraging bats. It is recommended that the brook and its surrounding corridor habitat are protected and retained within any future development. A minimum 8m - but preferably 15m



buffer should be created along the brook corridor to preserve riparian habitat and maintain habitat connectivity along the brook. Depending on the proximity of construction works to the brook and the short sections of ditch present within the site, measures may be required to prevent pollution or contamination of these watercourses (and surrounding lands) from both waterborne and airborne sources. These will need to take place in accordance with pollution prevention best practice.

Fauna

Badgers

- 4.10. One badger latrine was recorded to towards the south of the site during the Phase I survey. Although no other evidence of badger (such as setts) was recorded during the survey, a more detailed badger survey would be required to ascertain exactly how badgers are using the site. It is thought that if badger setts are present within the site, they are likely to be within the blocks of woodland which are already to be retained. Nevertheless, if setts are present within 30m of areas affected by development if mitigation for badgers might be necessary in respect of future development.

Bats

- 4.11. The buildings and mature trees within the site boundary may have potential for roosting bats. Therefore, buildings and trees identified for removal should be subject to preliminary roost assessment (PRA) surveys, and follow-up survey work if required.
- 4.12. The hedges, tree lines, woodland edge and brook running across the site are likely to provide suitable foraging and commuting habitat for bats. Given the number of potential roosts and the presence of features likely to be used for foraging and commuting by bats, a bat activity within and adjacent to the site is recommended. Where development affects mature trees (or lies within close proximity) surveys to ascertain the presence of bat roosts would also be required.
- 4.13. If bat roosts are present and would be affected, then mitigation would be required and could include providing replacement roosting opportunities for bats in the form of bat boxes. This may require a European Protected Species (EPS) licence to be obtained prior operations that may affect bat roosts
- 4.14. Recommendations for the retention and protection of key features such as trees, habitat along the brook and hedge boundaries, would help to ensure that foraging and commuting habitats for bats are maintained. Where possible, linkages between existing features could also be enhanced through additional tree planting. The creation of other habitat features such as ponds, ditches or swales within the landscape design of the development layout would also help to provide additional foraging habitat for bats.

Birds

- 4.15. The woodland, hedgerows and trees within the site will provide suitable nesting and feeding habitat for a number of bird species, including several UK Priority species recorded within the site such as skylark and starling. In addition, the grassland could provide suitable habitat for ground nesting species such as lapwing and skylark (both are SoPI and Cheshire LBAP species), although it is suboptimal for this due to its grazed nature. Bradley Brook could also provide habitat for bird species potentially including kingfisher, although no sand banks suitable for kingfisher burrows were recorded during the survey. Given the suitability of habitats for these species a breeding bird survey is recommended in order to ascertain whether the site is important for these bird species,



prior to submitting a planning application.

- 4.16. The buildings and mature trees that are scheduled for removal should also be subject to an inspection to identify any potential for nesting barn owl.
- 4.17. It is thought that adequate mitigation for breeding birds could be incorporated within the green infrastructure of the site.
- 4.18. Based on the records of bird species such as pink footed goose and lapwing, which were received from rECOrd, and habitats present within the site, consultation with the Cheshire West and Chester (CWAC) Council ecologist is recommended regarding the need for wintering bird surveys to inform a planning application. (CWAC are delegated by Warrington Council to assess ecological aspects of planning applications).

Great Crested Newt (GCN)

- 4.19. It will be necessary to complete a full GCN presence/absence survey prior to any future planning application to ascertain if GCN are present within the site. If GCN are found during these surveys, a full mitigation plan may be required and a European Protected Species (EPS) licence may also be needed.
- 4.20. Prior to completing a GCN survey it is not possible to predict the level of mitigation required. However, given the quality of the ponds and the majority of the surrounding habitat (arable and improved pasture) it is not thought at this time that a large population is likely within the site, and it is probable that mitigation could be accommodated with the undeveloped area towards the south of the site.

Other Species

- 4.21. Otter could potentially use the Bradley Brook as it passes though the site and further survey for otter may be required if the brook is to be affected by proposed developments.
- 4.22. Brown hare could also potentially use the site and areas of open grassland should be provided within the mitigation area to accommodate this species.
- 4.23. Hedgerows and scrub within the site are also likely to provide habitat for other mammals such hedgehog (a UK Priority species), together, with a range of commoner small mammals and terrestrial invertebrate species. Retaining the range of habitat types currently present within future development plans, together with ecological enhancement measures (such as tree and hedgerow planting) would ensure that habitats are maintained for these species, thereby ensuring conformity with National and Local planning policies relating to the conservation of biodiversity.

Ecological Design Principles and Enhancement Opportunities

- 4.24. There is the opportunity to enhance the biodiversity of the site by adopting design principles informed by local conservation strategies, notably the Local Biodiversity Action Plan (BAP). Delivery of such biodiversity gain would be in accordance with the NPPF and WMBC and CEC Local Planning Policies described in **Appendix 1**. Such opportunities include:
 - Creation of green infrastructure within the development design, which can be multi-functional, delivering biodiversity, amenity, aesthetic and drainage benefits. This should form continuous



corridors for wildlife movement and can include retained and newly created habitats, such as those listed below, which should be managed and monitored;

- Habitat creation that could include ponds (of benefit to amphibians, birds and invertebrates), hedgerows with rough grassland margins and trees; and
- Use of native flora species where possible in the landscape designs to provide new opportunities for fauna.

4.25. In addition, a management plan for the site could be produced detailing the habitat protection, creation and enhancement plans and, if required, the provision for the monitoring of any protected species on the site.

Further Work to inform a Future Planning Application

4.26. In order to provide sufficient information to inform a planning application it is recommended that the following detailed surveys for protected species are undertaken:

- Badger survey of site and within 30m of its boundary;
- Bat activity surveys across the site;
- Bat PRA surveys of buildings and mature trees identified for removal;
- Breeding bird surveys (including a barn owl assessment of buildings and trees identified for removal);
- Consultation on the need for wintering bird surveys;
- GCN survey of ponds within the site and within 250m of the site; and
- Otter survey along Bradley Brook (if it is to be affected by the development).

4.27. It is advised that the scope of any future surveys is agreed with the Cheshire West and Chester's Council Ecologist (who are delegated by Warrington Council to assess ecological aspects of planning applications) prior to submission of a planning application. The ecology survey planner in **Appendix 2** shows the optimal time for these surveys to occur.



Section 5: Conclusions

- 5.1. For the reasons stated in Section 4 development proposals are not likely to result in any adverse impacts to statutory and non-statutory nature conservation designations.
- 5.2. The Phase I survey and results of the desk study have found that the woodland, ponds, trees, scrub and brook habitats within the site are of local ecological importance. Therefore, the retention of these key habitat features has been recommended where ever possible. Where losses do occur, they should be mitigated or compensated for within the green infrastructure within the site. Ecological design principles which can be used to inform designs have also been provided. These designs can be refined as necessary once further survey data is available.
- 5.3. It is possible that the site could support a range of amphibians (including GCN), breeding birds including barn owl, badger, bats and hedgehog, brown hare, together with commoner small mammals and a range of invertebrate species.
- 5.4. Further surveys for species / faunal groups has been recommended to inform any future planning application and depending on the findings of these, it may be necessary to devise suitable mitigation and enhancement strategies, to enable the site to be developed in conformity with relevant legislation and planning policy.
- 5.5. Taking into account what is present, or could be present, mitigation requirements (in particular in relation to GCN) may have the potential to reduce the quantity of development the site can support. However, this would not to an extent that would preclude the overall principle of development of the site.



References

- Chartered Institute of Ecology and Environmental Management (2016). Guidelines for Ecological Impact Assessment in the UK and Ireland, Second Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Cheshire Biodiversity Action Plans [online]. Available at: <http://www.cheshirewildlifetrust.org.uk/biodiversity> [Accessed November 2016].
- Cheshire East Council Local Planning Policy [online]. Available at: http://www.cheshireeast.gov.uk/planning/spatial_planning/cheshire_east_local_plan/local-plan-strategy/local_plan_strategy.aspx [Accessed November 2017].
- Giles. R. (Ed.) (2012). Local Wildlife Site Selection Criteria for the Cheshire Region. Cheshire Wildlife Trust, Malpas [online]. Available at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/files/Cheshire%20LWS%20criteria%20V40.prf> [Accessed November 2016].
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey - a technique for environmental audit. JNCC, Peterborough.
- Multi-Agency Geographic Information for the Countryside (MAGIC) Interactive maps [online]. Available at: <http://www.natureonthemap.naturalengland.org.uk> [Accessed November 2016].
- The UK Biodiversity Action Plan [online]. Available at: <http://jncc.defra.gov.uk/page-5155> [Accessed November 2016].
- Warrington Metropolitan Borough Council Local Planning Policy [online]. Available at: https://www.warrington.gov.uk/info/200564/planning_policy/1903/local_plan [Accessed November 2016].



Appendix 1: Legislation and Planning Policy



Land off Junction 20 of M6/M56 Interchange, Grappenhall, Cheshire
Preliminary Ecological Appraisal

10682_R01a_17 November 2017_LRD_LP

Appendix 1: Legislation and Planning Policy

A1.1. This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the baseline ecology results.

Legislation

A1.2. Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2010
- The Countryside and Rights of Way Act 2000
- The Natural Environment and Rural Communities Act 2006
- The Hedgerows Regulations 1997
- The Protection of Badgers Act 1992.

A1.3. The European Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992, often referred to as the 'Habitats Directive', provides for the protection of key habitats and species considered of European importance. Annexes II and IV of the Directive list all species considered of community interest. The legal framework to protect the species covered by the Habitats Directive has been enacted under UK law through The Conservation of Habitats and Species Regulations 2010 (as amended).

A1.4. In Britain, the WCA 1981 (as amended) is the primary legislation protecting habitats and species. SSSIs, representing the best examples of our natural heritage, are notified under the WCA 1981 (as amended) by reason of their flora, fauna, geology or other features. All breeding birds, their nests, eggs and young are protected under the Act, which makes it illegal to knowingly destroy or disturb the nest site during nesting season. Schedules 1, 5 and 8 afford protection to individual birds, other animals and plants.

A1.5. The CRoW Act 2000 strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to 'recklessly' disturb a protected animal whilst it is using a place of rest or shelter or breeding/nest site.

Planning Policy

National Planning Policy Framework

A1.6. The relevant adopted policy at the national level is set out in The National Planning Policy Framework (NPPF; 2012), which replaces Planning Policy Statement 9 (PPS9) Biodiversity and Geological Conservation (2005). The NPPF aims to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. It sets out the key principles of ensuring that development is sustainable and that the potential impacts of planning decisions on biodiversity and geological conservation are fully considered (although the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined).



A1.7. Outline principles state that planning should:

- Contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser environmental value, where consistent with other policies in this Framework; and
- Promote mixed use developments, and encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage, or food production).

A1.8. Chapter 11, Conserving and Enhancing the Natural Environment, sets out a number of planning protocols, as follows:

- The NPPF provides guidance as to the protection of statutorily designated sites, including international sites, National Nature Reserves (NNR) and Sites of Special Scientific Interest (SSSIs), as well as non-statutory regional and local sites. The NPPF also addresses development and wildlife issues outside these sites and seeks to ensure that planning policies minimise any adverse effects on wildlife;
- The NPPF places emphasis on local authorities to further the conservation of those habitats of principal importance, or those habitats supporting species of principal importance, which are identified in Section 41 of the NERC Act 2006;
- The NPPF requires that adverse effects of development on species of principal importance should be avoided through planning conditions or obligations and that planning permission should be refused where harm to these species, or their habitats, may result, unless the need for and benefits of the development clearly outweigh the harm;
- The NPPF requires that opportunities for improving biodiversity within developments should be maximised. It states that development proposals where the primary objective is to conserve or enhance biodiversity should be permitted and that opportunities to incorporate biodiversity in and around developments should be encouraged; and
- The NPPF states that by encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

A1.9. The Government Circular 06/2005³ accompanies the National Planning Policy Framework and sets out the application of the law in relation to planning and nature conservation in England.

Local Planning Policy

Warrington Borough Council Local Plan Core Strategy (adopted July 2014)

A1.10. The Warrington Borough Local Plan Core Strategy was consulted to identify relevant policies relating to ecology and nature conservation which may need to be considered in connection with a future planning application to be submitted for the site. They are summarised as follows:

Policy QE3 - Green Infrastructure

A1.11. The Council will work with partners to develop and adopt an integrated approach to the provision, care and management of the borough's Green Infrastructure. Joint working and the assessment of applications will be focused on:

- protecting existing provision and the functions this performs;

³ Office of the Deputy Prime Minister (2005). *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. [Online].



- increasing the functionality of existing and planned provision especially where this helps to mitigate the causes of and addresses the impacts of climate change;
- improving the quality of existing provision, including local networks and corridors, specifically to increase its attractiveness as a sport, leisure and recreation opportunity and its value as a habitat for biodiversity;
- protecting and improving access to and connectivity between existing and planned provision to develop a continuous right of way and greenway network and integrated ecological system;
- securing new provision in order to cater for anticipated increases in demand arising from development particularly in areas where there are existing deficiencies assessed against standards set by the Council.

Policy QE 5 - Biodiversity and Geodiversity

A1.12. The Council will work with partners to protect and where possible enhance sites of recognised nature and geological value. These efforts will be guided by the principles set out in National Planning Policy and those which underpin the strategic approach to the care and management of the borough's Green Infrastructure in its widest sense.

A1.13. Sites and areas recognised for their nature and geological value are shown on the Policies Map and include:

- European Sites of International Importance
- Sites of Special Scientific Interest
- Regionally Important Geological Sites
- Local Nature Reserves
- Local Wildlife Sites
- Wildlife Corridors

A1.14. The specific sites covered by the above designations at the time of publication are detailed in Appendix 3.

A1.15. Proposals for development which may affect European Sites of International Importance will be subject to the most rigorous examination in accordance with the Habitats Directive. Development or land use change not directly connected with or necessary to the management of the site and which is likely to have significant effects on the site (either individually or in combination with other plans or projects) and which would affect the integrity of the site, will not be permitted unless the Council is satisfied that;

- there is no alternative solution;
- and there are imperative reasons of over-riding public interest for the development or land use change.

A1.16. Proposals for development in or likely to affect Sites of Special Scientific Interest (SSSI) will be subject to special scrutiny. Where such development may have an adverse effect, directly or indirectly, on the SSSI it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

A1.17. Proposals for development likely to have an adverse effect on regionally and locally designated sites will not be permitted unless it can be clearly demonstrated that there are reasons for the development which outweigh the need to safeguard the substantive nature conservation value of the site or feature.

A1.18. Proposals for development which may adversely affect the integrity or continuity of UK Key habitats or other habitats of local importance, or adversely affect EU Protected Species, UK Priority Species



or other species of local importance, or which are the subject of Local Biodiversity Action Plans will only be permitted if it can be shown that the reasons for the development clearly outweigh the need to retain the habitats or species affected and that mitigating measures can be provided which would reinstate the habitats or provide equally viable alternative refuge sites for the species affected.

A1.19. All development proposals affecting protected sites, wildlife corridors, key habitats or priority species (as identified in Local Biodiversity Action Plans) should be accompanied by information proportionate to their nature conservation value including;

- a site survey where necessary to identify features of nature and geological conservation importance; an assessment of the likely impacts of the proposed development proposals for the protection and management of features identified for retention;
- an assessment of whether the reasons for the development clearly outweigh the nature conservation value of the site, area or species; and
- proposals for compensating for features damaged or destroyed during the development process.

A1.20. Where development is permitted, the Council will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's nature conservation interest and/or to provide appropriate compensatory measures.

Supplementary Planning Documents

A1.21. Relevant supplementary planning document considerations are set out below:

Environmental Protection SPD (May 2013)

A1.22. This SPD supports Policy QE6 Environment and Amenity Protection and details the councils approach to dealing with environmental protection including light pollution. Development schemes which include street lighting proposals should adhere to the design principles set out in the SPD. Principles relating to landscape and visual include:

- "Limiting the light levels to a designed uniformity;
- limiting the use of lighting schemes to identified uses or users;
- the retention of screening vegetation; and
- the use of planting and bunding to contain lighting effects."

A1.23. The SPD states that "these conditions will be applied as necessary by the LPA to help reduce obtrusive light from new proposals, particularly glare and spillage, from areas of wildlife importance, open countryside and residential amenity."

Design and Construction (October 2010)

A1.24. This document provides advice and guidance to developers about aspects of the design and construction process. The document states that "A well designed landscape scheme should enhance the appearance and setting of any new development and its location. A successful scheme will have considered and correctly interpreted the landscape character of the location so as to produce the most appropriate design solution for the development."

Open Space and Recreation Provision (September 2007)

A1.25. This policy details a number of key objectives for open space within the borough including:

- "To ensure an adequate provision of open space in quantitative, qualitative and accessibility terms subsequently helping to ensure the creation of sustainable communities;
- to create opportunities for and enhance biodiversity;



- to create opportunities for travel by more sustainable modes such as by walking or cycling;
- to assist in maintaining and improving public health by providing opportunities for recreation and sport;
- to provide educational opportunities in the form of ‘outside classrooms’ through providing opportunities for contact with nature;
- to provide focal points for social interaction and community events;
- to contribute to local distinctiveness through helping to create a sense of place and belonging;
- to help secure safe and well-designed open spaces where the design has intended to deter crime; and
- to assist in tackling climate change through the plantation of trees and creation of green ‘breathing’ spaces.”

Planning Obligations (September 2007)

A1.26. This SPD details the councils approach to the use of planning obligations to facilitate decision making, relevant key objectives include:

- “Ensure appropriate environmental and biodiversity protection and enhancement and mitigation measures where appropriate;
- Ensure no detrimental impacts on amenity (visual, residential, noise, flood risk, landscape);
- Ensure conservation of heritage assets and mitigation where appropriate.”

Cheshire East Local Plan (adopted July 2017)

A1.27. The following policies of the local plan are also considered to be of relevance:

- Policy SE 3 Biodiversity and Geodiversity - Areas of high biodiversity and geodiversity value will be protected and enhanced. Enhancement measures will include increasing the total area of valuable habitat in the Borough, and linking up existing areas of high value habitat to create 'ecological stepping stone sites', 'wildlife corridors' and 'Nature Improvements Areas'. Ecological networks and connectivity are vitally important in sustaining sites and addressing the impacts of climate. Development proposals which are likely to have a significant adverse impact on nationally designated nature conservation designations will not be permitted and there will be a presumption against development affecting local sites including: local nature reserves, Sites of Biological Importance (SBIs) priority habitats and species included in the UK and Cheshire Biodiversity Action Plan (BAP), areas of ancient and semi-natural woodland and Nature Improvement Areas. In addition, all development (including conversions and that on brownfield and greenfield sites) must aim to positively contribute to the conservation and enhancement of biodiversity;
- Policy SE 5 Trees, Hedgerows and Woodland - Development proposals which are likely to result in the loss of, or threat to, the continued health and life expectancy of trees, hedgerows or woodlands (including veteran trees or ancient semi-natural woodland), that provide a significant contribution to the amenity, biodiversity, landscape character or historic character of the surrounding area, will not normally be permitted, except in exceptional circumstances; and
- Policy SE 6 Green Infrastructure - Cheshire East Council aims to deliver a good quality, and accessible network of green spaces for people to enjoy. Where appropriate planning controls can be applied to ensure that the value of existing green infrastructure assets is not compromised, and developer contributions will be secured wherever appropriate in order to improve the quality, use and multi-functionality. In addition, opportunities to include new green open spaces within development plans will also be encouraged.

Biodiversity Action Plans



A1.27. The UK Post-2010 Biodiversity Framework succeeded the UK BAP partnership in 2011 and covers the period 2011 to 2020. However, the lists of Priority Species and Habitats agreed under the UKBAP still form the basis of much biodiversity work in the UK. The current strategy for England is 'Biodiversity 2020: A Strategy for England's wildlife and ecosystem services' published under the UK Post-2010 UK Biodiversity Framework. Although the UK BAP has been succeeded, Species Action Plans (SAPs) developed for the UK BAP remain valuable resources for background information on priority species under the UK Post-2010 Biodiversity Framework.

A1.28. Priority Species and Habitats identified under the UKBAP are also referred to as Species and Habitats of Principal Importance for the conservation of biodiversity in England and Wales within Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006. The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

Local Biodiversity Action Plan (LBAP) - Cheshire Wildlife Trust

A1.29. Habitats detailed within the LBAP which occur on site:

- Hedgerows
- Woodland
- Arable Field Margins
- Gardens & Allotments
- Wood-Pasture and Parkland
- Ponds
- Roadside Verges

A1.30. Species detailed on the LBAP which occur, or have the potential to occur on site:

Birds

- Barn Owl, *Tyto alba*
- Spotted flycatcher, *Muscicapa striata*
- Farmland birds

Reptiles

- Great crested newt, *Triturus cristatus*
- Slow worm, *Anguis fragilis*

Mammals

- Brown hare, *Lepus europaeus*
- Harvest mouse, *Micromys minutus*
- Common Pipistrelle *Pipistrellus pipistrellus*
- Whiskered *Myotis mystacinus*
- Brandt's bat *Myotis brandti*
- Daubenton's bat *Myotis daubentoni*
- Leisler's bat *Nyctalus leisleri*



- Natterers *Myotis nattereri*
- Serotine *Eptesicus serotinus*

Invertebrates

- Dingy Skipper, *Erynnis tages*
- Downy Emerald *Cordulia aenea*
- Mud snail, *Omphiscola glabra*
- Small Pearl-bordered Fritillary, *Boloria selene*
- White letter hairstreak, *Satyrion w-album*

Plants


- Ivy-leaved Water-crowfoot, *Ranunculus hederaceus*




Appendix 2: Great Crested Newt Habitat Suitability Indices





Appendix 2: Great Crested Newt Habitat Suitability Indices

Pond 1		
Indices		
Grid Reference	SJ 65165 84547	
Description	Two depressions connected by a shallow ditch heavily shaded by trees and scrub, No macrophytes evident at the time of survey.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	450m ²	0.9
SI₃ - Pond drying	Sometimes	0.5
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	85%	0.5
SI₆ - Fowl	Minor	0.67
SI₇ - Fish	Absent	1
SI₈ - Ponds	33	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	0	0.3
HSI Scores	Average	0.68


Pond 2		
Indices		
Grid Reference	SJ 65467 84635	
Description	Field pond present along hedge lone. Partially shaded and with large amounts of leaf litter.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	100m ²	0.2
SI₃ - Pond drying	Sometimes	0.5
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	25%	1
SI₆ - Fowl	Absent	1
SI₇ - Fish	Absent	1
SI₈ - Ponds	33	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	30%	0.6
HSI Scores	Good	0.7




Pond 3		
Indices		
Grid Reference	SJ 65598 84664	
Description	Field pond at field margin. Partially shaded.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	450 m ²	0.9
SI₃ - Pond drying	Rarely	1
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	25%	1
SI₆ - Fowl	Absent	1
SI₇ - Fish	Absent	1
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	25%	0.55
HSI Scores	Excellent	0.86


Pond 4		
Indices		
Grid Reference	SJ 65681 84693	
Description	Duck pond partially shaded by scrub at the field boundary.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	350 m ²	0.7
SI₃ - Pond drying	Never	0.9
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	70%	0.8
SI₆ - Fowl	Minor	0.67
SI₇ - Fish	Minor	0.33
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	10%	0.4
HSI Scores	Average	0.68




Pond 5		
Indices		
Grid Reference	SJ 65822 84847	
Description	Partially shaded field pond at fields boundary. Some soft rush and bulrush present around the ponds margins.	
Distance to Site	On-site	
Photograph		
Sl1- Location	Zone A, optimal	1
Sl2- Pond area	150 m ²	0.3
Sl3 - Pond drying	Sometimes	0.5
Sl4 - Water quality	Moderate	0.67
Sl5 - Shade	40%	1
Sl6 - Fowl	Minor	0.67
Sl7 - Fish	Absent	1
Sl8 - Ponds	30	1
Sl9 – Terrestrial habitat	Moderate	0.67
Sl10 - Macrophytes	50%	0.8
HSI Scores	Good	0.72


Pond 6		
Indices		
Grid Reference	SJ 65397 84446	
Description	Field pond in centre of field, partially shaded but mostly open. No macrophytes evident at the time of survey.	
Distance to Site	On-site	
Photograph		
Sl1- Location	Zone A, optimal	1
Sl2- Pond area	1,700 m ²	0.85
Sl3 - Pond drying	Sometimes	0.5
Sl4 - Water quality	Moderate	0.67
Sl5 - Shade	20%	1
Sl6 - Fowl	Absent	1
Sl7 - Fish	Absent	1
Sl8 - Ponds	30	1
Sl9 – Terrestrial habitat	Moderate	0.67
Sl10 - Macrophytes	10%	0.4
HSI Scores	Good	0.77




Pond 7		
Indices		
Grid Reference	SJ 66191 84372	
Description	Small depression in field, only a small amount of water present and will dry in summer months.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	20 m ²	0.05
SI₃ - Pond drying	Annually	0.1
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	0%	1
SI₆ - Fowl	Absent	1
SI₇ - Fish	Absent	1
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	0%	0.3
HSI Scores	Poor	0.48

Pond 8		
Indices		
Grid Reference	SJ 66179 84329	
Description	Woodland pond which is heavily shaded. Lots of leaf litter and no macrophytes were evident at the time of survey.	
Distance to Site	On-site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	400 m ²	0.8
SI₃ - Pond drying	Rarely	1
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	90%	0.4
SI₆ - Fowl	Absent	1
SI₇ - Fish	Absent	1
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Good	1
SI₁₀ - Macrophytes	0%	0.3
HSI Scores	Good	0.73




Pond 9		
Indices		
Grid Reference	SJ 66067 84234	
Description	Woodland pond at edge of wood, which is heavily shaded. Lots of leaf litter and no macrophytes were evident at the time of survey.	
Distance to Site	On-site	
Photograph		
Sl1- Location	Zone A, optimal	1
Sl2- Pond area	380 m ²	0.8
Sl3 - Pond drying	Rarely	1
Sl4 - Water quality	Moderate	0.67
Sl5 - Shade	90%	0.4
Sl6 - Fowl	Absent	1
Sl7 - Fish	Absent	1
Sl8 - Ponds	30	1
Sl9 – Terrestrial habitat	Good	1
Sl10 - Macrophytes	0%	0.3
HSI Scores	Good	0.76

Pond 10		
Indices		
Grid Reference	SJ 66013 84055	
Description	Shallow field pond. Open and unshaded. Some areas of flag iris and soft rush present at time of survey.	
Distance to Site	On-site	
Photograph		
Sl1- Location	Zone A, optimal	1
Sl2- Pond area	250 m ²	0.5
Sl3 - Pond drying	Annually	0.1
Sl4 - Water quality	Moderate	0.67
Sl5 - Shade	0%	1
Sl6 - Fowl	Absent	1
Sl7 - Fish	Absent	1
Sl8 - Ponds	30	1
Sl9 – Terrestrial habitat	Moderate	0.67
Sl10 - Macrophytes	30%	0.6
HSI Scores	Average	0.65



Pond 11		
Indices		
Grid Reference	SJ 65960 83946	
Description	Shallow depression in field Only a small puddle was present at the time of survey and it will dry out in summer months.	
Distance to Site	On site	
Photograph	No photograph available	
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	20 m ²	0.05
SI₃ - Pond drying	Annually	0.1
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	0%	1
SI₆ - Fowl	Absent	1
SI₇ - Fish	Absent	1
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	0%	0.3
HSI Scores	Poor	0.48

Pond 12		
Indices		
Grid Reference	SJ 65675 84521	
Description	Moat (a Scheduled Ancient Monument), stone-sided in some areas, shaded by mature trees and colonised by <i>Lemna sp.</i> And <i>Typha L.</i>	
Distance to Site	On site	
Photograph		
SI₁ - Location	Zone A, optimal	1
SI₂ - Pond area	2,200 m ²	0.8
SI₃ - Pond drying	Rarely	1.0
SI₄ - Water quality	Moderate	0.67
SI₅ - Shade	100%	0.2
SI₆ - Fowl	Minor	0.67
SI₇ - Fish	Absent	1
SI₈ - Ponds	30	1
SI₉ - Terrestrial habitat	Moderate	0.67
SI₁₀ - Macrophytes	100%	0.8
HSI Scores	Good	0.72



Appendix 3: Parameters Plan



AREA SUMMARY:

Redline Area:
96.86 Ha / 239.35 Ac
Total Developable Area:
61.82 Ha / 152.63 Ac
Proposed Use:
Flexible B2/B8 with ancillary B1(a)
Number of Units:
Ranging from 2 to 10 Units
Maximum Floorspace:
325,160 m² (3,500,000 ft²) GIA
Proposed Unit Height:
Haunch height ranging from 12m to 40m
(from 72.00 AOD to 101.00 AOD)
Proposed Unit Floor Level:
Ranging from FFL 55.00 AOD to 67.00 AOD
Car Parking Provision:
Compliant with Council's parking standards for B2 use - 1/60m² and B8 use - 1/120m²
SuDS Provision:
Each Unit will have its own surface water drainage strategy as well as attenuation of public realm
Landscaping:
Appropriate landscaping will be included as part of the development proposals

Existing PRoW subject to diversion or extinguishment

Potential Retention of Existing Residential Properties

Possible Highway Improvement Works

Junction 20

Scheduled Ancient Monument

Bradley Gorse

Wrights Covert

Ecological Mitigation Area

Employment Zone A Parameters:

Developable Area:
32.48 Ha / 80.26 Ac
Proposed Use:
Flexible B2/B8 with ancillary B1(a)
Number of Units:
Ranging from 1 to 6 Units
Proposed Unit Height:
Haunch height ranging from 12m to 40 m
(from 79.00 AOD to 101.00 AOD)
Proposed Unit Floor Level:
Ranging from FFL 59.00 AOD to 67.00 AOD
Car Parking Provision:
Compliant with Council's parking standards for B2 use - 1/60m² and B8 use - 1/120m²
SuDS Provision:
Each Unit will have its own surface water drainage strategy as well as attenuation of public realm
Landscaping:
Appropriate landscaping will be included as part of the development proposals

Employment Zone B Parameters:

Developable Area:
26.74 Ha / 66.08 Ac
Proposed Use:
Flexible B2/B8 with ancillary B1(a)
Number of Units:
Ranging from 1 to 4 Units
Proposed Unit Height:
Haunch height ranging from 12m to 40m
(from 72.00 AOD to 96.00 AOD)
Proposed Unit Floor Level:
Ranging from FFL 55.00 AOD to 60.00 AOD
Car Parking Provision:
Compliant with Council's parking standards for B2 use - 1/60m² and B8 use - 1/120m²
SuDS Provision:
Each Unit will have its own surface water drainage strategy as well as attenuation of public realm
Landscaping:
Appropriate landscaping will be included as part of the development proposals

M6

M56

Planning Boundary	Employment Development Zones	Existing PRoW	Existing Watercourse	Area for Proposed Main Access Road	Watercourse 15m Stand Off from the top of the bank	Proposed Emergency Access	Proposed Main Access
Strategic Landscaping	Existing Trees To be Retained	Proposed PRoW	Proposed Cycle Link	South-North Open Green Corridor	SAM 50m Stand Off from the outer bank of the moat	Existing Ancient Roman Road	

Cliff Lane, Warrington
Parameters Plan (for Scoping Stage)
CDE Reference
 Drawn: JB
 Team: HNS
 Scale: 1:2500 @ A1
 Project No: 16-184
 Date: 13/11/2017
 Draft Status: 16-184-001
 Draft Date: 13/11/2017
 Dwg No: P001
 Rev: -

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Appendix 4: Ecology Survey Planner





Ecology Survey Planner

Birmingham
t. 0121 773 0770

Cotswolds
t. 01285 831 804

Exeter
t. 01392 447 588

Manchester
t. 01625 525 731

London
t. 0207 620 2710

e. info@tylergrange.co.uk
w. tylergrange.co.uk

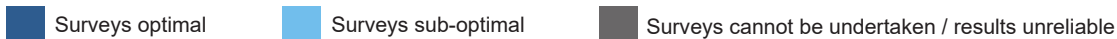
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Badgers	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Bats activity	Unreliable	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Optimal	Optimal	Unreliable	Unreliable
Bats ¹ roost identification	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Birds breeding	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable	Unreliable
Birds winter	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable	Unreliable	Unreliable	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Crayfish	Unreliable	Unreliable	Unreliable	Unreliable	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable
Dormouse	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Great Crested Newts breeding ponds	Unreliable	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable	Unreliable	Unreliable
Habitats / Detailed Flora ²	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Hedgerows	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Otter	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Reptiles	Unreliable	Unreliable	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Unreliable
Terrestrial / Freshwater Invertebrates ³	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal
Water Voles ⁴	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal	Sub-optimal

¹ Internal building searches for evidence of bats can be undertaken at any time; winter is the best time for assessing trees for roosting potential, with further work to confirm potential undertaken in spring / summer.

² The timing of detailed flora surveys is dependent on the specific habitat type to be investigated. Lower plants should be surveyed in winter.

³ Timing is dependent on target species/group.

⁴ Surveys are required in both the early and late seasons.



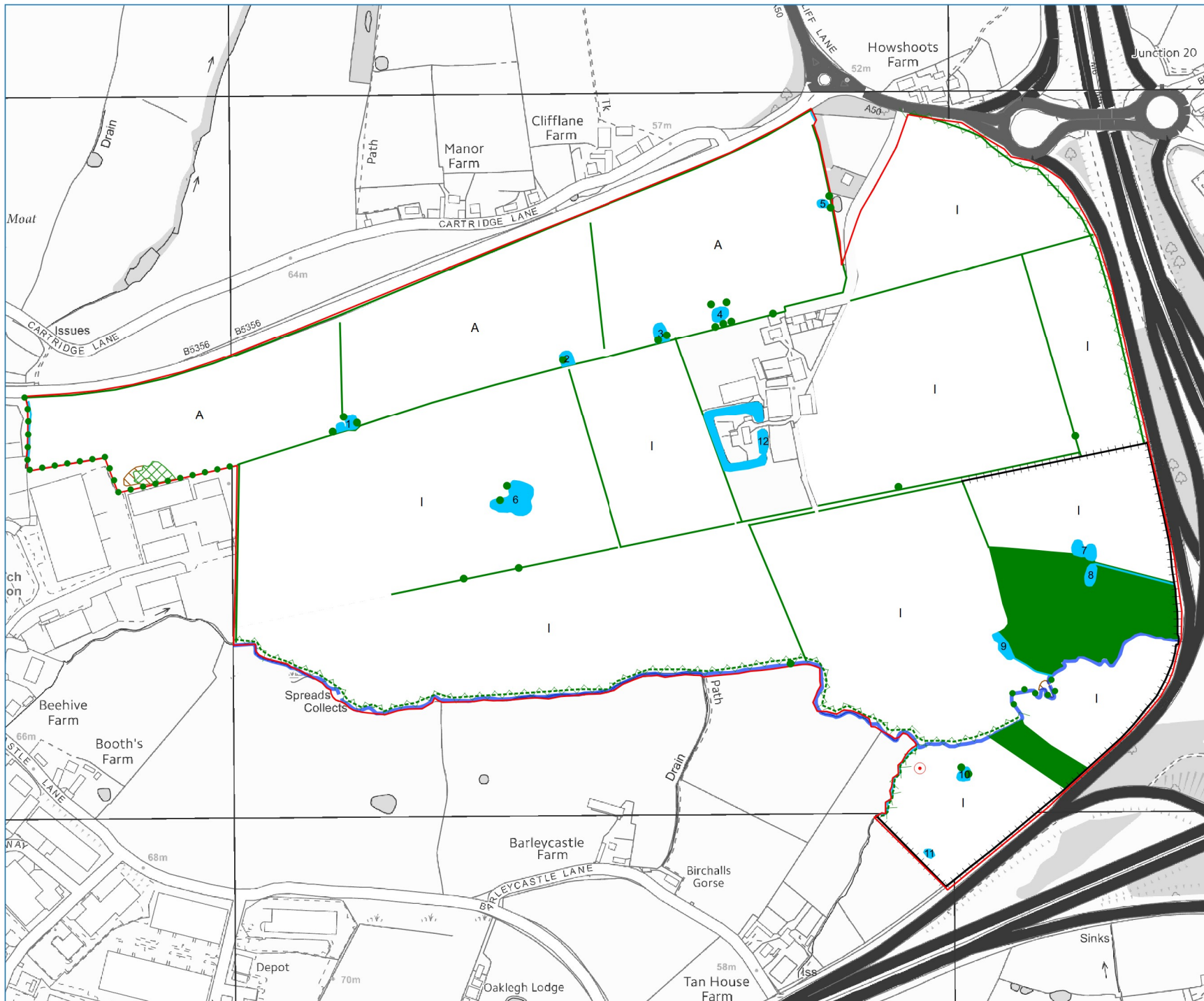
Plans

Habitat Features Plan
10682_P01a October 2017 LRD/HC



Land off Junction 20 of M6/M56 Interchange, Grappenhall, Cheshire
Preliminary Ecological Appraisal

10682_R01a_17 November 2017_LRD_LP



- Redline boundary
- A Arable
- Ditch
- Fence
- Hedgerow species rich (intact)
- Hedgerow species rich defunct
- Hedgerow species poor intact
- I Improved grassland
- Flowing water
- Ponds
- Scattered tree
- Tall ruderal
- ⊙ TN1
- Tree line
- Scrub dense
- Semi-natural broad-leaved woodland



Project Cliff Lane Warrington

Drawing Title Habitat Features

Scale As Shown (Approximate)

Drawing No. 10682/P01a

Date October 2017

Checked PM/HC



ES Scoping Appendix I3 – Noise and Vibration:

- Environmental Noise Baseline Assessment

Warrington Interchange MP

Environmental Noise Assessment – Baseline Survey Results

First Industrial / Langtree

Job No: 1015524
Doc Ref: 1015524-RPT-AS-001
Revision: —
Date: 15 September 2017

Project title	Warrington Interchange MP	Job Number
Report title	Environmental Noise Assessment – Baseline Survey Results	1015524

Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
—	15/09/2017	First Issue

Document Validation (latest issue)

15/09/2017	15/09/2017	15/09/2017
<hr style="border: 0.5px solid black;"/> Principal author Signed by: Nikolova, Lily	<hr style="border: 0.5px solid black;"/> Checked by Signed by: Nikolova, Lily	<hr style="border: 0.5px solid black;"/> Verified by Signed by: Nikolova, Lily

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1.0 Introduction

Cundall has been commissioned to undertake baseline noise monitoring of noise levels affecting noise sensitive receptors located nearby the new development site off Cliff Road, Warrington.

The purpose of this report is to detail the prevailing noise levels affecting noise-sensitive receptors and to establish representative daytime and night-time background levels at each measurement location for the purpose of future assessment.

2.0 Environmental noise survey

In order to assess the prevailing levels of environmental noise affecting nearby noise sensitive receivers, environmental noise surveys were undertaken at six different locations.

Due to access and security requirements, continuous unattended noise logging measurements were undertaken on the development land at positions representative of the noise climate at the nearest and most exposed noise-sensitive receptors.

Table 2.1 below documents the monitoring positions and the corresponding measurement duration.

Monitoring position	Monitoring location	Measurement duration
MP 1	North-west corner of the site, approximately 3m from the boundary hedge to Grappenhall Lane. Assumed to be representative of the prevailing background noise climate at the Grappenhall Lodge, approximately 45m away.	Unattended measurement undertaken between 16 and 17 August 2017.
MP 2	North boundary of the site, approximately 3m from the boundary hedge to Grappenhall Lane. Assumed to be representative of the prevailing background noise climate at the dwellings on Cartridge Lane, approximately 40m away.	Unattended measurements undertaken between 17 and 18 August 2017.
MP 3*	North-east corner of the site, approximately 3m from the boundary hedge to Cliff Lane. Assumed to be representative of the prevailing background noise climate at Howshoots Farm approximately 16m away.	Unattended measurements undertaken between 24 and 30 August 2017.
MP 4	South-east corner of the site, on the site boundary. Assumed to be representative of the prevailing background noise climate at Tan House Farm on Barleycastle Lane, approximately 150m away.	
MP 5	On the south boundary of the site. Assumed to be representative of the prevailing background noise climate at Barleycastle Farm on Barleycastle Lane, approximately 150m away.	
MP 6*	Near the eastern pond in the centre of the site, on the boundary to Bradley View Cottages.	
<p><i>*The monitoring position representative of the prevailing background noise climate at Bradley View Cottage is to be identified at the next stage of the acoustic assessment.</i></p>		

Table 2.1 - Monitoring positions and measurement periods

The drawing referenced in Appendix I of this report details the approximate location of each unattended measurement position.

Noise measurements were made using three 01dB Cube (serial numbers 10619, 10692 and 11112) and one Casella CEL 63X (serial number 1211404) precision sound level meters, generally in accordance with BS EN 60651:1994 and BS 7445:1993. All meters were field calibrated before and after with no significant drift witnessed. Calibration certificates for all equipment are available upon request.

2.1 Weather conditions

A summary of weather conditions for the duration of the surveys is presented in Table 2.2.

Date	Wind speed – average (km/h)	Wind speed – high (km/h)	Average temperature (°C)	Precipitation (mm)
16 th August 2017	4	10	15	0.5
17 th August 2017	1	3	18	8.4
18 th August 2017	1	6	13	7.9
23 rd August 2017	1	8	16	0
24 th August 2017	0	3	16	0.3
25 th August 2017	1	5	16	0
26 th August 2017	2	8	15	0
27 th August 2017	1	5	15	0
28 th August 2017	1	3	19	0
29 th August 2017	2	8	14	0.5
30 th August 2017	2	8	13	0

Table 2.2 - Summary of weather conditions

2.2 Results summary

A summary of the average daytime (07:00h - 23:00h) and night-time (23:00h - 07:00h) ambient noise levels recorded is detailed within Table 2.3 and Table 2.4. The values are the logarithmically averaged $L_{Aeq,15min}$, the maximum $L_{AF,max}$, the maximum $L_{AF10,15min}$ and range of $L_{A90,15min}$ dB values measured. All values have been rounded to the nearest integer value (as fractions of a decibel are imperceptible) and are given in dBA.

Location	Date	Average $L_{Aeq,15min}$ (dB)	Highest $L_{AFMax,15min}$ (dB)	Highest $L_{AF10,15min}$ (dB)	Range $L_{AF90,15min}$ (dB)
1	16 th – 17 th August 2017	68	106	81	43 – 58
2	17 th – 18 th August 2017	66	93	73	46 – 56
3	23 rd August 2017*	69	88	73	54 – 66
	24 th August 2017	70	87	74	53 – 67
	25 th August 2017	70	92	75	50 – 67
	26 th August 2017	71	100	82	49 – 60
	27 th August 2017	68	95	73	54 – 62
	28 th August 2017	68	82	72	50 – 63
	29 th August 2017	70	93	74	48 – 67
	30 th August 2017*	71	84	74	57 – 68
4	23 rd August 2017*	57	68	62	49 – 59
	24 th August 2017	60	77	68	50 – 63
	25 th August 2017	61	75	69	51 – 66
	26 th August 2017	59	85	65	48 – 59
	27 th August 2017	61	89	66	52 – 62
	28 th August 2017	59	71	64	52 – 61

Location	Date	Average L _{Aeq,15min} (dB)	Highest L _{AFMax,15min} (dB)	Highest L _{AF10,15min} (dB)	Range L _{AF90,15min} (dB)
	29 th August 2017	56	70	61	51 – 56
	30 th August 2017*	60	66	64	53 – 62
5	23 rd August 2017*	50	68	55	42 – 52
	24 th August 2017	52	73	60	41 – 56
	25 th August 2017	53	73	60	40 – 58
	26 th August 2017	49	73	56	40 – 52
	27 th August 2017	61	97	73	44 – 55
	28 th August 2017*	52	72	56	45 – 53
6	23 rd August 2017*	41	68	49	36 – 47
	24 th August 2017	41	68	47	36 – 44
	25 th August 2017	42	65	49	36 – 47
	26 th August 2017	41	63	46	37 – 42
	27 th August 2017	55	96	72	37 – 45
	28 th August 2017	40	64	44	37 – 41
	29 th August 2017	42	62	47	37 – 43
	30 th August 2017*	42	72	43	38 – 41

Table 2.3 - Summary survey results, daytime (07:00h – 23:00h)

Location	Date	Average L _{Aeq,15min} (dB)	Highest L _{AFMax,15min} (dB)	Highest L _{AF10,15min} (dB)	Range L _{AF90,15min} (dB)
1	16 th – 17 th August 2017	65	100	73	46 – 57
2	17 th – 18 th August 2017	64	87	73	44 – 54
3	23 rd – 24 th August 2017	67	86	75	55 – 66
	24 th – 25 th August 2017	67	89	75	54 – 66
	25 th – 26 th August 2017	65	82	73	46 – 60
	26 th – 27 th August 2017	65	96	71	51 – 60
	27 th – 28 th August 2017	64	80	71	55 – 61
	28 th – 29 th August 2017	66	80	75	47 – 61
	29 th – 30 th August 2017	66	81	74	44 – 64
4	23 rd – 24 th August 2017	61	71	69	51 – 65
	24 th – 25 th August 2017	61	83	69	53 – 66
	25 th – 26 th August 2017	57	66	63	48 – 60
	26 th – 27 th August 2017	62	96	64	53 – 60
	27 th – 28 th August 2017	59	73	64	52 – 60
	28 th – 29 th August 2017	54	66	58	47 – 56
	29 th – 30 th August 2017	57	67	64	48 – 62
5	23 rd – 24 th August 2017	54	71	60	45 – 58
	24 th – 25 th August 2017	53	65	60	47 – 59
	25 th – 26 th August 2017	49	62	55	40 – 52

Location	Date	Average L _{Aeq,15min} (dB)	Highest L _{AFMax,15min} (dB)	Highest L _{AF10,15min} (dB)	Range L _{AF90,15min} (dB)
	26 th – 27 th August 2017	53	69	58	48 – 54
	27 th – 28 th August 2017	52	74	58	47 – 54
6	23 rd – 24 th August 2017	43	58	49	38 – 47
	24 th – 25 th August 2017	43	56	49	38 – 47
	25 th – 26 th August 2017	40	63	46	36 – 41
	26 th – 27 th August 2017	43	65	55	39 – 43
	27 th – 28 th August 2017	42	65	52	38 – 43
	28 th – 29 th August 2017	41	60	46	36 – 43
	29 th – 30 th August 2017	40	64	56	36 – 42

Table 2.4 - Summary of survey results, night-time (23:00h – 07:00h)

A graphical representation of survey results at unattended logging locations is presented in Appendix II of this report.

2.3 Discussion

Based on survey results and subjective impressions from Cundall engineers who attended site, Table 2.5 provides a review of existing noise sources noted to contribute to the existing noise climate at measurement position.

Measurement position	Existing noise climate
MP 1	The L _{Aeq} noise climate is largely driven by road traffic noise on Grappenhall Lane, while background noise levels (L _{A90} values) are largely dominated by distant road traffic noise from the M6 and the M56.
MP 2	
MP 3	The L _{Aeq} noise climate is largely driven by road traffic noise on Cliff Lane, while background noise levels (L _{A90} values) are largely dominated by distant road traffic noise from the M6 and the M56.
MP 4	The noise L _{Aeq} and background noise climate largely dominated by the road traffic noise from the M6 and the M56.
MP 5	
MP 6	

Table 2.5 - Description of existing noise climates

2.4 BS 4142 representative background levels

When assessing the level of adverse impact upon existing dwellings to the introduction of new industrial and commercial sound sources, the relevant British Standard (BS 4142:2014) requires that the predicted level of new impact (Rating Level) be compared against the existing ‘representative’ background sound level.

Statistical analysis has been used to determine the most commonly occurring L_{AF90,15min} value during each reference period. In all instances, this value has been considered as the ‘representative’ background level.

Histograms showing the percentage occurrence of each L_{AF90,15min} value at location are presented in Appendix III of this report.

2.4.1 Proposed representative background values

Based on information detailed in Table 2.3, Table 2.4 and Appendix III, Table 2.6 below presents a summary of assumed representative background levels at each monitoring location during the daytime and night-time:

Period	Monitoring location	Representative background level (dB)
Daytime (07:00h – 23:00h)	MP1	52
	MP2	51
	MP3	59
	MP4	56
	MP5	50
	MP6	38
Night-time (23:00h – 07:00h)	MP1	49
	MP2	47
	MP3	57
	MP4	54
	MP5	48
	MP6	37

Table 2.6 - Proposed representative background levels

3.0 Conclusions

Unattended environmental noise surveys have been conducted in order to establish the prevailing noise levels at noise-sensitive dwellings situated nearby the proposed development at land off Cliff Lane, Warrington.

Based on the noise survey results obtained, data analysis has been performed to establish proposed representative background levels for the purpose of future assessments.

Appendices

Appendix I Relevant drawings

Please refer to the latest issue of the following site location drawing which details the approximate location of each survey position:

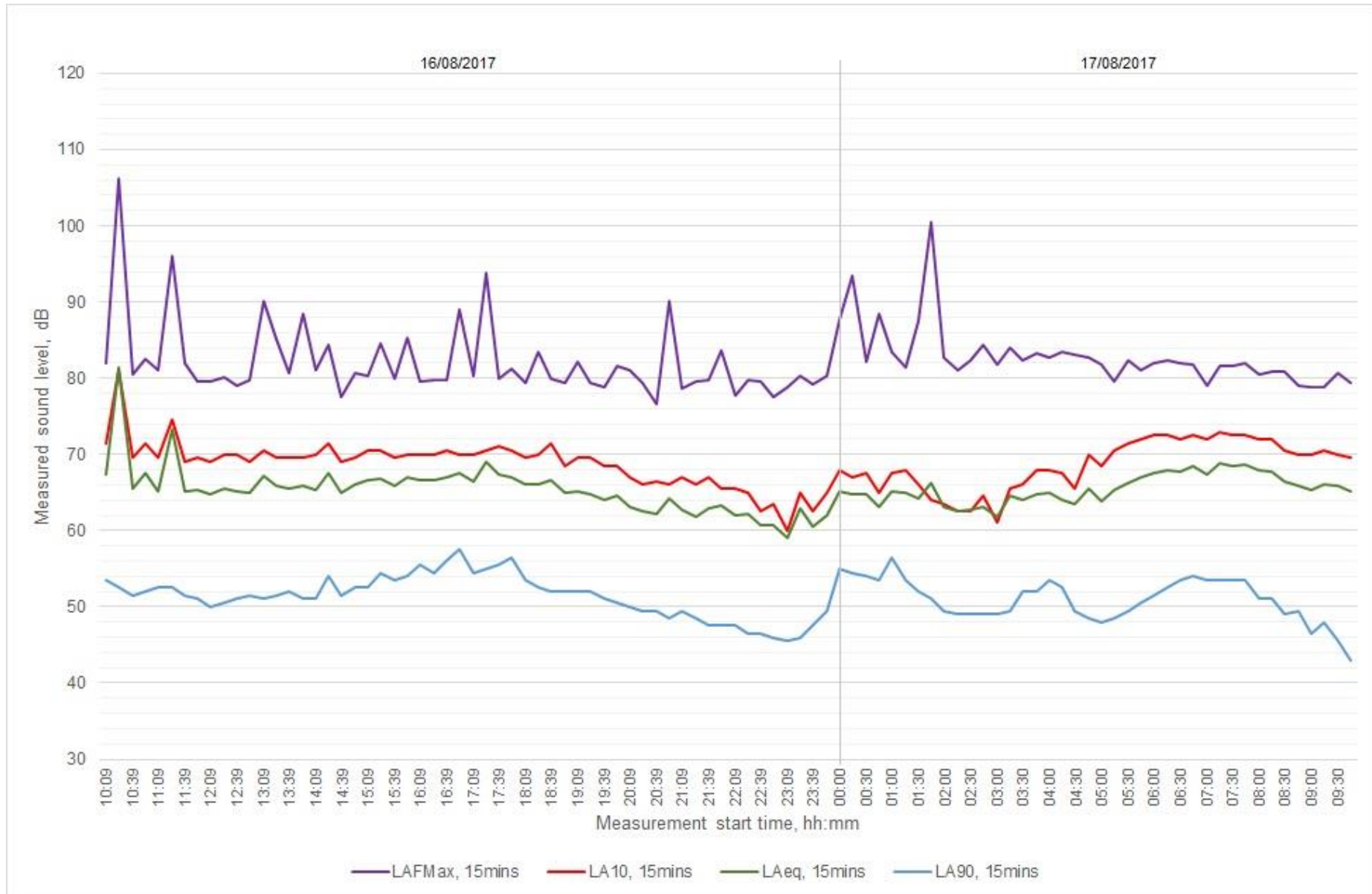
- 1015527-AS-XX(90)1001_S2 – Environmental Noise Mark-Up

Appendix II Logging survey results

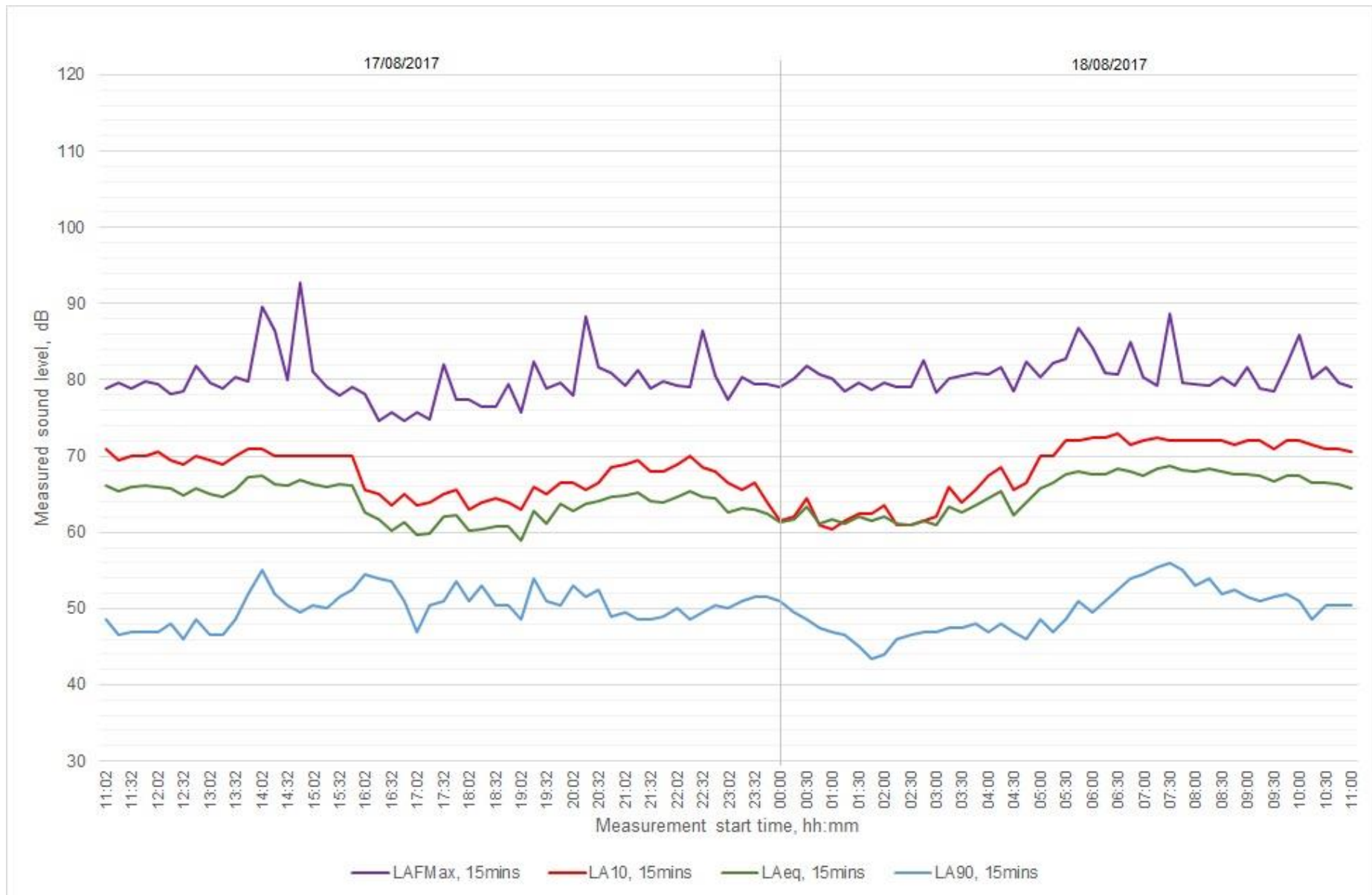
The figures below provide a graphical representation of measured survey data at each logging location (period, T = 15 minutes).

All measurements were taken in free-field conditions and are in dBA.

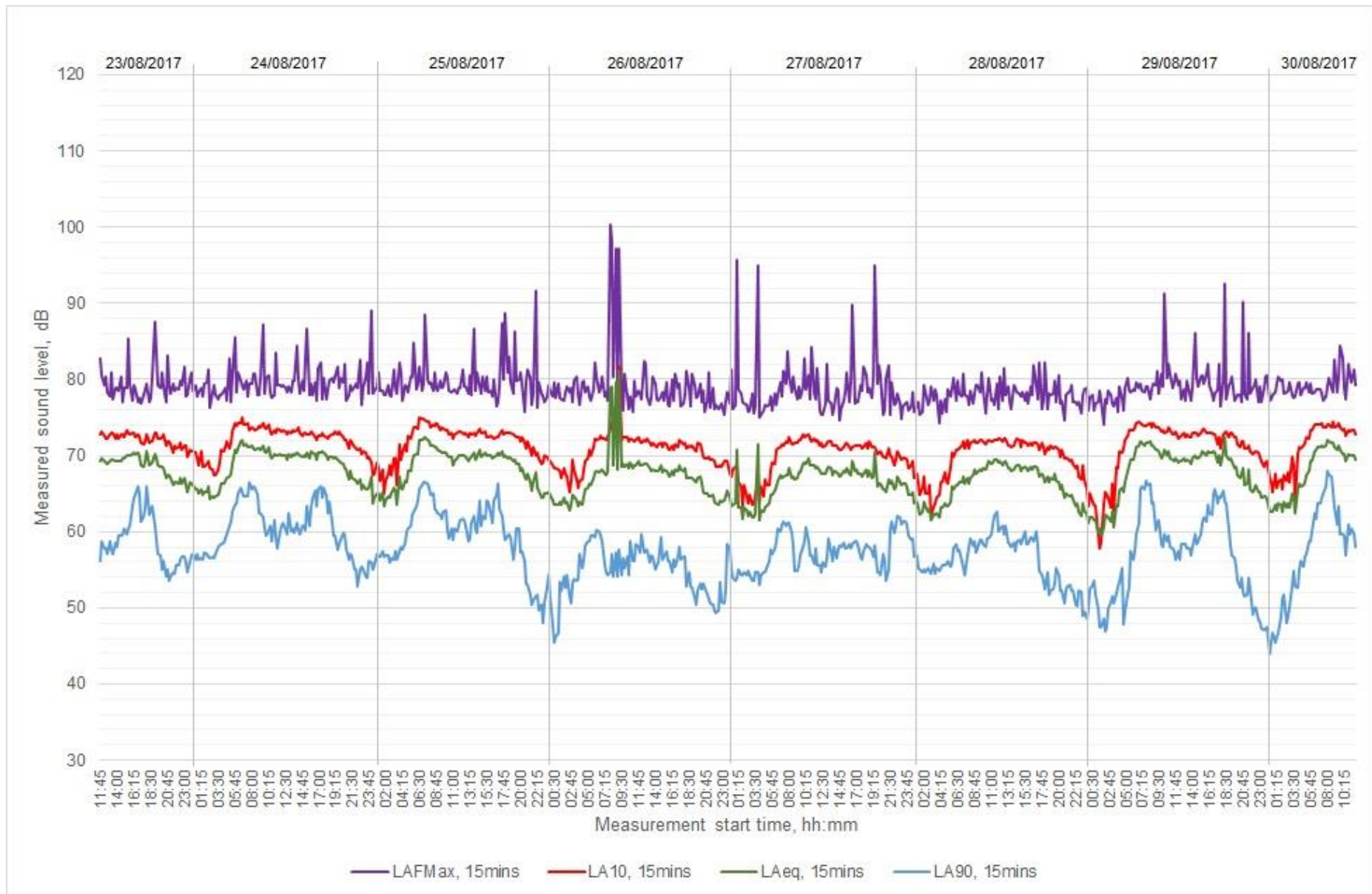
Location MP1: 16th – 17th August 2017



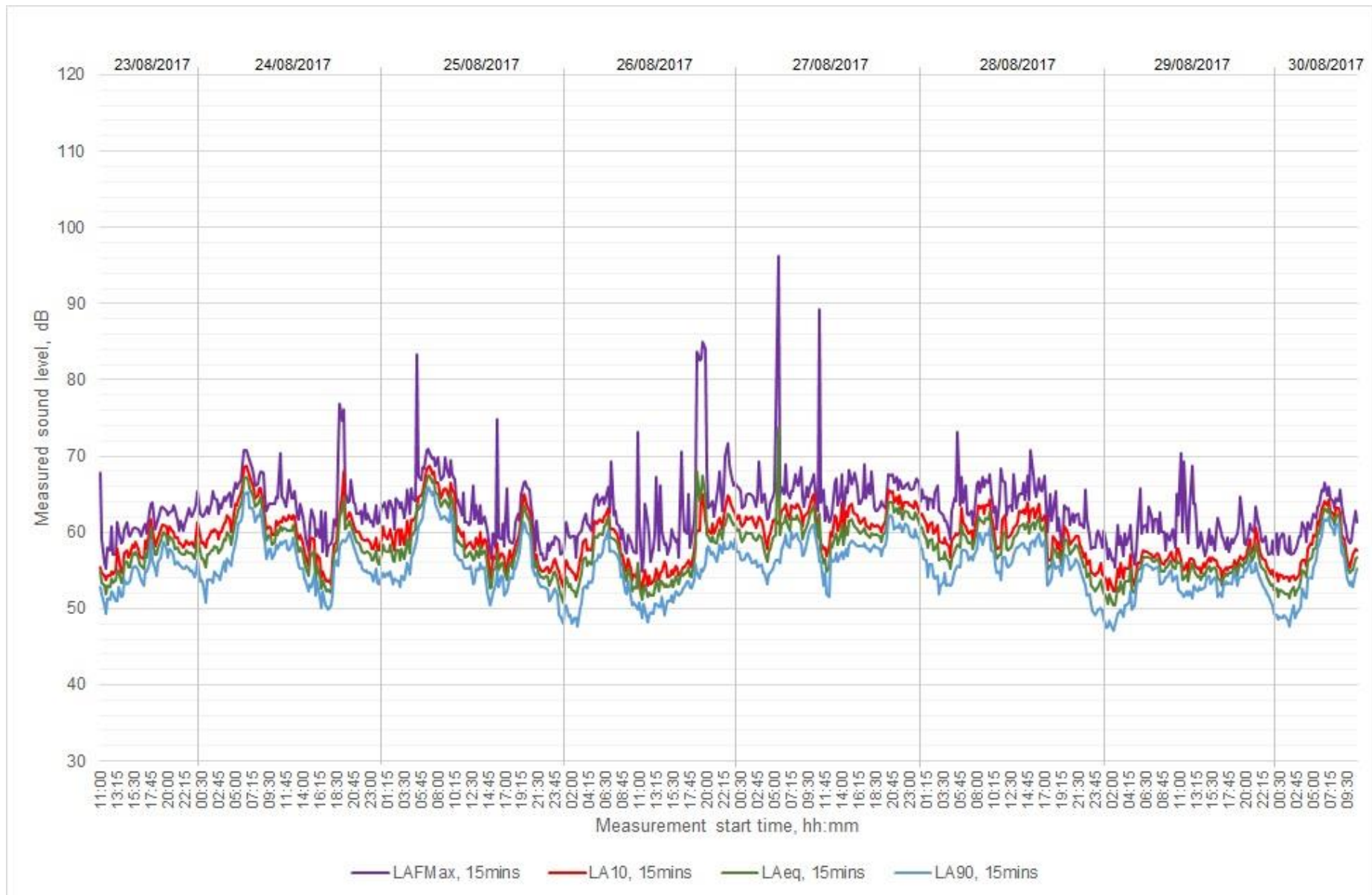
Location MP2: 17th – 18th August 2017



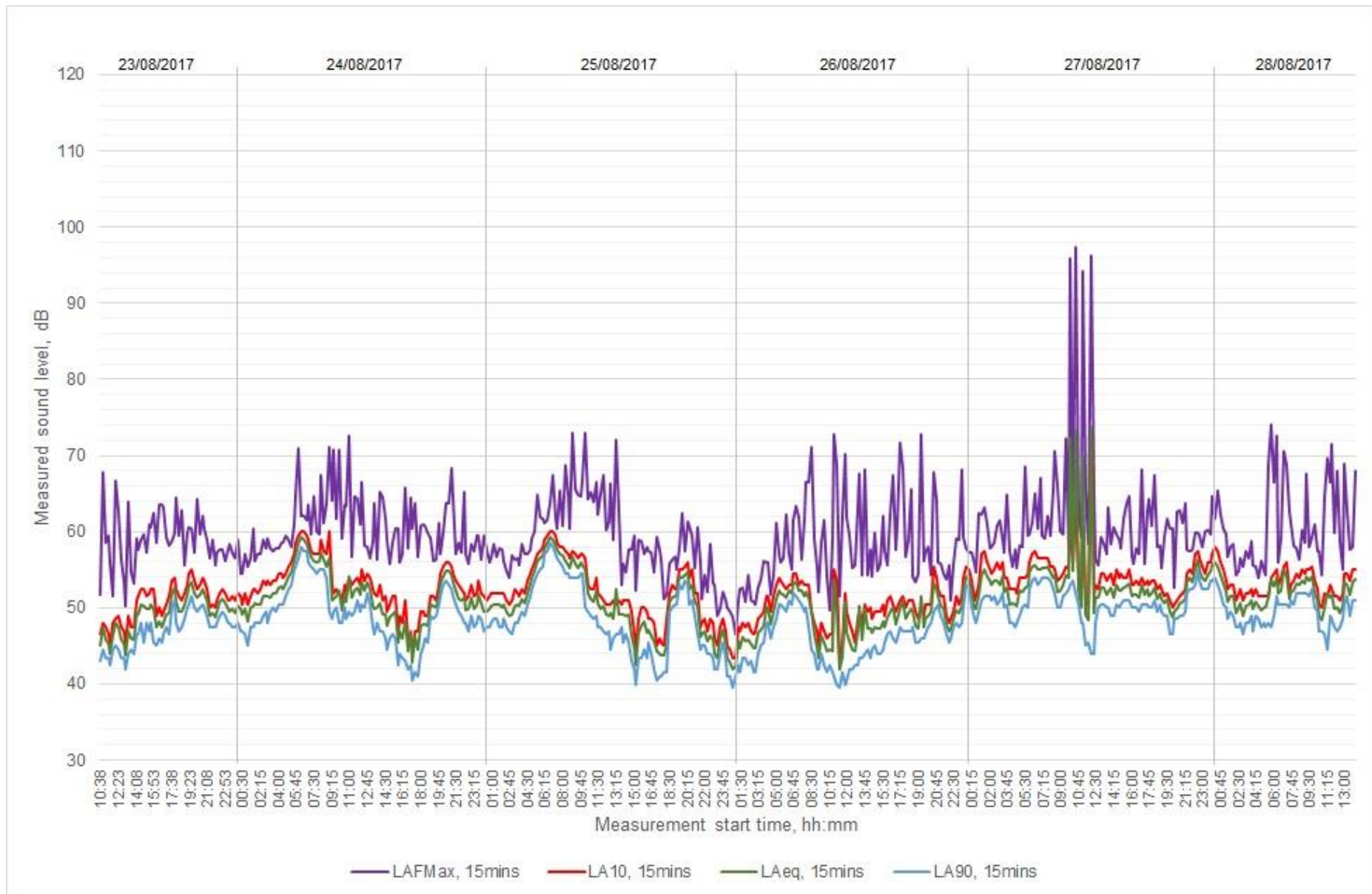
Location MP3: 23rd – 30th August 2017



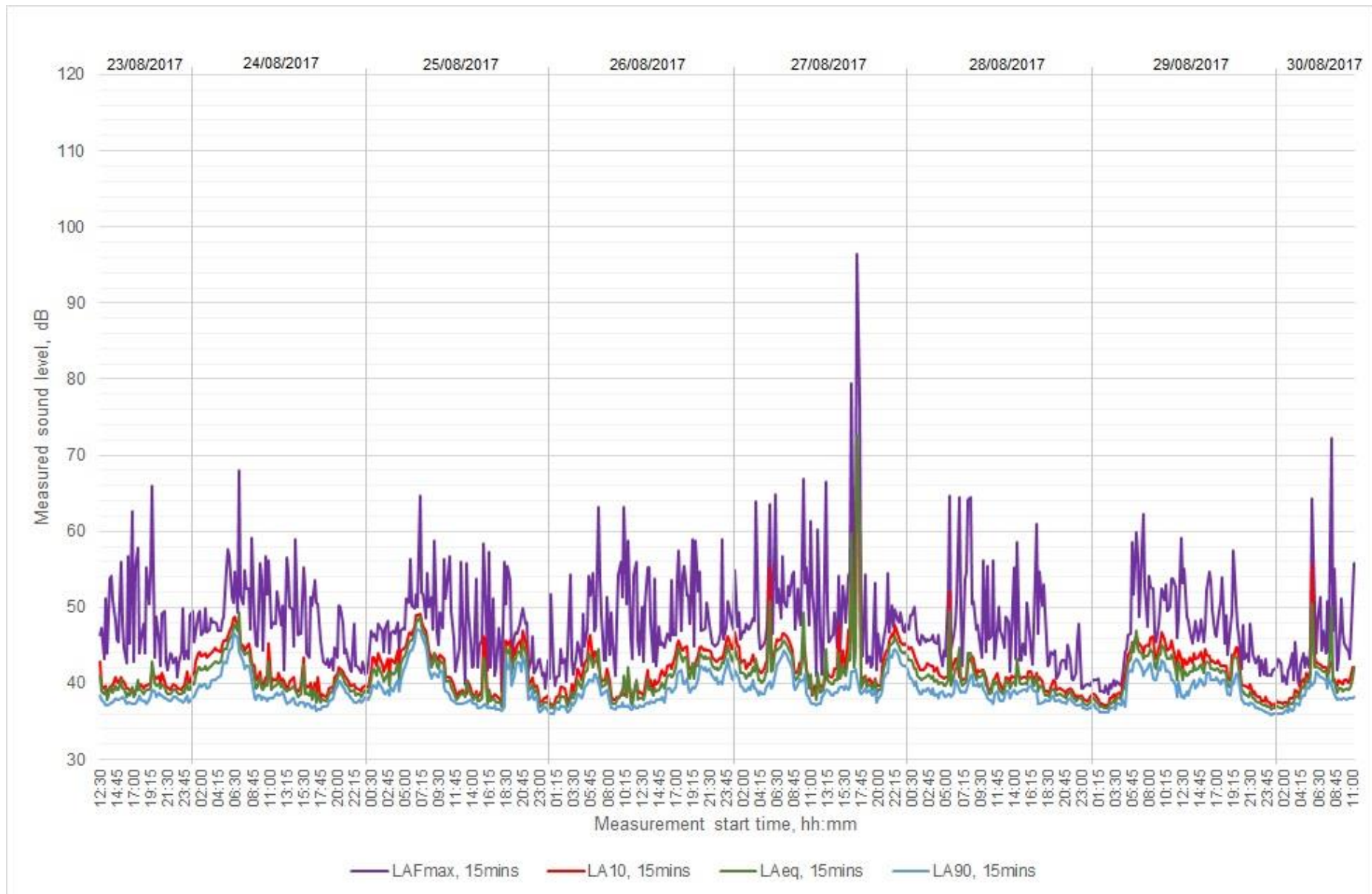
Location MP4: 23rd – 30th August 2017



Location MP5: 23rd – 28th August 2017

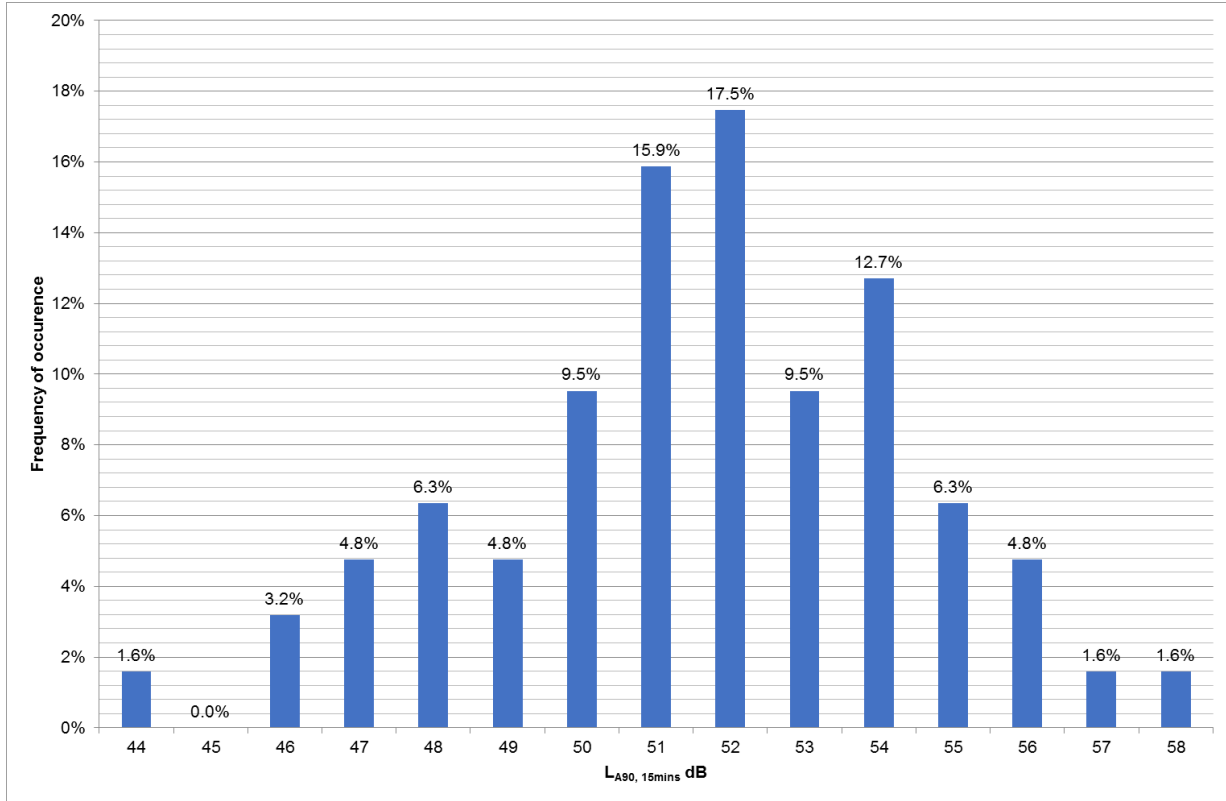


Location MP6: 23rd – 30th August 2017

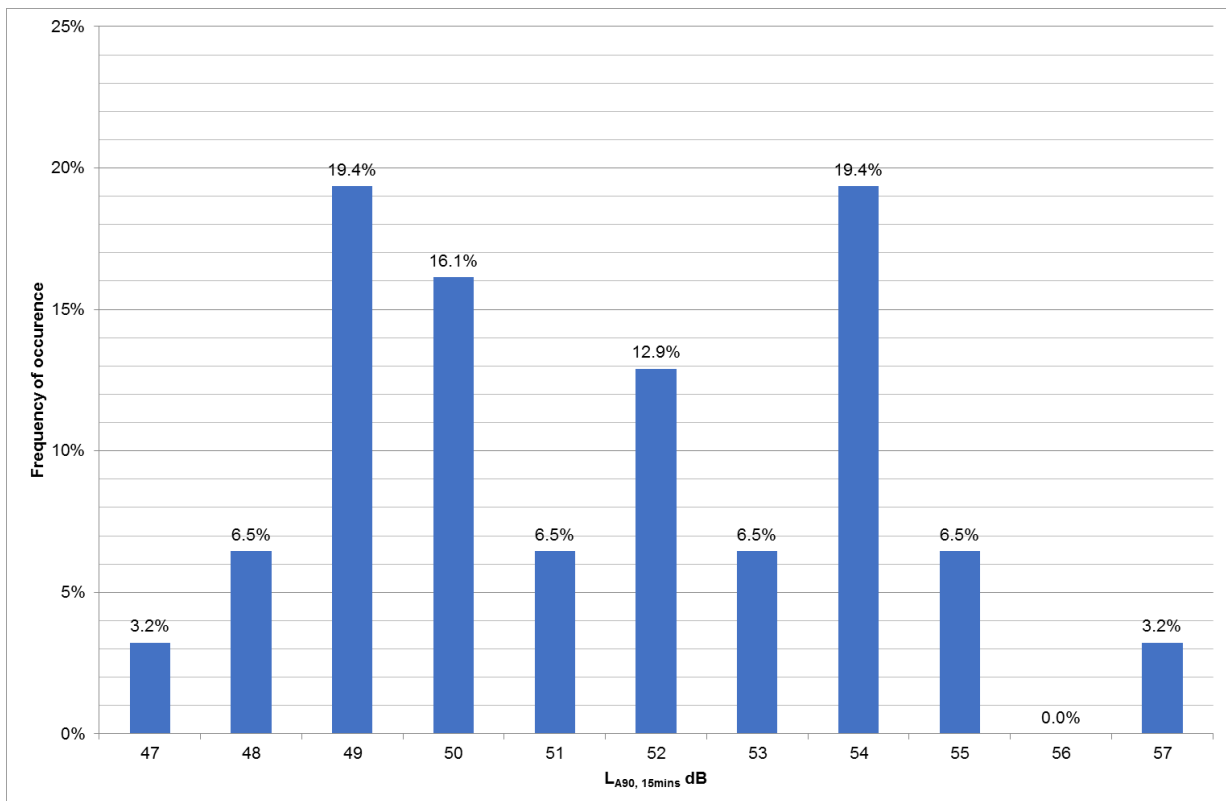


Appendix III Histogram analysis

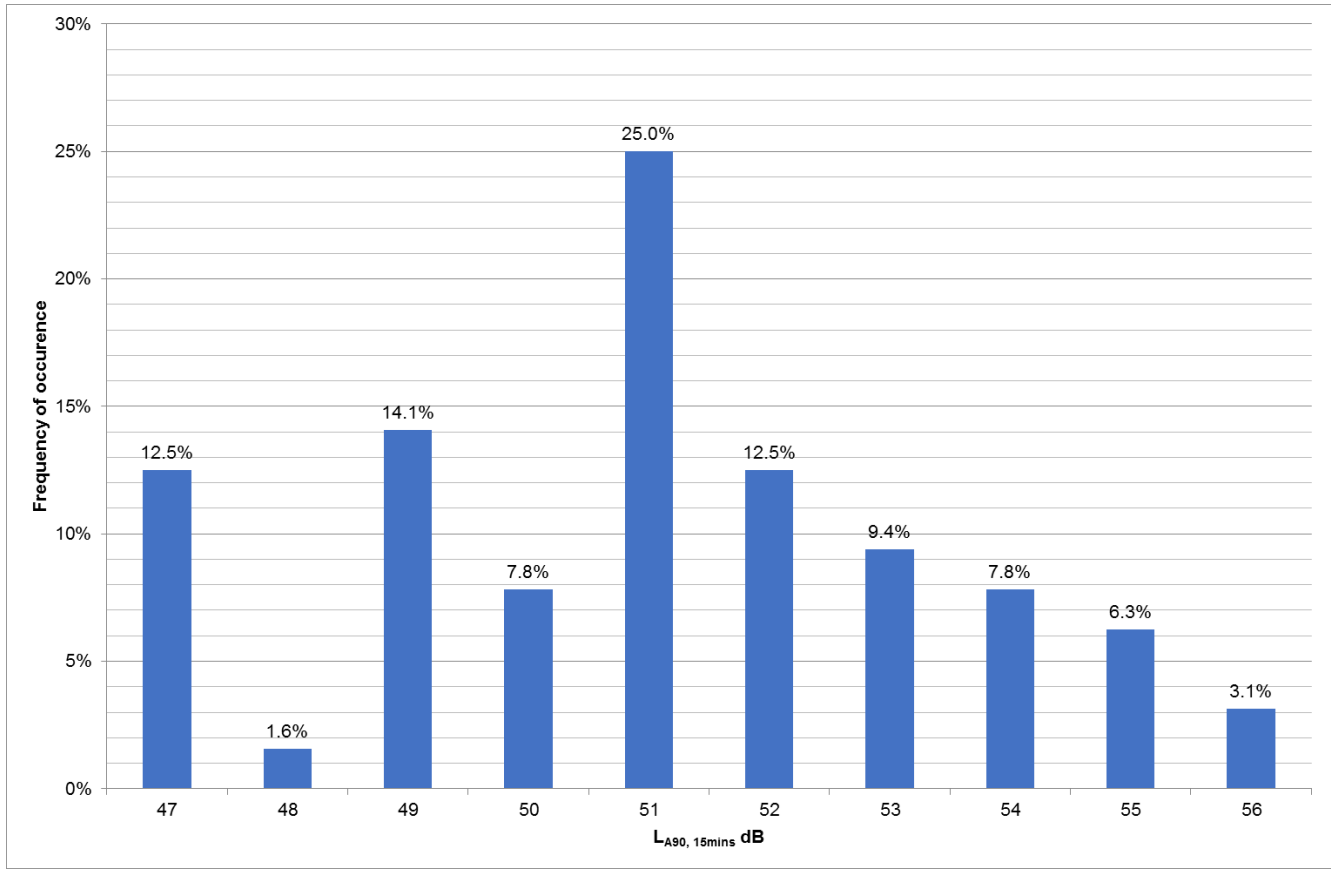
MP1 daytime background sound level distribution (07:00 – 23:00 hrs)



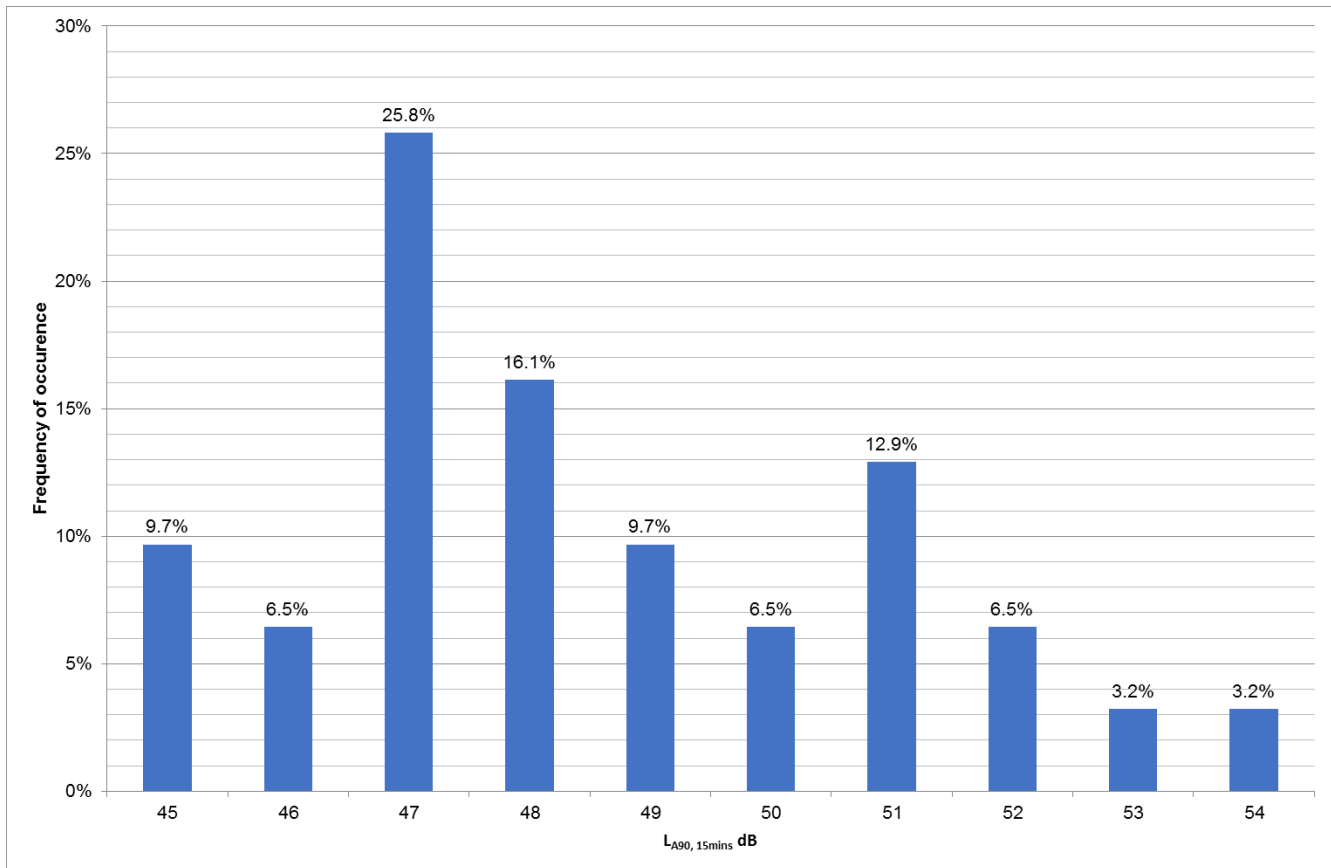
MP1 night-time background sound level distribution (23:00 – 07:00 hrs)



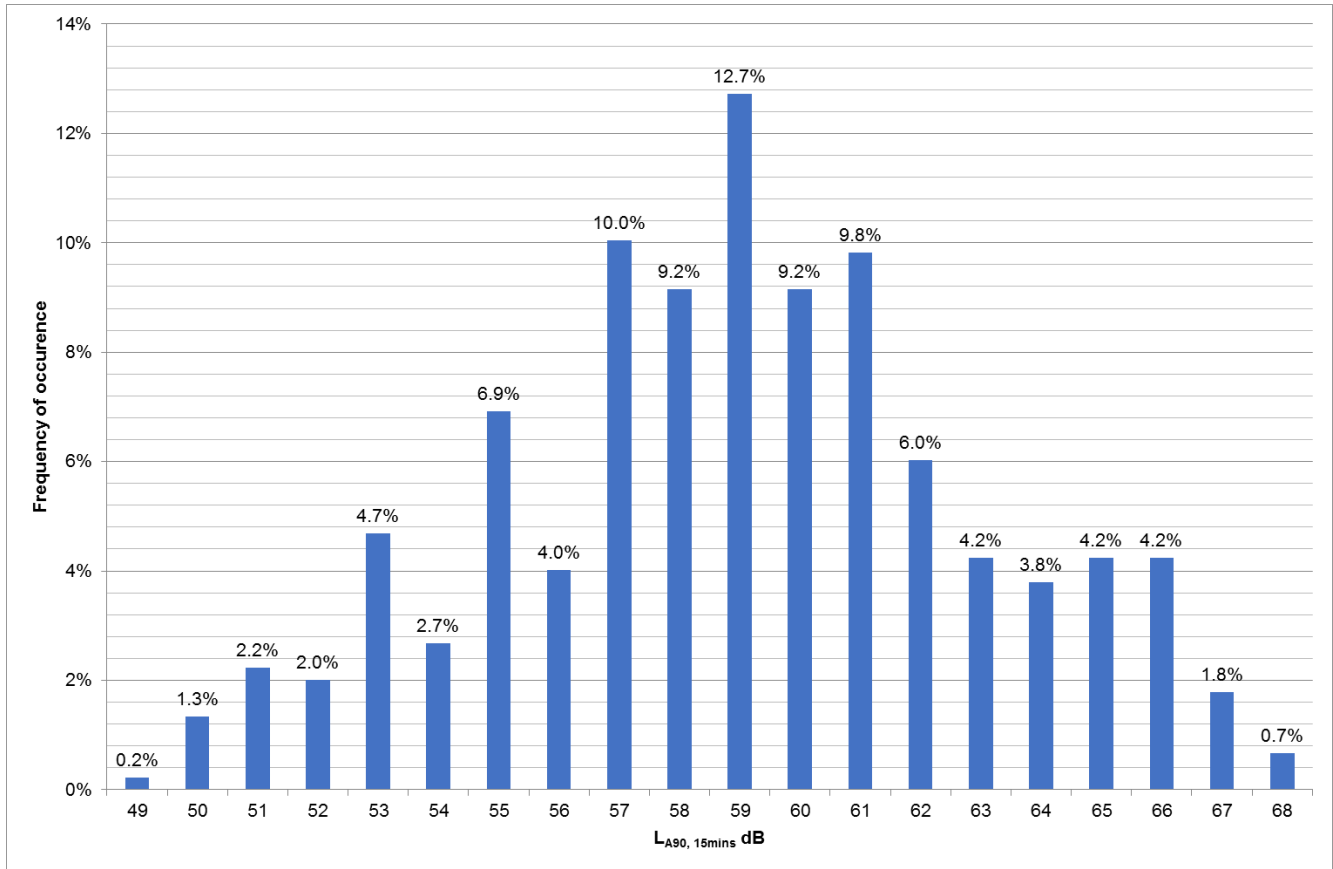
MP2 daytime background sound level distribution (07:00 – 23:00 hrs)



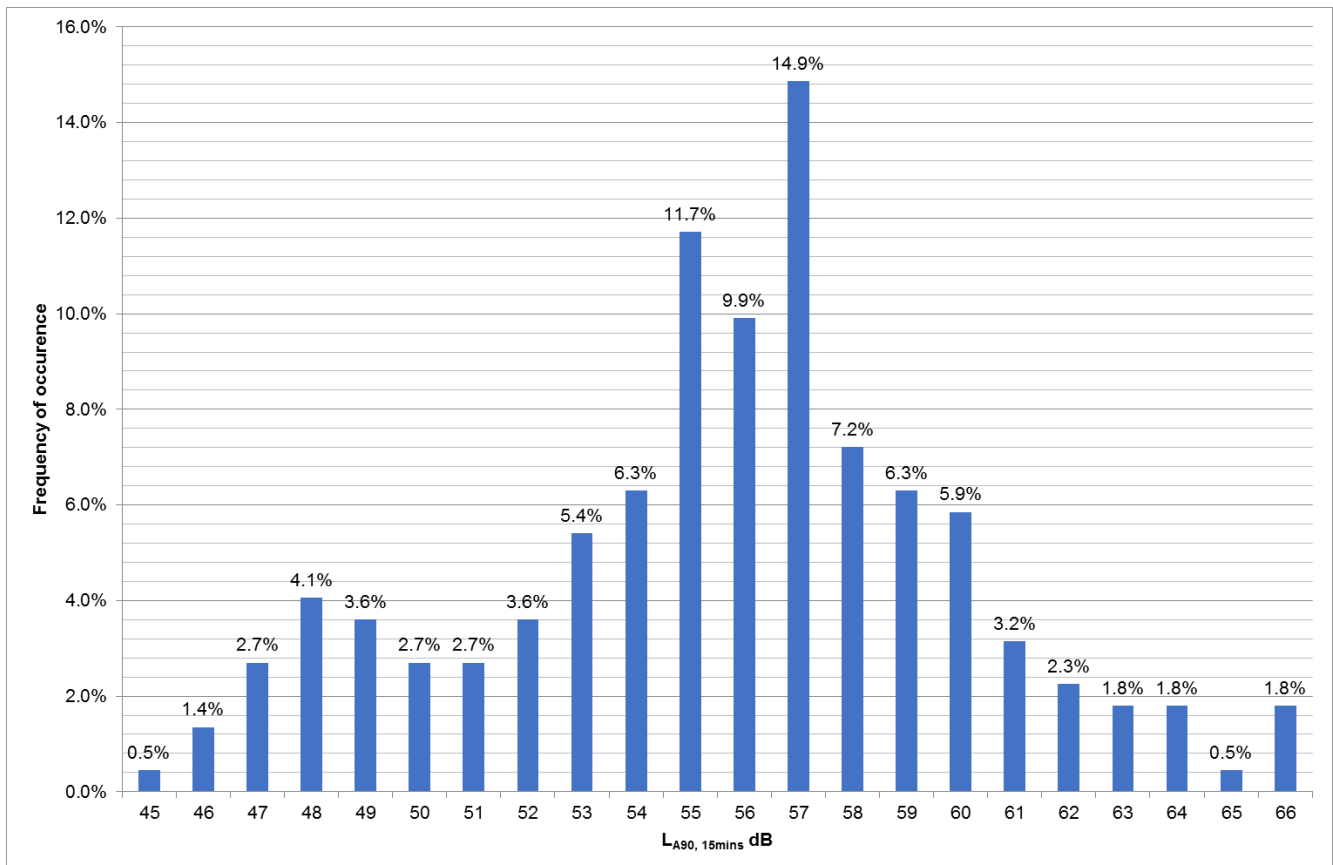
MP2 night-time background sound level distribution (23:00 – 07:00 hrs)



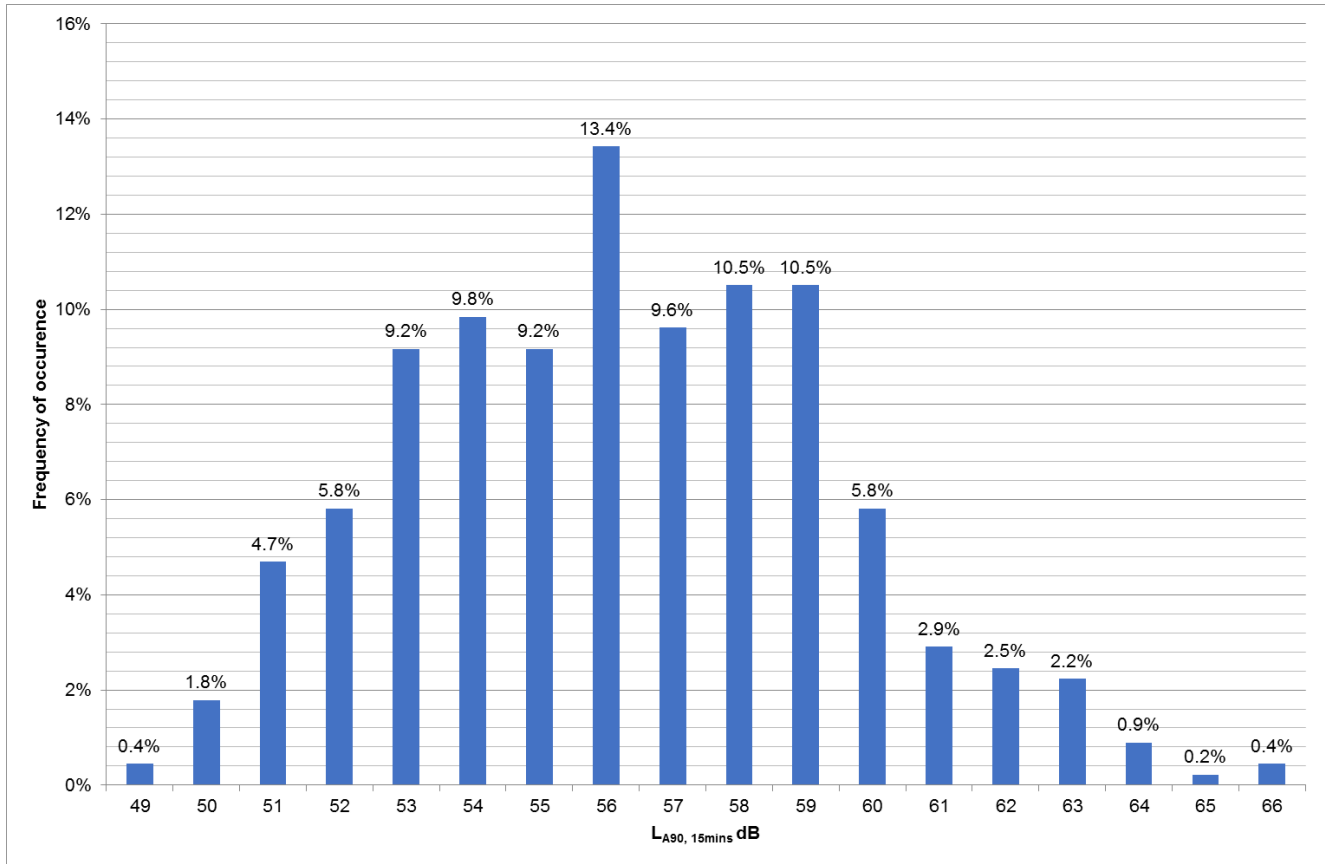
MP3 daytime background sound level distribution (07:00 – 23:00 hrs)



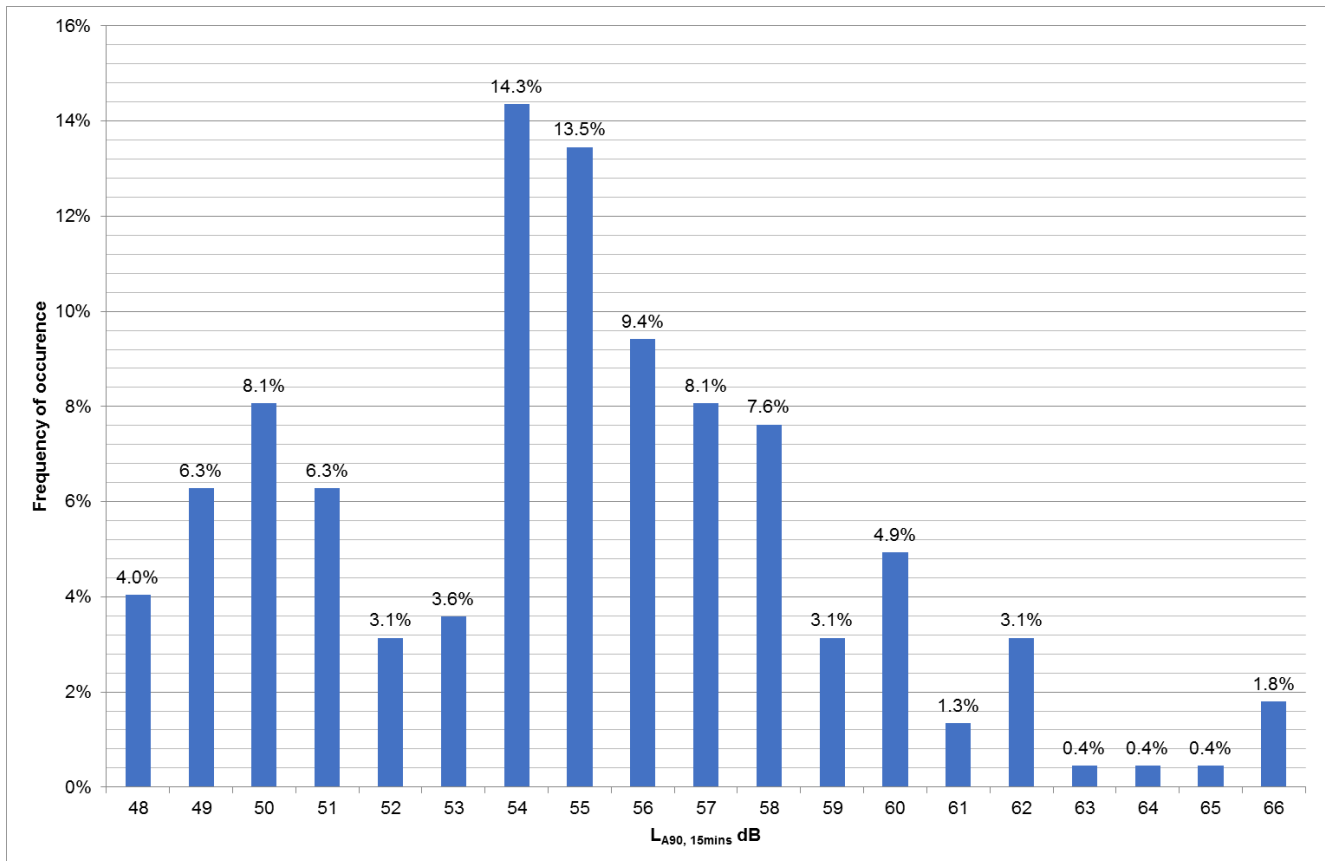
MP3 night-time background sound level distribution (23:00 – 07:00 hrs)



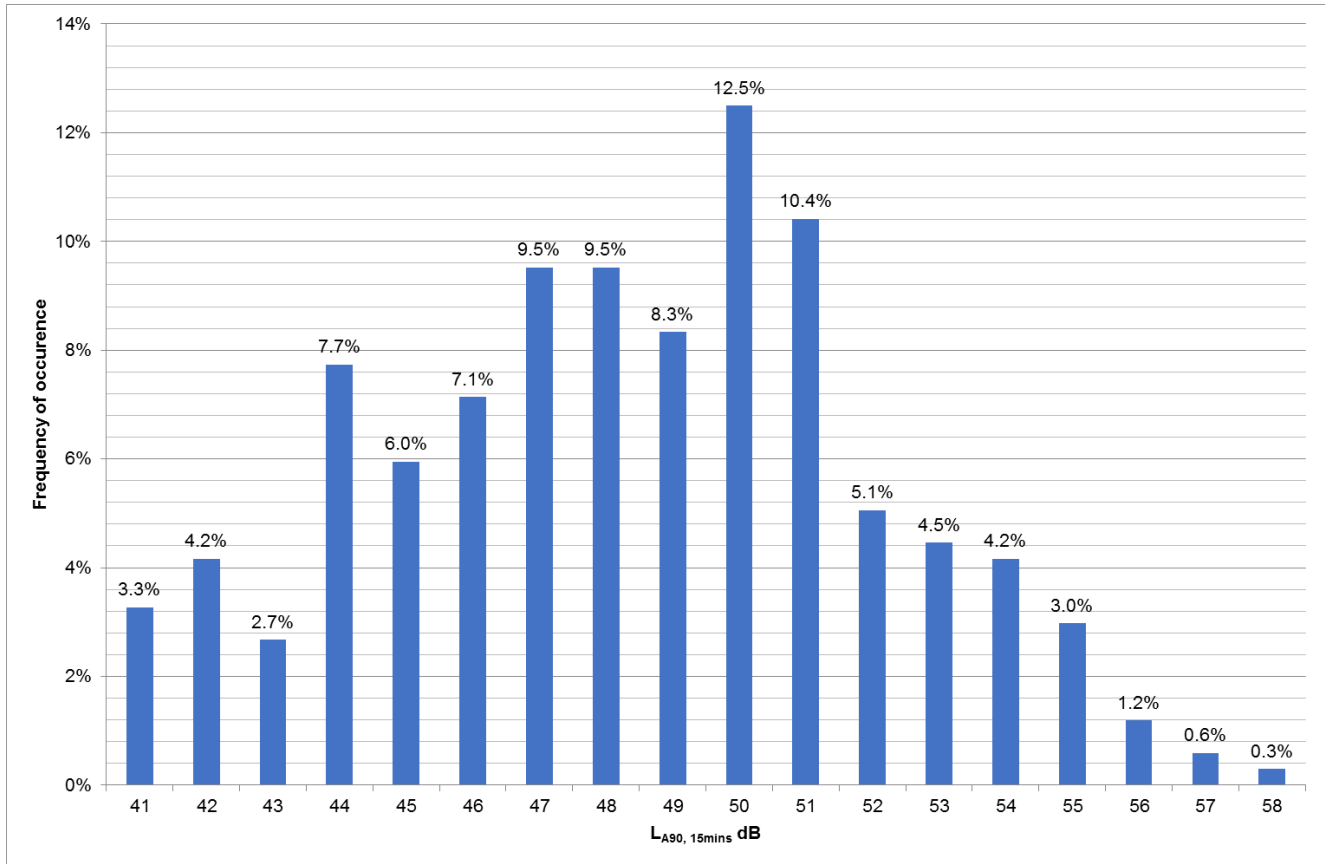
MP4 daytime background sound level distribution (07:00 – 23:00 hrs)



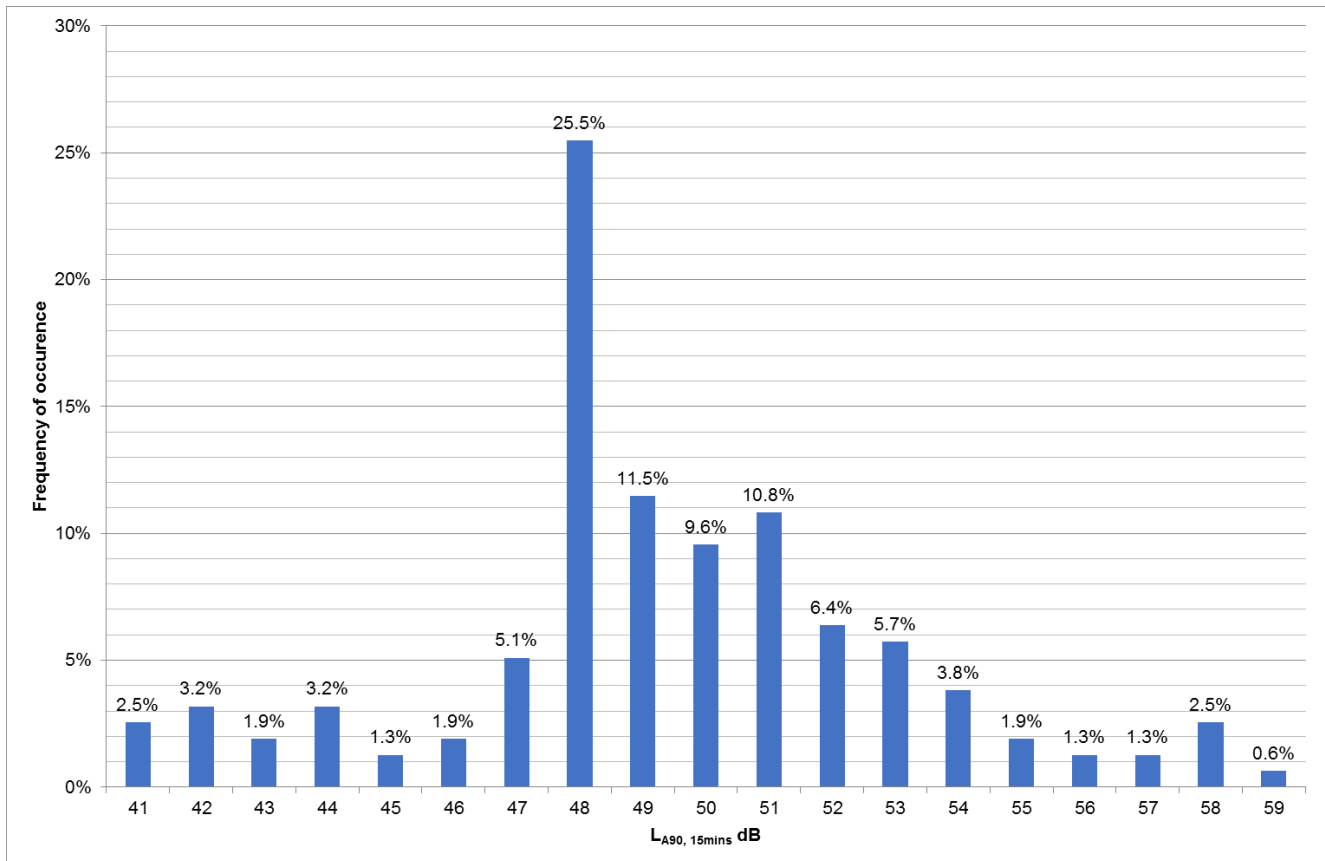
MP4 night-time background sound level distribution (23:00 – 07:00 hrs)



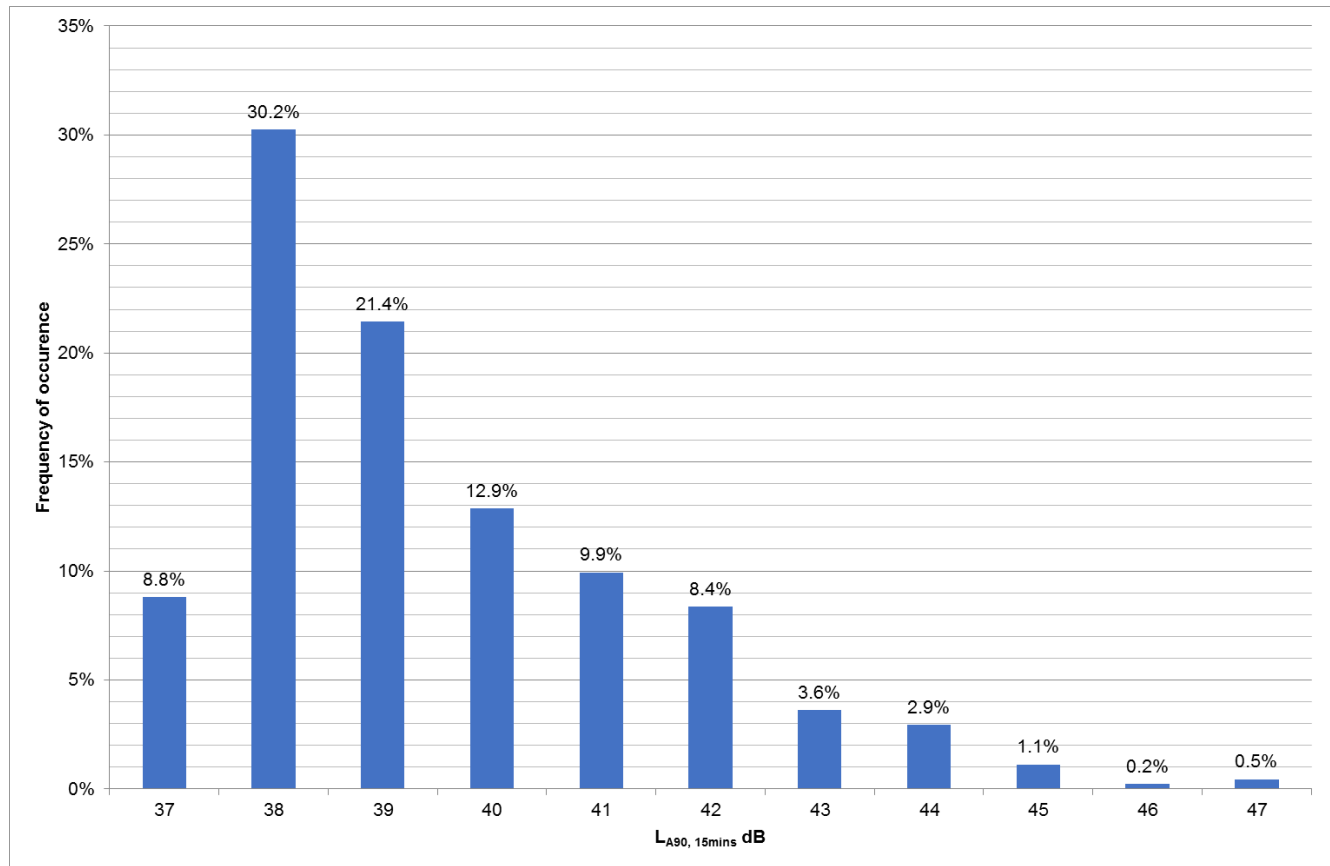
MP5 daytime background sound level distribution (07:00 – 23:00 hrs)



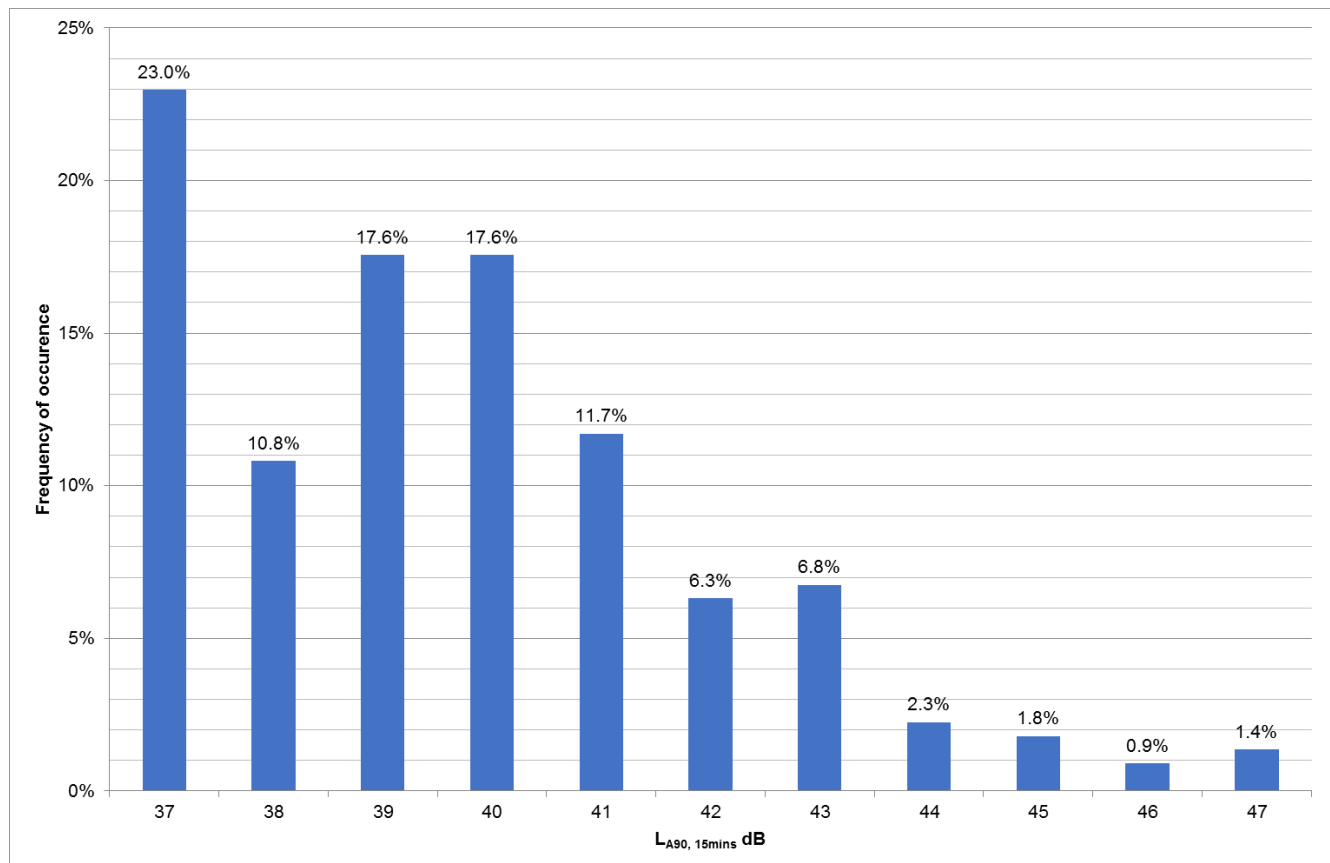
MP5 night-time background sound level distribution (23:00 – 07:00 hrs)



MP6 daytime background sound level distribution (07:00 – 23:00 hrs)



MP6 night-time background sound level distribution (23:00 – 07:00 hrs)



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ES Scoping Appendix 14 – Lighting Baseline Assessment

Warrington Interchange MP

Light Spill Assessment - Baseline Survey Results

First Industrial / Langtree

Job No: 1015524
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Executive Summary

First Industrial / Langtree are proposing to redevelop the area situated within the Warrington Interchange located immediately South East of Warrington. The site safety and security lighting located within the development area will not have an effect on the residential properties to the North or the South of the development, if the lighting techniques highlighted in the ILP Guidance note on the reduction of obtrusive light, 2011 document are adhered to. The use of trees will act as an obstruction to the site and will therefore limit any light spill and sky glow. Careful consideration must be undertaken for any lighting adjacent to Bradley View site and further tree obstructions may be required for the area. It is understood that Bradley Hall Cottages will be removed in line with the masterplan however the properties have been assessed as a receptor point for the baseline review to encompass any future changes.

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1.0

Introduction

1.0 Introduction

Cundall Light4 were commissioned by First Industrial / Langtree to undertake the baseline light spill assessment at the Warrington Interchange site. More specifically, the statement assesses the likely impact of the existing external lighting on the residential buildings and ecology, in the area immediately surrounding the development site. The assessment includes a summary of the existing lighting found within the area to measure the baseline condition.

2.0

Policy Context

2.0 Policy Context

2.1 Legislation

2.1.1 The Planning (Clean Neighbourhoods and Environment) Act 2005

- The legislation governing light pollution is the Planning (Clean Neighbourhoods and Environment) Act 2005. It applies to “artificial light emitted from premises so as to be prejudicial to health or a nuisance”. The relevant section is 102..
- Section 102 defines the premises to which the act applies. Shopping centres, residential properties and offices are not exempt.

2.2 National Planning Policy Framework (March, 2012)

2.2.1 Paragraph 125

- By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

2.2.2 Annex 2

- **Pollution:** Anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light.

2.3 Local Planning Policy

2.3.1 Warrington Borough Council – Supplementary Planning Document, Design and Construction (October 2010)

- Chapter 5 – Sustainable Design and Construction, states that;
- The assessment should show that the proposed design provides adequate lighting to enhance safety during the day and at night
- Chapter 9 – Landscaping in New Development states;
- Provide lighting along footpaths to and through open spaces
- Chapter 17 – Design and Crime, Industrial Estates and Business Parks Development Checklist states that;
- Lighting is directed towards entrances and exit points, car parks and service yards
- Proposed lighting is compliant with British Standard 5489 part 2
- There are no blind spots
- Chapter 17 – Design and Crime, Car Parks Development Checklist states that;
- Parking bays, footpaths, circulation routes and entrance/exit points are all well lit
- Lighting is in accordance with British Standard 5489 part 9

2.4 Industry Standards

2.4.1 Institute of Lighting Professionals (ILP formally the ILE), Guidance note on the reduction of obtrusive light, (GN01:2011)

- The ILP Guidance note sets out the industry standard for numerically measuring, (both through lighting design calculations and on site), the light spill from lighting into windows, sky glow, source luminance and building façade brightness. The ILP guidance note provides illuminance, luminance and percentage figures which must be satisfied both pre-and post curfew for various types of environmental zone classifications. See tables 1 and 2 below.

Zone	Surrounding	Lighting Environment	Examples
E0	Protected	Dark	UNESCO Starlight Reserves, IDA Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, Areas of Outstanding Natural Beauty etc
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Table 1 – Environmental Zones for Obtrusive Lighting Limitations for Exterior Lighting Installations

Environmental Zone	Sky Glow ULR [Max %] ⁽¹⁾	Light Intrusion (into Windows) E _v [lux] ⁽²⁾		Luminaire Intensity I [candelas] ⁽³⁾		Building Luminance Pre-curfew ⁽⁴⁾
		Pre-curfew	Post-curfew	Pre-curfew	Post-curfew	Average, L [cd/m ²]
E0	0	0	0	0	0	0
E1	0	2	0 (1*)	2,500	0	0
E2	2.5	5	1	7,500	500	5
E3	5.0	10	2	10,000	1,000	10
E4	15	25	5	25,000	2,500	25

Table 2 – Obtrusive Lighting Limitations for Exterior Lighting Installations

- The Warrington Interchange site is situated South East of Warrington centre near Lymm. It is within an outer suburban area which allows it to meet with the E2 ‘Rural’ classification of area.

2.4.2 Institute of Lighting Professionals (ILP formally the ILE), BATS Conservation Trust Lighting Guidance (May 2009)

- The Bat Conservation Trust and the ILP produced a paper in 2009, ‘Bats and Lighting in the UK’, discussing the appropriate lighting levels, types of lamps, colour temperatures etc. which are suitable for lighting areas adjacent to bat houses.

2.4.3 Institute of Lighting Professionals (ILP formally the ILE), A Review of the Impact of Artificial Light on Invertebrates (March 2011)

- The Invertebrate Conservation Trust and ILP produced a paper in 2011 which discusses the appropriate lighting levels, types of lamps, colour temperatures etc. and the impact any lighting has on insects and other invertebrates, making recommendations and identifying several further research areas.

2.4.4 Institute of Lighting Professionals (ILP formally the ILE), Lighting Against Crime, A Guide for Crime Reduction Professionals (January 2011)

- Secured by Design and the ILP produced a paper in 2011 conversing an understanding of external lighting and the recommended levels of illumination used to combat crime, the fear of crime and antisocial behaviour. Secured by Design is a police initiative to encourage the building industry to adopt crime prevention measures in the design of developments to assist in reducing the opportunity for crime and the fear of crime, creating a safer and more secure environment.

3.0

Assessment Methodology and Significance Criteria

3.0 Assessment Methodology and Significance Criteria

3.1 The baseline assessment methodology is as follows:

3.1.1 Site Survey

- A site survey will be undertaken to establish the type, height and light distribution of the existing lighting components on and around the site.
- Key receptors will be identified to signal which areas need to be looked at in further detail during the detail lighting design process.

3.1.2 Environmental impacts on wildlife will be identified and a recommendation made on lamp types, colour temperature etc. Consideration of the potential impact of the development.

- A desktop study will be undertaken to understand the building façade designs, their positions in relation to the residential buildings and key routes around and through the site and their likely lighting design requirements, e.g. functional, feature, media etc. From this study the likely impact has been assessed.
- Public realm lighting within the car parks of the development will be evaluated with respect to light spill onto the surrounding areas.

3.1.3 The Lighting Strategy

- A lighting strategy aimed at minimising light spill will be developed during the detailed design phase of the project.

4.0

Key Receptors

4.0 Key Receptors

4.1 The key receptors surrounding the development are listed below.

It is assumed that each of these receptors may be impacted by light spill from the proposed Warrington Interchange site development, and as a result could be detrimental to the existing environment. The receptors that are the subject of this chapter as per Figure 1 are;

- Grappenhall Lodge
- Cartridge Lane Dwelling
- Bradley Hall Cottages
- Bradley View
- Howshoote Farm
- M6 Motorway
- Barleycastle Lane dwellings x 2

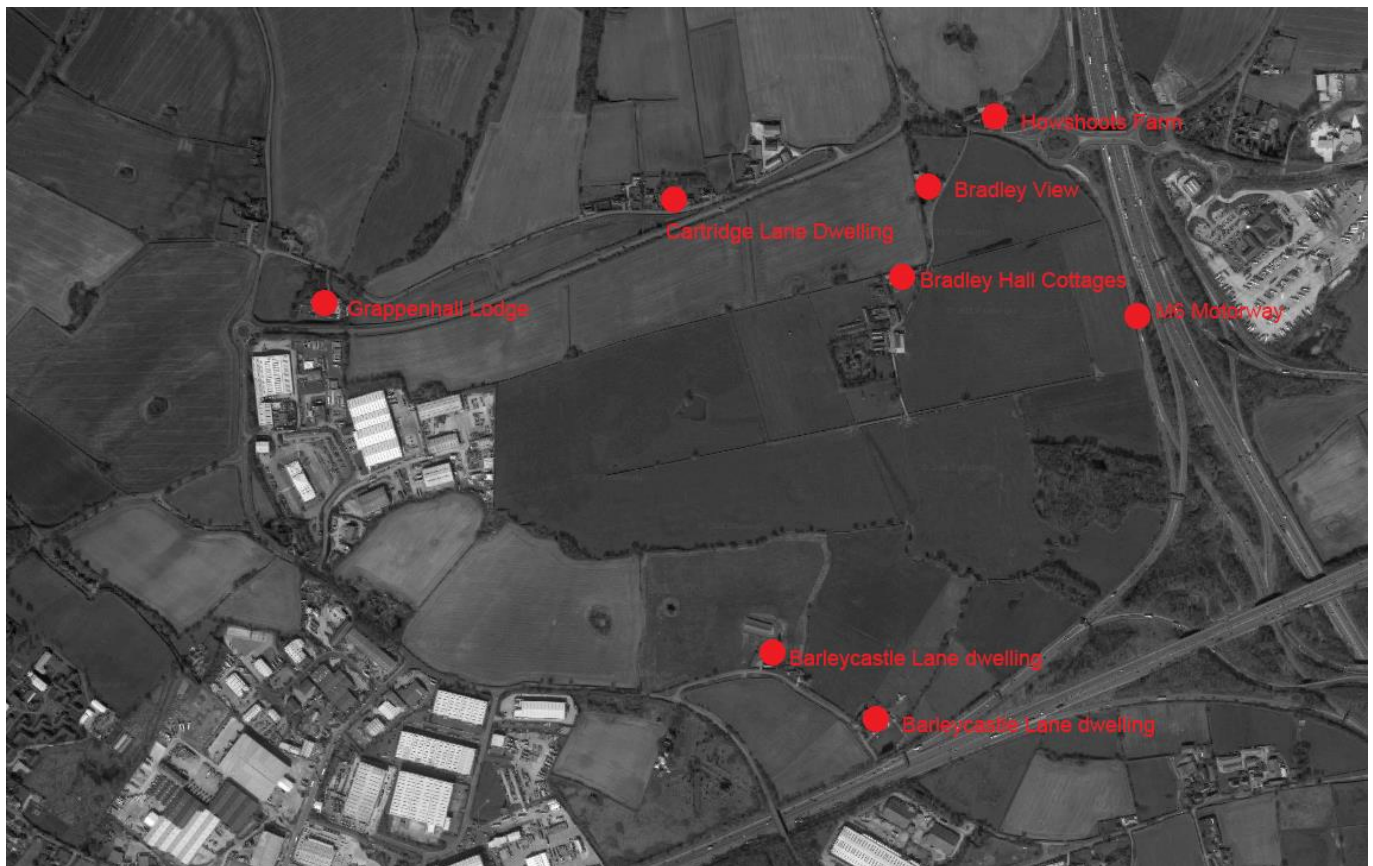


Figure 1

5.0

Baseline Conditions

5.0 Baseline Conditions

- Cundall Light 4 carried out a site survey between 8.00 and 12.00 on the 16th August 2017. The survey included a study of the existing site and any lighting around the perimeter of the development area.
- There is currently no existing lighting system in place on site and so Cundall Light4 spent their time on site noting each of the receptors and how they may be affected by future light spill.

The residential property at Grapenhall Lodge cannot be viewed from the current site due to the dense number of trees in the area, see Figure 2. Therefore it can be assumed that Grapenhall Lodge will not be affected by any light spill if the lighting techniques highlighted in the ILP Guidance note on the reduction of obtrusive light, 2011 document are adhered to.



Figure 2

The residential dwellings adjacent to the development on Cartridge Lane can be viewed from the current site. There is a reduced number of trees in the area, see Figures 3 and 4. Therefore it can be assumed that currently, the residential dwelling would be affected by a small percentage of light spill.



Figure 3



Figure 4

Within the development site is the residential dwellings of Bradley Hall cottages and farm, see Figures 5 and 6. It has currently been confirmed that the cottages will be removed from the masterplan however to encompass any future changes that may take place, a baseline assessment has taken place. Care must be taken upon any surrounding lighting so as not to exceed the recommended light trespass onto the windows. Currently there are a number of lighting columns already installed in close proximity to the cottages, see Figure 7. The use of additional trees may be required to block any light spill due to the low-level hedges that are currently in place and will not provide any obstructive views. However, it can therefore currently be assumed that the residential dwellings of Bradley Hall cottages would be affected by a percentage of light spill, as a number of the cottages are currently already affected by a minor percentage of light spill from the existing columns.



Figure 5



Figure 6



Figure 7

The residential dwelling within Bradley View requires extra precaution with any adjacent lighting. The house and gardens are currently viewable from the West and East directions with minimal surrounding trees, see Figures 8 and 9. Therefore it can currently be assumed that the residential dwelling within Bradley View would be affected by a percentage of light spill.



Figure 8



Figure 9

Howshoots Farm is the adjacent property to the North East of the site, see Figure 10. There is currently a sparse number of trees populating the area and so it can be assumed that Howshoots Farm would be affected by a small percentage of light spill.



Figure 10 – view from site towards the adjacent road and Howshoots Farm

The M6 motorway runs adjacent to the East of the development, see Figure 11. Currently there is a minor percentage of light spill around the site adjacent to the motorway. Care must be taken upon any surrounding lighting so as not to cause glare to drivers. The use of additional trees may be required to block any light spill both onto the motorway and onto the site, however it can therefore currently be assumed that the M6 motorway would be affected by a percentage of light spill.



Figure 11 – M6 motorway to the left

To the South of the development site is two residential dwellings on Barleycastle Lane, see Figures 12 and 13. There is a reduced number of trees in the area. However with the distance from the dwellings to the site it can be assumed that the residential dwellings would not be affected by a small percentage of light spill.



Figure 12



Figure 13

The ILP Guidance note on the reduction of obtrusive light, (2011) document, states that in the category E2 (Low district brightness areas), the light trespass into windows should not exceed 5lux pre-curfew and 1lux post-curfew. There is currently no light trespass on the residential windows from the site

6.0

Summary

6.0 Summary

- There is no existing lighting at the Warrington Interchange development site, therefore there is currently no contribution to light spill to the surrounding roads and residential building.
- There is minor light spill onto the site from the M6 motorway.
- The site, in its current state will pass the ILP Institute of Lighting Professionals, Guidance note on the reduction of obtrusive light, (GN01:2011).

7.0

Conclusion

7.0 Conclusion

- The lighting design discussion within this report refers to the site known as Warrington Interchange
- If the lighting techniques highlighted in the ILP Guidance note on the reduction of obtrusive light, 2011 document are used, the site safety and security lighting located within the development area will not have an effect on the adjacent residential properties to the North and South of the development
- If the lighting techniques highlighted in the ILP Guidance note on the reduction of obtrusive light, 2005 document are used, the site safety and security lighting located within the development area will not have an effect on the adjacent M6 Motorway to the East of the development
- The use of trees as an obstruction to the site will limit any light spill and sky glow
- Careful consideration must be undertaken for any lighting adjacent to the Bradley Hall Cottages, if they remain, and Bradley View site. Further tree obstructions may be required for the area.

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ES Scoping Appendix 15 – Glossary and Abbreviations

Abbreviations

A a

AADT	Annual Average Daily Traffic
AAWT	Average Annual Weekday Traffic
ABI	Annual Business Inquiry Data
ACM	Asbestos Containing Materials
ADF	Average Daylight Factor
AGL	Above Ground Level. A measurement of altitude above a specific land mass.
AOD	Above Ordnance Datum
APSH	Annual Probable Sunlight Hours
APZ	Archaeological Priority Zone
AQAP	Air Quality Action Plan
AQMA(s)	Air Quality Management Area(s)
AQS	Air Quality Strategy
AVR	Accurate Visual Representations

B b

BAME	Black, Asian and Minority Ethnic
BAP	Biodiversity Action Plan
BGS	British Geological Survey
BMT	BMT Fluid Mechanics Limited. Wind Microclimate specialist consultant
BRMC	Biodiversity Recording and Monitoring Centre
BS	British Standard
BSI	British Standard Institute

BT	British Telecom
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BUG	Bicycle User Groups

C c

CCTV	Closed Circuit Television
CEMP	Construction Environmental Management Plan
CFD	Computational Fluid Dynamics
CIRIA	Construction Industry Research and Information Association
CLEA	Contaminated Land Exposure Assessment
CLP	Construction Logistics Plan
CLR	Contaminated Land Report
CMS	Construction Management System
CMSC	Construction Management System Contractor
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COCP	Code of Construction Practice
COP	Code of Practice
CPZ	Controlled Parking Zone
CRN	Calculation of Rail Noise
CRTN	Calculation of Road Traffic Noise
CS	Core Strategy
CWS	County Wildlife Site

D d

dB	Decibel
dBA	The unit of noise measurement (measured on a logarithmic scale), which expresses the loudness in terms of decibel (dB) scale and the frequency factor
DCLG/CLG	Department for Communities and Local Government
DDA	Disability Discrimination Act
DEFRA	Department for Environment, Food and Rural Affairs
DETR	Department of Environment, Transport and the Regions (now Department for Transport)
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DoE	Department of Environment
DoT	Department of Transport
DPD	Development Plan Document

E e

EA	Environment Agency
EAPPG	Environment Agency Pollution Prevention Guidelines
EDBP	Economic Development Business Plan
EH	English Heritage
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMSE	Environmental Management Act 1990
Environmental Management	

StrategyPA	
EN	English Nature
EPS	European Protected Species
EQS	Environmental Quality Standard
ES	Environmental Statement
EU	European Union

F f

FRA	Flood Risk Assessment
FE	Form of Entry – cohorts of 30 children
FTE (Jobs)	Full Time Equivalent (Jobs)

G g

GDP	Gross Domestic Product. A measure of the national economic performance.
GEA	Gross External Area
GIA	Gross Internal Area
GP	General Practitioner
GQA	General Quality Assessments
GVA	Gross Value Added

H h

Ha	Hectare
HDV(s)	Heavy Duty Vehicle(s)
HER	Historic Environment Record
HGV(s)	Heavy Goods Vehicle(s)
HSMS	Health and Safety Management System
HVAC	Heating, Ventilation, Air Conditioning
HWR	Hazardous Waste Regulations 2005
Hz / kHz	Hertz / Kilohertz

I i

ICE	Institute of Civil Engineers
IDP	Infrastructure Delivery Plan
IEA	Institute of Environmental Assessment
IEEM	Institute of Ecology and Environmental Management
IEMA	Institute of Environmental Management and Assessment
IHT	Institute of Highways and transportation
IMD	Index of Multiple Deprivation

J j

JMP	Inclusive Access Consultants
JSA	Job Seekers Allowance
JSNA	Joint Strategic Needs Assessment

K k

Kg	Kilogram
KS1	Key Stage 1 – Primary education between years 1-2
KS2	Key Stage 2 – Primary education between years 3-6
Kw	Kilowatt

L l

LA10	The noise level exceeded for 10% of the measurement time
LAeqT	Equivalent continuous sound level
LAQM	Local Air Quality

	Management
LDF	Local Development Framework
LDV	Light Duty Vehicles
LEZ	Low Emission Zone
LGV	Light Goods Vehicle
LNR	Local Nature Reserve
LoWR	List of Waste Regulations
LPA	Local Planning Authority
LSOAs	Lower Super Output Areas
LW	Long Wave

M m

m	Metre
m ²	Square metres
m ³	Cubic metres
MAGIC	Multi-Agency Geographic Information for the Countryside
mm	millimetres
MMP	Materials Management Plan
MNL	Music Noise Level
MOL	Metropolitan Open Land
m/s	Metres per second

N n

NAQS	National Air Quality Strategy
NE	Natural England
NEC	Noise Exposure Category
NGR	National Grid Reference
NHBC	National House Building Council
NHS	National Health Service
NIA	Net Internal Area
NMR	National Monuments Record
NNR	National Nature Reserve
No ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxide
NPPF	National Planning Policy

	Framework
NPS	National Planning Statement (NN NPS National Networks National Planning Statement)
NSCA	National Society for Clean Air
NTS	Non-Technical Summary

O o

ONS	Office of National Statistics
OS	Ordnance Survey

P p

PAH(s)	Polycyclic Aromatic Hydrocarbons
PAL	Published Admissions Limit
PANs	Published Admissions Numbers
PCBs	Polychlorinated Biphenyls
PCT	Primary Care Trust
PERS	Pedestrian Environment Review System
PIA	Personal Injury Accidents
PPE	Personal Protective Equipment
PPG	Planning Policy Guidance
PPPL	Primary Place Planning Location
PPS	Planning Policy Statement
PTAL	Public Transport Accessibility Level
PV	Photovoltaics

Q q

R r

R&A	Review and Assessment
RC	Reinforced Concrete
RF	Radio Frequency
RPG	Registered Park and Garden

S s

SAC	Special Areas of Conservation
SAM	Scheduled Ancient Monument
SAP	Species Action Plan
SFRA	Strategic Flood Risk Assessment
SHMA	Strategic Housing Market Assessment
SIC	Standard Industrial Classification
SIL	Strategic Industrial Land
SINC	Site of Importance for Nature Conservation
SMR	Sites and Monuments Records
SNCI	Sites of Nature Conservation Importance
SO ₂	Sulphur dioxide
SOC	Standard Occupational Classification
SPA	Special Protection Area
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage System
SVOCs	Semi Volatile Organic Compounds
SWMP	Site Waste Management Plan

T t

T	Total Annual Probable Sunlight Hours (APSH)
TA	Transport Assessment
TfL	Transport for London
TG	Technical Guidance
TPH	Total Petroleum Hydrocarbons
TPO	Tree Preservation Order

U u

UDP	Unitary Development Plan
UK	United Kingdom
UK BAP	United Kingdom Biodiversity Action Plan
USA	Updating and Screening Assessment
UXO	Unexploded Ordnance

V v

VCM	Volatile Correction Model
VOCs	Volatile Organic Compounds
VSC	Vertical Sky Component

W w

WFD	Water Framework Directive
WHO	World Health Organisation
WM	Winter Months Component of APSH
WRA	Water Resources Act 1991
WW	First World War
WWII	Second World War

X x

Y y

Z z

Glossary of Terms

A a

Adoption - the final confirmation of a plan as a statutory document by the local planning authority.

Affordable Housing - low cost housing for sale or rent, often from a housing association, to meet the needs of local people who cannot afford accommodation through the open or low cost market, or subsidised housing.

Aged or veteran tree: A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally.

Agricultural Dwelling - a dwelling which is subject to a condition or legal agreement that it shall only be occupied by someone who is employed or was last employed solely or mainly in agriculture, forestry or other appropriate rural employment.

Air Quality Management Areas: Areas designated by local authorities because they are not likely to achieve national air quality objectives by the relevant deadlines.

Alternative option/solution. Alternative methods of achieving the objectives of the project. They may include: alternative locations that are suitable; or different approaches in terms of design, manufacturing, transportation, energy, or supply of materials etc.

Ambient: Background levels

Amenity - the pleasant or normally satisfactory aspects of a location which contribute to its overall character and the enjoyment of residents or visitors.

Anemometer. Measures the wind speed and transmits wind speed data to the controller.

Ancient woodland: An area that has been wooded continuously since at least 1600 AD.

Ancillary Use - a subsidiary use connected to the main use of a building or piece of land.

AOD: Above Ordnance Datum, the height above acknowledged sea level.

Appeal - the process whereby an applicant can challenge an adverse decision on an application by means of written representations, an informal hearing or formal inquiry proceedings. Appeals can also be made against the failure of the planning authority to issue a decision, against conditions attached to a permission and against the issue of an enforcement notice.

Aquifer: A water bearing bed of strata, either by virtue of its porosity or because it is pervious.

Archaeological interest: There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.

Archaeological watching brief: Attendance on site of a suitable qualified or experienced archaeologist during the course of ground excavations, usually working to a brief agreed with the Local planning Authority.

Area of Outstanding Natural Beauty - area designated by the Countryside Agency or the Countryside Council for Wales where the primary purpose is the conservation and enhancement of natural beauty including flora, fauna, geology and landscape.

Area of Special Control of Advertisements - an area which is specifically defined by the local planning authority because they consider its scenic, historical, architectural or cultural features are so significant that a stricter degree of advertisement control is justified in order to conserve visual amenity within that area. Such areas can only be designated with the approval of the Secretary of State.

Article 4 Direction - an order made by the Secretary of State, the National Assembly for Wales or the local planning authority, requiring a planning application to be made where normally permitted development rights would apply.

Article 14 Direction - issued by the Secretary of State or the National Assembly for Wales to restrict the grant of planning permission by a local planning authority, either indefinitely or for a specified period, normally to give the Department time to decide whether to call in the application.

Assessment: An umbrella term for description, analysis and evaluation.

B b

Background Noise: The background noise level is the underlying level of noise present at a particular location for the majority (usually 90%) of a period of time. As such it excludes any short duration noises, such as individual passing cars (but not continuous traffic), dogs barking or passersby. Sources of background noise typically include such things as wind noise, traffic and continuously operating machinery (e.g. air conditioning or generators).

Back-land - land which is behind existing development with no, or very limited, road frontage.

Baseline conditions. The conditions that would pertain in the absence of the proposed project at the time that the project would be constructed/operated/decommissioned. The definition of these baseline conditions should be informed by changes arising from other causes (e.g. other consented developments).

BPEO (Best Possible Environmental Option) - The option that provides the most benefits or the least damage for the environment, as a whole, at acceptable cost, in the long term as well as the short term. (defined in the 12th report of the Royal Commission on Environmental Pollution)

Best and most versatile agricultural land: Land in grades 1, 2 and 3a of the Agricultural Land Classification.

Betterment - the amount by which the value of land is increased by development or by the grant of planning permission, or because of the development of neighbouring land.

Bio-diversity - a measure of the number and range of species and their relative abundance in a community. / The biological diversity of the earth's living resources. The total range of variability among systems and organisms at all levels of organisation and the structural and functional relationships within and between these different levels.

Bio-diversity Action Plan (BAP) - the means by which the UK government commitment to the Convention on Biological Diversity at Rio de Janeiro (1992) is to be met.

Birds and Habitats Directives: European Directives to conserve natural habitats and wild fauna and flora.

Borehole: A deep hole bored into the ground as part of intrusive investigations typically to test depth and quality of ground water.

Brown-field Site - land which has been previously developed, excluding mineral workings or other temporary uses.

Bronze Age: Prehistoric time period from 2,000 to 700 BC.

Buffer zone. An area (human-made or natural) that helps to protect a habitat from damage, disturbance or pollution. It is managed to protect the 'integrity' of the valued habitat and/or the conservation status of species that it supports

Building Preservation Order - a notice under Section 3 of the Planning (Listed Buildings and Conservation Areas) Act 1990 to protect buildings of special architectural or historic interest from demolition or alterations that would affect their interest.

C c

Cadw - government agency supporting the preservation, conservation, enhancement, interpretation and appreciation of historic buildings and monuments in Wales.

Called-in Application - a planning application referred to the Secretary of State or the National Assembly for Wales for determination by virtue of the powers contained in section 77 of the Town and Country Planning Act 1990.

Change of Use - more correctly referred to as a 'material change of use'. A change in the use of land or buildings that is of significance for planning purposes, often requiring planning permission.

Circular - guidance, including policy, issued by a government department usually, but not always, in support of legislation.

Commercial (activity): Activities involved in buying and selling things, such as office workplaces. Commercial sites are not often open to the public.

Commitments - All land with current planning permission or allocated in local plans.

Community Forests - A joint initiative between the Countryside Agency and the Forestry Commission to promote the creation, regeneration of well-wooded landscapes around major towns and cities.

Community Infrastructure Levy: A levy allowing local authorities to raise funds from owners or developers of land undertaking new building projects in their area.

Community Right to Build Order: An Order made by the local planning authority (under the Town and Country Planning Act 1990) that grants planning permission for a site-specific development proposal or classes of development.

Competent person (to prepare site investigation information): A person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation.

Comparison Goods - 'non perishable' goods for retail sale which are often stocked in a wide range of sizes, styles, colours and qualities, including furniture, carpets, televisions etc.

Competent Authority. The authority which determines the application for a consent, permission, license or other authorisation to proceed with a development. It is the authority that must consider the environmental information before granting any kind of authorisation. For example, for projects requiring planning permission this will usually be the Local Planning Authority.

Compulsory Purchase Orders (CPOs) - notice issued by the government or a local authority to acquire land or buildings for public interest purposes.

Conditions - stipulations attached to a planning permission to limit or direct the manner in which a development is carried out.

Contaminated Land - land which has been polluted or harmed in some way rendering it unfit for safe development and most practical uses.

Controlled Parking Zone (CPZ) - an area in which all kerbside space is controlled by either waiting or loading restrictions or by designated parking spaces.

Conservation (for heritage policy): The process of maintaining and managing change to a heritage asset in a way that sustains and, where appropriate, enhances its significance.

Conservation Area - an area given statutory protection under the Planning Acts, in order to preserve and enhance its character and townscape.

Conservation Area Consent - consent required from the local planning authority before demolishing an unlisted building in a conservation area.

Contamination: Contamination is the addition, or the result of addition, or presence of a material or materials to, or in, another substance to such degree as to render it unfit for its intended purpose.

Consultation - procedures for assessing public opinion about a plan or major development proposal, or in the case of a planning application, the means of obtaining the views of affected neighbours or others with an interest in the proposal.

Consultation bodies (consultees). Any body specified which has been consulted in respect of the Environmental Statement. See **Statutory Consultee** below.

Convenience Shop - supermarket, grocers, newsagents, confectioners, tobacconists, off-licences or other shops selling goods which tend to be purchased regularly.

Conversions - the sub-division of residential properties into bedsits, self-contained flats or maisonettes.

Countryside Agency - organisation responsible for advising government and taking action on issues affecting the social, economic and environmental well-being of the English countryside.

Countryside Council for Wales (CCW) - government agency promoting the interests and well-being of rural Wales.

CO₂: (Carbon Dioxide) Contributes about 60% of the potential global warming effect of man made emissions of greenhouse gases. Although this gas is naturally emitted by living organisms, these emissions are offset by the uptake of carbon dioxide by plants during photosynthesis; they

therefore tend to have no effect on atmospheric concentrations. The burning of fossil fuels, however, releases carbon dioxide fixed by plants many millions of years ago and thus increases its concentration in the atmosphere.

Cumulative effects / impacts: The summation of effects / impacts that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.

Cumulative landscape effects: There is the potential for cumulative landscape effects where there would be:

- An incremental change to the fabric of the landscape, as the result of two or more operational, permitted and/or proposed wind farms.
- An incremental change in the character and/or quality of the landscape as a result of the simultaneous, successive and/or sequential visibility of two or more operational, permitted and/or proposed wind farms from various locations.

Cumulative visual effects: can occur where there would be:

- Simultaneous visibility of two or more operational, permitted and/or proposed wind farms at a viewpoint location, in the same sector of the view (within 45degrees).
- Successive visibility of two or more operational, permitted and/or proposed wind farms at a viewpoint location, where each wind farm is in a different sector of the view (>45 percent apart). Sequential visibility of two more operational, permitted and/or proposed wind farms along a linear route.

Cumulative ZVI: Areas within which a number of proposed developments may have an influence or effect on visual amenity.

D d

Decentralised energy: Local renewable energy and local low-carbon energy usually but not always on a relatively small scale encompassing a diverse range of technologies.

Decommissioning: A process where the site is made safe by removing hazards.

Deemed Consent - this allows the display of certain "specified classes" of advertisement without first having to make an application to the local planning authority. Under the Control of Advertisements Regulations there are 14 Classes, all of which are subject to strict conditions and limitations.

Density - in the case of residential development, a measurement of either the number of habitable rooms per hectare or the number of dwellings per hectare.

Departure - a proposed development which is not in accordance with a local plan but which due to exceptional circumstances the local planning authority proposes to accept - after due publicity and possible referral to the Secretary of State or the National Assembly for Wales.

Designated heritage asset: A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.

Derelict Land - Land so damaged by industrial or other development that it is incapable of beneficial use without treatment.

Detailed/Full Application - The most common type of planning application is one that seeks full or detailed planning permission. It should contain all the information needed for the LPA to reach its decision, but the LPA may seek further information.

Determination - local planning authority process to decide whether a proposed development requires planning permission.

Developer: The applicant for authorisation for a private project or the public authority which initiates a project.

Development - the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or land.

Development Area - a priority area for environmental, social or economic regeneration or a combination of these.

Development Brief - document providing detailed information to guide developers on the type of development, design and layout constraints and other requirements for a particular, usually substantial, site.

Development Consent: The decision of the Competent Authority or Authorities which entitles the Developer to proceed with the project.

Development Control - the process whereby a local planning authority decides whether a planning application meets the requirements of planning policy, particularly as set out in development plans.

Development Plan - document (a structure or local plan) that sets out in writing and/or in maps and diagrams a local planning authority's policies and proposals for the development and use of land and buildings in the authority's area.

Directive: European Commission (EC) Directives impose legal obligations on European Member States. They are binding as to the results to be achieved, but allow individual states the right to decide the form and methods used to achieve the results.

Discontinuance Notice - notice served by a local planning authority requiring the discontinuance of the display of any advertisement, or the use of a site for the display of an advertisement, which has the benefit of deemed consent under the Control of Advertisements Regulations. Action to serve a discontinuance notice may only be taken if the planning authority is satisfied it is necessary to do so to remedy a substantial injury to the

amenity of the locality or a danger to members of the public.

Displacement: The extent to which the benefits of a project are offset by reductions of output or employment elsewhere.

E e

EA: Environment Agency

Economic development: Development, including those within the B Use Classes, public and community uses and main town centre uses (but excluding housing development).

Ecology: The study of living organisms in relation to their surroundings.

Ecological networks: These link sites of biodiversity importance.

Ecosystem services: The benefits people obtain from ecosystems such as, food water, flood and disease control and recreation.

Effects/Impacts: A predicted change in the environmental baseline as a result of the proposed development. Effects can be positive or negative.

Effluent: A fluid discharged or emitted to the external environment.

Employment uses: Any undertaking or use of land that provides paid employment.

Employment density: Average floor space per person in a given building

EN: English Nature

Enforcement - procedures by a local planning authority to ensure that the terms and conditions of a planning decision are carried out, or that development carried out without planning permission is brought under control.

Enforcement Notice - notice requiring the discontinuance of an unauthorised use and/or the removal of buildings, including restoration of land, where development has been begun without permission or in breach of a condition.

Edge-of-centre - For retail purposes, a location that is well connected and up to 300 metres of the primary shopping area. For all other main town centre uses, a location within 300 metres of a town centre boundary. For office development, this includes locations outside the town centre but within 500 metres of a public transport interchange. In determining whether a site falls within the definition of edge of centre, account should be taken of local circumstances.

Emission: A material that is expelled or released to the environment. Usually applied to gaseous or odorous discharges to the atmosphere.

English Heritage (Historic Buildings and Monuments Commission for England) - a national body funded by the government to promote and give advice on building conservation matters.

English Nature - a national body funded by the government to promote and give advice on the conservation of England's wildlife and natural features.

Environmental Appraisal - the process of weighing all the policies in a development plan for their global, national and local implications.

Environmental Baseline: The existing (pre-development) context of a study area.

Environmental Capacity: The ability of the environment to accommodate a particular activity or rate of activity without unacceptable change.

Environmental Impact Assessment (EIA) - under the Town and Country Planning (Assessment of Environmental Effects) Regulations 1988, proposers of certain scheduled developments are required to submit a planning application with an accompanying environmental statement, evaluating the likely environmental impacts of the development, together with an assessment of how the severity of the impacts could be reduced. / This is an assessment carried out under the EIA Regulations. It is the whole process of gathering environmental information; describing a development or other project; predicting and describing the environmental effects of the project; defining ways of avoiding, reducing or compensating for these effects; consulting the general public and specific bodies with responsibilities for the environment; and ensuring that measures are prescribed to avoid, reduce or compensate for environmental effects.

Environmental Information - The information that must be taken into account by the decision maker (the Competent Authority) before granting any kind of authorisation in any case where the EIA process applies. It includes the Environmental Statement, including any further information, any representations made by any body required by the Regulations to be invited to make representations, and any representations duly made by any other person about the environmental effects of the development.

Environmental Statement (ES) - The report on the assessment carried out under the EIA Regulations, on the environmental effects of a development; normally submitted with the planning application.

Environmental Studies: The surveys and investigations carried out by the developer and the EIA team in order to prepare the Environmental Information for submission to the competent authority.

EIA Regulations - The UK statutory instruments that are designed to meet the requirements of Council Directive

85/337/EEC on the Assessment of the effects of certain public and private projects on the environment, as amended by Council Directive 97/11/EC, 2003/35/EC and 2009/31/EC.

EIA Team: The team which carries out the environmental studies and prepares the environmental information for submission to the competent authority.

Established use - a use which does not conform to a plan but against which enforcement proceedings cannot be taken, often because of the length of time a use has been in operation.

Established Use Certificate - these were issued by a planning authority before July 1992 where it could be shown that a use of land or buildings had existed since before 1964. It gave immunity from enforcement action. Since July 1992 these have been replaced by Lawful Development Certificates.

European Spatial Development Perspective (ESDP) - non-binding regional structure plan for the European Union.

Examination in Public (EIP) - consideration of public views on a draft structure plan or proposed changes to it, held before an independent inspector.

Exclusion List: A list of threshold and criteria for specified categories of projects defining those projects for which EIA is not required because they are considered to be unlikely to have significant effects on the environment.

Express Consent - this is needed to display an advertisement, which does not benefit from deemed consent under the Town and Country Planning (Control of Advertisements Regulations).

F f

Fauna: Animal Life.

Floodplain: Land adjacent to a watercourse over which water flows, or would flow but for defences in place, in times of flood.

Flora: The plant life of a particular geographical area.

Footprint: perimeter of building's ground floor plan.

Frequency: The frequency of a sound is equivalent to its pitch in musical terms. The units of frequency are Hertz (Hz), which represents the number of cycles (vibrations) per second.

Fugitive dust emissions: Dust emissions escaping from a construction site.

G g

General Permitted Development Order (GPDO) - the Town and Country Planning (General Permitted Development) Order 1995 grants rights (known as permitted development rights) to carry out certain limited forms of development without the need to make an application for planning permission.

Green Belt - specially designated area of countryside protected from most forms of development in order to stop urban sprawl and the coalescence of settlements, preserve the character of existing settlements and encourage development to locate within existing built-up areas.

Green infrastructure: A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities.

Green-field Site - an area not previously used for built development.

Grid (also “National Grid” and “Power Grid”). A common term referring to the electricity transmission and distribution system.

Gross: The sum total without reduction.

Gross Value Added - A productivity metric that measures the difference between output and intermediate consumption. Gross value added provides a pound value for the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production.

Ground Investigation (GI). An intrusive sub-surface investigation by mechanised plant or hand held tools. Designed to characterise soil or rock by sample recovery or exposure of subsurface strata; thus enabling the correct and accurate design of foundations, slopes or earthworks.

Ground Water: Water associated with soil or rocks below the ground surface but is usually taken to mean water in the saturated zone.

H h

ha: 1 hectare = 10,000 sq. metres = 2.47 acres.

Horizon: A time - plane recognisable in rocks by some characteristic feature such as flora, fauna or lithology.

Habitable Room - all living rooms and bedrooms, but not kitchens, bathrooms, WCs or circulation space, are normally regarded as habitable for the purposes of density calculations.

Habitat - A place in which a particular plant or animal lives. Often used in the wider sense referring to major assemblages of plants and animals found together.

Heritage asset: A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).

Heritage Coast: Areas of undeveloped coastline which are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors.

Historic environment: All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.

Historic environment record: Information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use.

Hoarding: A temporary board fence set up on the perimeter of a building site.

Hydraulic piling: A piling mechanism used for pressing in and pulling out sheet piles with minimized noise and vibration generation.

Hydrogeology: The study of the geological factors relating to the Earth's water.

Hydrology: The study of the distribution, conservation, use of the water of the earth and its atmosphere.

Hz: Sound frequency refers to how quickly the air vibrates, or how close the sound waves are to each other (in cycles per second, or Hertz; Hz).

I i

Impact - The way in which a receptor or natural resource is affected by a proposed development.

Improved grassland: Grassland that has been modified to increase its agricultural value, often using ploughing and re-seeding, land drainage and treatment with fertilisers and herbicides.

Inclusive design: Designing the built environment, including buildings and their surrounding spaces, to ensure that they can be accessed and used by everyone.

Inert waste: Wastes that do not undergo any significant physical, chemical or biological transformation.

In-situ preservation: Preserving archaeological remains in the natural, original or appropriate position.

Invertebrate: An animal lacking a backbone and internal skeleton.

Indirect impacts: Impacts on the environment, which are not a direct result of the Development but are often produced away from it or as a result of a complex pathway. Sometimes referred to as secondary impacts.

Infrastructure - permanent resources serving society's needs, including roads, sewers, schools, hospitals, railways, communication networks etc.

Integrated Transport Strategy - the integration of land-use and transportation planning to allow transport provision and the demand for travel to be planned and managed together, balancing the use of different modes of transport to encourage easy transfer between them and reduced reliance on the private car.

Iterative process - A process repeated until the best solution has been found. In the context of EIA, it can be understood as the process of assessment and reassessment until the most appropriate development is achieved.

J j

K k

kWh: kilowatt hour = 1 unit of electricity.

L l

Land Compensation - concerns the assessment of compensation where land, or some other interest in land, is being acquired, either compulsorily, or by agreement, by an authority possessing compulsory purchase powers.

Landscape: Landscape results from the way that different aspects of our environment (physical, social, aesthetic and perceptual) interact together and are perceived by us:

- Physical elements- e.g. geology, landform, soils, flora and fauna.
- Social elements- e.g. land use, enclosure patterns, and the patterns, form and scale of settlements and other built development.
- Aesthetic factors- e.g. colour, form, visual texture and pattern, sounds, smells and touch.
- Perceptual factors- e.g. memories, associations, stimuli and preferences.

LBAP: Local Biodiversity Action Plan.

Landscape character: the distinct and recognisable pattern of elements that occur consistently in a particular type of landscape, and how these are perceived by people. It reflects particular combinations of geology, landform,

soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape.

Landscape character type: A landscape type will have broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and field pattern discernible in maps and field survey records.

Landscape effects: Change in the elements, characteristics, character and qualities of the landscape as a result of development. These effects can be negative or positive.

Landscape value: is concerned with the relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national landscape designation. Yet a landscape may be valued by different communities of interest for many different reasons without any formal designation, recognising, for example, perceptual aspects such as scenic beauty, tranquility or wildness; special cultural associations; the influence and presence of other conservation interests; or the existence of a consensus about importance, either nationally or locally.

Lawful Development Certificate - a procedure by which existing or proposed uses and other forms of development can be certified as lawful for planning purposes. An application has to be made to the local planning authority and there is a right of appeal against their decision.

Listed Building - building or other structure of special architectural or historic interest included on a statutory list and assigned a grade (I, II* or II).

Listed Building Consent - a permission required for the alteration or demolition of a listed building.

Local Development Order: An Order made by a local planning authority (under the Town and Country Planning Act 1990) that grants planning permission for a specific development proposal or classes of development.

Local Enterprise Partnership: A body, designated by the Secretary of State for Communities and Local Government, established for the purpose of creating or improving the conditions for economic growth in an area.

Local Nature Partnership: A body, designated by the Secretary of State for Environment, Food and Rural Affairs, established for the purpose of protecting and improving the natural environment in an area and the benefits derived from it.

Local planning authority: The public authority whose duty it is to carry out specific planning functions for a particular area. All references to local planning authority apply to the district council, London borough council, county council, Broads Authority, National Park Authority and the Greater London Authority, to the extent appropriate to their responsibilities.

Local Nature Reserve (LNR) - area designated under the National Parks and Access to the Countryside Act 1949 as being of particular importance to nature conservation and where public understanding of nature conservation issues is encouraged.

Local Plan - statutory development plan prepared by a local planning authority setting out detailed policies for environmental protection and development.

Local Planning Authority - the local authority or council that is empowered by law to exercise planning functions. This is normally the local borough or district council, but in National Parks and some other areas there is a different arrangement.

M m

Made Ground: Soils or other material that has been deposited by man rather than natural processes, for example to make up ground levels.

Magnitude: A combination of the scale, extent and duration of an effect.

Mandatory List: A list of thresholds and criteria for specified categories of projects defining those projects for which EIA is always required because they are considered to be likely to have significant effects on the environment.

Material Consideration - a matter which should be taken into account in deciding on a planning application or on an appeal against a planning decision.

Medieval: Historic time period from AD1066 – AD1485.

Megawatt (MW) - A million watts.

Megawatt-hour (MWh) - One million watt-hours. Equal to one thousand kilowatt-hours (kWh) or 'units' of electricity.

Metropolitan - constituting a large urban area, usually including a city, its suburbs and outlying areas.

Micro climate: The climate of a small localised area.

Mineral Planning Guidance Notes (MPGs) - a series of documents issued by the Office of the Deputy Prime Minister (ODPM) (previously Department of Transport, Local Government and the Regions (DTLR)) setting out government policy and advice on planning issues relating to mineral resources.

Minerals Planning Policy Wales - Document setting out the policy of the Welsh Assembly Government in relation to short and long term future use and safeguarding of mineral deposits.

Mitigation - Measures taken to avoid or reduce negative impacts. Measures may include: locating the development and its working areas and access routes away from areas of high ecological interest, fencing off sensitive areas during

the construction period, or timing works to avoid sensitive periods.

Multiplier: Figure used to calculate the number of induced and indirect jobs created.

Multiplier Effects: Further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchasing.

N n

National Assembly for Wales - Government body in Wales that debates and approves legislation and holds the Welsh Assembly Government to account.

National Nature Reserve - area designated by English Nature to protect and conserve nationally important areas of wildlife habitat and geological formations and to promote scientific research; in Wales it is an SSSI that the Countryside Council for Wales (CCW) has designated of national or international importance for nature conservation. (Note: on the CCW website I noticed that they also refer to National Nature Reserves, as well as SSSIs)

National Park - tract of predominantly open and attractive countryside designated under the National Parks and Access to the Countryside Act 1949 with its own administration and management role and function as a local planning authority.

National Planning Policy Framework – NPPF sets out the Government's policies on different aspects of planning.

Nature Conservation - the preservation, management and enhancement of natural plant and animal communities, and occasionally modified vegetation, as representative samples of their kind.

Net: After all deductions have been made.

Net Additional Jobs: The number of jobs created in the construction and operating phases, less the number of jobs likely to happen anyway (deadweight), those jobs that are filled by non-impact area residents (leakage) and those jobs displaced in existing businesses or activities by the development (displacement).

Natural Area: Sub-division of England, each with a characteristic association of wildlife and natural features.

Negative List: See exclusion List

New Town - free-standing new settlement designated and planned under the New Towns Act 1946 and subsequent legislation.

NGR: National Grid Reference used for identifying locations on OS maps.

Noise: Unwanted sound. May refer to both natural (e.g. wind, birdsong etc) and artificial sounds (e.g. traffic, noise from wind turbines, etc)

Noise sensitive receptors: Locations that may potentially be adversely affected by the addition of a new source of noise. Can include residential properties, outdoor areas and sensitive species.

Non-aquifer: A below ground layer of soil or rock that does not yield water.

Non-conforming Use - a use which does not conform to the general provisions of the development plan for the area in which it is located.

Non-Fossil Fuel Obligation (NFFO) - a provision of the Electricity Act 1989 requiring regional electricity companies to take a proportion of their electricity from energy sources other than fossil fuels.

Non-Technical Summary: A brief report summarising the principle sections of the Environmental Statement in non-technical language. The Non-Technical Summary is bound into the main report, but is also available as a free-standing document.



Office of the Deputy Prime Minister (ODPM) - (previously Department of Transport, Local Government and the Regions (DTLR)) government department responsible for town and country planning policy and administration.

Open space: All open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity.

Original building: A building as it existed on 1 July 1948 or, if constructed after 1 July 1948, as it was built originally.

OS: Ordnance Survey

Outline application - a general application for planning permission to establish that a development is acceptable in principle, subject to subsequent approval of detailed matters.

Out-of-Centre - a location that is separated from a town centre but is not necessarily outside the built-up area.

Out-of-town - an out-of-town development on a green-field site or on land not clearly within the current urban boundary.



Palaeolithic: Prehistoric time period from 450,000 – 12,000 BC.

Park and Ride - scheme enabling motorists to leave their vehicles at edge-of-town car parks and travel into town centres by public transport.

Parks and Gardens of Special Historic Interest (GSHI) - parks and gardens containing historic features dating from 1939 or earlier and registered by English Heritage in three grades as with historic buildings.

Pathways: The routes by which impacts are transmitted through air, water, soils or plants and organisms to their receptors.

Permeability: The ease at which liquids (or gases) can pass through rocks or a layer of soil.

Permitted Development Rights - rights to carry out certain limited forms of development without the need to make an application for planning permission, as granted under the terms of the Town and Country Planning (General Permitted Development) Order 1995.

pH: Scale of 0-14 defining the acidity/alkalinity of solutions including those in soils and water bodies; 0 = extremely acid, 14 = extremely alkaline and 7 = neutral.

Phase I Habitat Survey: first stage of strategy recommended by Nature Conservancy Council (1990) for ecological surveys. Seeks to provide general description of habitat/vegetation types within a study area, and to fit these to as standard classification so that they can be readily compared.

Photomontage: computer aided process which incorporates a photograph of the existing site/view/landscape with a representation of the development to provide an impression of the visual impact of the Development.

Planning condition: A condition imposed on a grant of planning permission (in accordance with the Town and Country Planning Act 1990) or a condition included in a Local Development Order or Neighbourhood Development Order.

Planning Obligations and Agreements - legal agreements between a planning authority and a developer, or offered unilaterally by a developer, ensuring that certain extra works related to a development are undertaken, usually under Section 106 of the Town and Country Planning Act 1990.

Planning Gain - the principle of a developer agreeing to provide additional benefits or safeguards, often for the benefit of the community, usually in the form of related development supplied at the developer's expense.

Planning Policy Wales - document setting out the land use planning policies of the Welsh Assembly Government.

Plant: A building's generator, heating, ventilation, and/or electricity-production system.

Playing field: The whole of a site which encompasses at least one playing pitch as defined in the Town and Country Planning (Development Management Procedure) (England) Order 2010.

Population - A collection of individuals (plants or animals), all of the same species and in a defined geographical area.

Positive List: See Mandatory List.

Previously developed land: Land which is or was occupied by a permanent structure, including the curtilage of the developed land (although it should not be assumed that the whole of the curtilage should be developed) and any associated fixed surface infrastructure.

Proposals Map - an obligatory component of a local plan showing the location of proposals in the plan on an Ordnance Survey base map.

Protected Species - plant and animal species, including all wild birds, protected under the Conservation (Natural Habitats and Conservation) Regulations 1994, the Wildlife and Countryside Act 1981 and subsequent amendments, or other species protected under legislation specific to them and the Wildlife and Countryside (Amendments) Act 1985.

Public Open Space (POS) - land provided in urban or rural areas for public recreation, though not necessarily publicly owned.

Public Realm - outdoor areas accessible to the public.

Public Right of Way - a way where the public has a right to walk, and in some cases ride horses, bicycles, motorcycles or drive motor vehicles, which will be designated either as a footpath, a bridleway, a road used as a public path (RUPP) or a byway.

Purchase Notice - this requires a local planning authority to purchase an interest in land where a planning decision conflicts with the private interests of landowners.

Q q

Quasi-static equipment: moves sufficiently slowly to be considered stationary for the purpose of noise assessment.

R r

Ramsar Site - area identified under the internationally agreed Convention on Wetlands of International Importance, especially as waterfowl sites and as Sites of Special Scientific Interest focusing on the ecological importance of wetlands generally.

Receptor - Any environmental or other defined feature (e.g. human beings) that is sensitive to or has the potential to be affected by an impact.

Recycling - the recovery of reusable materials from waste.

Regional Planning Guidance Notes (RPGs) -policy guidance and advice issued for each region in England by the Secretary of State.

Regional Shopping Centre - out-of-town concentration of shops, usually containing over 50,000 square metres gross retail area, typically offering a wide range of comparison goods.

Regionally Important Geological/Geomorphological Sites (RIGS) - non-statutory sites of regional importance recognised by English Nature and local authorities.

Regulation 7 Direction - a Direction made by the Secretary of State to remove from a particular site or defined area the benefit of deemed consent normally provided by the Town and Country Planning (Control of Advertisements) Regulations.

Renewable Energy - energy generated from resources that are unlimited, rapidly replenished or naturally renewable such as wind, water, sun, wave and refuse, and not from the combustion of fossil fuels.

Residual Effects/Impacts: Effects/Impacts predicted as a consequence of the development assuming successful implementation of the identified mitigation measures.

Review: The process of establishing whether an EIS is adequate for the Competent authority to use it to inform the decision on Development consent.

Ribbon development - a narrow band of development extending along one or both sides of a road.

Risk Assessment: An assessment of the likelihood and severity of an occurrence.

RSPB: Royal Society for the Protection of Birds.

Rural Development Area - priority area for economic and social development.

Rural Diversification - activities undertaken on surplus land to support farming incomes, including, for example, forestry, leisure and tourism.

S s

Scheduled Ancient Monument - a structure placed on a schedule compiled by the Department of National Heritage in England and Cadw in Wales for protection under the Ancient Monuments and Archaeological Areas Act.

Scoping - Is the procedure whereby the Competent Authority and the relevant statutory and other consultees are consulted at the outset, or very early in the EIA process, by the developer to agree what effects should be

covered in the Environmental Statement, how they should be covered and the methods to be used to assess them. If requested by the developer the Competent Authority must give a scoping opinion.

Screening - Is the process of deciding whether a particular project that is proposed is subject to the EIA process. It involves checking whether the project falls within the classes of project in Schedules 1 or 2 of the Regulations (or Annexes I or II of the Directives) and if in Schedule 2, whether it would be likely to have significant effects on the environment.

Section 106 Agreement (see Planning Gain) - a binding agreement between a council and a developer associated with a grant of planning permission and regarding matters linked to the proposed development.

Site of Importance for Nature Conservation (SINC): An area of land designated by a local authority because it supports nature conservation of significance in a county context. Designation criteria and policy context may vary between different local authority areas but they are usually linked with planning policies relating to nature conservation.

Site of Special Scientific Interest (SSSI) - area identified by English Nature or Countryside Council for Wales for protection by reason of the rarity of its nature conservation or wildlife features.

Special Area of Conservation: Land protected under Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora. Data supplied has a status of 'Candidate'.

Special Needs Housing - housing to meet need arising from homelessness or overcrowding, and purpose-built or supported housing for the elderly or disabled people or those requiring care.

Special Protection Area: Land classified under Directive 79/409 on the Conservation of Wild Birds. Data supplied has a status of 'Classified'.

Statutory - required by law (statute), usually through an Act of Parliament.

Statutory Consultee - Any body specified in the relevant EIA Regulations which the Competent Authority must consult in respect of an Environmental Statement, and which also has a duty to provide information or advice during the EIA process

Statutory Undertakers/Statutory Utilities - providers of essential services such as gas, electricity, water or telecommunications.

Stop Notice - a notice served in respect of land subject to enforcement proceedings prohibiting the carrying out or continuing of specified operations which are alleged to constitute a breach of planning control and designed to stop work going on pending the outcome of an appeal.

Structure Plan - statutory plan setting out key strategic policies which provide the framework for more detailed policies in local plans.

Sui Generis - uses of land or buildings which do not fall into any of the use classes identified by the Use Classes Order, for example theatres, launderettes, car showrooms and filling stations.

Supplementary Planning Guidance - additional advice issued by a local planning authority expanding upon its statutory policies.

Sustainable Development - environmentally responsible development, commonly defined as "development which meets the needs of the present generation without compromising the ability of future generations to meet their own needs".

T t

TANs - technical advice notes for Wales which provide topic-based supplements to the policy document Planning Policy Wales.

Threshold: A level of effect above which an assessment will be taken of whether any changes to procedures need to be made.

Topography: The natural or artificial features, level and surface form of the ground surface.

Town Centre - describes city, town and traditional suburban centres which provide a broad range of facilities and services and which fulfil a function as a focus for a community and for public transport.

Town Centre Management - partnership of local organisations, businesses and individuals to promote the common good of a town by developing, managing, promoting and improving facilities, the useful resources, the economy and the environment of a town centre.

Townscape - the appearance and character of buildings and all other features of an urban area taken together as a whole.

Traffic Calming - management measures designed to lower traffic speeds or redirect traffic to alternative routes to avoid congestion, reduce accidents and injuries and prevent excess levels of pollution.

Transport assessment: A comprehensive and systematic process that sets out transport issues relating to a proposed development. It identifies what measures will be required to improve accessibility and safety for all modes of travel, particularly for alternatives to the car such as walking, cycling and public transport and what measures will need to be taken to deal with the anticipated transport impacts of the development.

Travel plan: A long-term management strategy for an organisation or site that seeks to deliver sustainable

transport objectives through action and is articulated in a document that is regularly reviewed.

Transport Policy and Programme (TPP) - statutory document setting out a transport authority's bid for the programming and funding of transport measures, produced annually for submission to central government.

Transport statement: A simplified version of a transport assessment where it is agreed the transport issues arising out of development proposals are limited and a full transport assessment is not required.

Travel to Work Area (TTWA) - a broadly self-contained labour market area usually focused on an urban employment centre.

Tree Preservation Order (TPO) - direction made by a local planning authority that makes it an offence to cut, top, lop, uproot or wilfully damage or destroy a tree without that authority's permission.

Trial pits: intrusive investigation positions excavated by a mechanical excavator.

U u

Unitary Development Plan - local plan produced by certain unitary district authorities and London boroughs which have responsibility for the full range of local authority services.

Urban Fringe - predominantly open land on the edge of an existing urban area.

Urban Regeneration - the re-use or redevelopment of decaying or run-down parts of older urban areas to bring them new life and economic vitality.

Use Classes Order - the Town and Country Planning (Use Classes) Order 1987 puts uses of land and buildings into various categories, planning permission not being required for changes of use within the same use class. In practice changes between use classes are likely to require planning permission.

V v

Vibration: In this context, refers to vibration carried in structures such as the ground or buildings, rather than airborne noise

Village envelope - boundaries defined on a map beyond which the local planning authority proposes that a village should not be allowed to extend.

Visual amenity: The value of a particular area or view in terms of what is seen.

Visual effect: Change in the appearance of the landscape as a result of development. This can be positive (i.e.

beneficial or an improvement) or negative (i.e. adverse or a detraction).

Visual envelope: Extent of potential visibility to or from a specific area or feature.

W w

Welsh Assembly Government - a body that develops and implements policy in Wales via the civil service and a range of sponsored bodies.

Wildlife Corridor - a continuous area facilitating the movement of wildlife through rural or urban environments.

Wind Farm - large open site where wind speeds are consistently high on which a number of wind turbines generate electricity for private or commercial use.

Wind turbine. A term used for a wind energy conversion device that produces electricity.

Wireline perspective: computer aided process which shows landform and number and extent of wind turbines visible from a view.

Written Statement - documentary statement of policy, forming part of a development plan submitted by a local planning authority and requiring formal approval.

X x

Y y

Z z

Zone of influence. The areas/resources that may be affected by the biophysical changes caused by activities associated with a project.

Zone of Theoretical Visibility (ZTV): representation (usually presented as a map with markings or colourings) of the area over which a site and/or a proposed development may be visible. Does not account for buildings or trees local to the viewer that may obscure a view.

Six: 56 Warrington

Langtree PP and First Panattoni

Site Specific Glossary

Site Specific Terminology	Description
A50 Cliff Lane A50 Knutsford Road	Road bounding the Site.
Appleton Thorn Trading Estate	Industrial estate to the west of the Site with Barleycastle Trading Estate and Stretton Green Distribution Park
Applicant	Langtree PP and First Panattoni
Application Site	Application Site for proposed development - Land at Junction 20 of the M6/M56 Interchange
B5356 Grappenhall Lane	Road bounding the Site.
Barleycastle Trading Estate	Industrial estate to the west of the Site with Appleton Thorn Trading Estate and Stretton Green Distribution Park
Borough	The authority area is a Borough
Bradley Brook	Watercourse running west to east to the southern boundary of the site
Bradley Brook Tributary	Watercourse running west to east to the southeastern boundary of the Site and turns into Bradley Brook.
Bradley Gorse	Area of woodland located within the south east of the Site, to the north of Wrights Covert.
Bradley Hall Farm	Farm complex within the Site boundary
Bradley Hall moated site	Scheduled Ancient Monument within the Site boundary
CIA	Cumulative Impact Assessment
Client	Langtree PP and First Panattoni
Core Strategy (July 2014)	Warrington's adopted local planning policy (although currently under review).
EIA Regulations 2017	The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The EIA Regulations the ES is based upon.
emerging Local Plan (Preferred Options July 2017)	Warrington's emerging Local Plan document that is currently being consulted upon.
First Panattoni and Langtree PP	Applicant / Client
Garden City Suburb	Area of growth within the emerging Local Plan (Preferred Options July 2017). The Site is part of this area of growth, although can also be delivered independently of this.
GRR	Greenfield run-off rate
Internal Site Access Road(s)	The access road within the site to facilitate access to each development plot
Langtree PP and First Panattoni	Applicant / Client
Local Plan Core Strategy (July 2014)	Warrington's adopted local planning policy (although currently under review).
LWS	Local Wildlife Sites
M56 Motorway	
M6 Motorway	
Means of Access	Details of the vehicular access into the Application Site

Six: 56 Warrington

Langtree PP and First Panattoni

Site Specific Terminology	Description
Parameters	A series of parameters fixed as part of the proposals which form the basis of the environmental assessment.
Primary Internal Site Access Road	The primary access road within the site
Proposed Development	Application Site for proposed development
PROW	Public Rights of Way
Secondary Internal Site Access Road(s)	The secondary access roads within the site to facilitate access to each plot
Site	Application Site - Land at Junction 20 of the M6/M56 Interchange
Six:56 Warrington	Application Site (Land at Junction 20 of the M6/M56 Interchange)
SSSI	Site of Special Scientific Interest
Stretton Green Distribution Park	Industrial estate to the west of the Site with Appleton Thorn Trading Estate and Barleycastle Trading Estate
SWUEFP	South Warrington Urban Extension Framework Plan Document (SWUEFP) (June 2017) produced on behalf of Warrington Borough Council as part of their evolving planning policy
The Town and Country Planning (Environmental Impact Assessment) Regulations 2017	The EIA Regulations the ES is based upon.
WMB	Warrington Metropolitan Borough
WMBC	Warrington Metropolitan Borough Council
Wrights Covert	Area of woodland located within the south east of the Site, to the south of Bradley Gorse.

ES Part I Appendix I3



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Environmental Impact Assessment Regulations 2017

Regulation 15 Scoping Opinion

Reference No.: 2018/32281
Location: Land at Junction 20 of the M6 Motorway and Junction 9 of the M56 Motorway (known as Six:56 Warrington)

PROPOSAL: DEMOLITION OF EXISTING BUILDINGS AND CONSTRUCTION OF UP TO 325,150 SQ M (GROSS INTERNAL) OF EMPLOYMENT FLOORSPACE (USE CLASSES B8; B2 AND B1 (a) (OFFICES) AND ASSOCIATED SERVICING AND INFRASTRUCTURE INCLUDING CAR PARKING AND VEHICLE & PEDESTRIAN CIRCULATION AND ALTERATION OF EXISTING ACCESS ROAD INTO SITE INCLUDING WORKS TO EXISTING A50 JUNCTION, NOISE MITIGATION, EARTHWORKS TO CREATE DEVELOPMENT PLATFORMS AND BUNDS, LANDSCAPING INCLUDING BUFFERS, CREATION OF DRAINAGE FEATURES, ELECTRICAL SUBSTATION, PUMPING STATION, AND ECOLOGICAL WORKS.

This scoping opinion is prepared in accordance with Regulation 15 (4) of Part 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 and relates to the development proposal set out in your Environmental Impact Scoping Report (EISR) Rev B dated 23rd February 2018.

This letter comprises the adopted Scoping Opinion of the Council.

The site is a circa 97 hectare area of land. Your EISR sets out the likely effects of the proposed development in relation to the topic headings.

It is considered that, in general terms, your EISR adequately sets out how the EIA would establish the existing situation and then assess the impact of the proposal individually and cumulatively on the baseline situation, both during construction and once the development is complete - as required by the 2011 Regulations (as amended). Your EISR goes on to advise that the EIA will be



prepared in accordance with Schedule 4 of the Regulations, and this would be required to ensure compliance with the Regulations.

It is agreed that the matters contained in paragraph 19.6 are to be scoped out of the EIA, with the exception of the following matters (within the Cultural Heritage and Archaeology section):

DCH1638 Yew Tree Farmhouse Grade II Listed Building 1139340

DCH1659 Beehive Farmhouse Grade II Listed Building 1139361

DCH1660 Booths Farm, Shippon On Left (North West) Side Of Farmyard Grade II Listed Building 1139362

DCH1934 Booths Farm Farmhouse Grade II Listed Building 1329740

DCH12753 Barn at Manor House Farm, Cartridge Lane, Appleton Locally Listed Building

DCH12869 Milepost at Gallows Croft, Knutsford Road, Lymm

DCH13677 Tan House Farm, Barleycastle Lane, Appleton

Barleycastle Farmhouse, Barleycastle Lane - DCH1329741

Tanyard Farm building, Barleycastle Lane - DCH1139363

The LPA consider that bearing in mind the proposed heights of the development proposed (and therefore the wide ranging visual impact), an assessment of the impact on the setting of the above heritage assets should be included within any subsequent EIA.

The Local Planning authority consider that in addition to the information set out It in the submitted Environmental Impact Scoping Report (EISR), Rev B dated 23rd February 2018, the following additional matters should be included/re-assessed and incorporated into any subsequent Environmental Impact Assessment submitted for the site:

6. Interaction of Effects and Cumulative Impact

Warrington Borough Council's Public Health Team consider that any such assessment within this paragraph should be undertaken as a sub-Warrington basis, (rather than at the wider town level) given the broad levels of inequalities evident locally. Such an assessment should take into consideration the positive/negatives in terms of the socio-economic impacts for different areas/population groups and evidence should also be provided on how the proposed development would impact local residents that are in greatest need.

7. Geology & Ground Conditions

The Environment Agency concur with the findings of the EISR that the site has a low overall risk to the water environment , however the presence of an agricultural building is such that conditions may well be requested to be attached to any subsequent planning application in order to protect controlled waters. Due to the former land uses and the possibility that groundwater contamination may exist, the risk to controlled waters should be addressed by:

a) following the risk management framework provided within the Model Procedures for the Management of Land Contamination's Groundwater Protection: Principles & Practice (CLR 11)

- b) referring to the Environment Agency guiding principles contained within the Environment Agency's Groundwater Protection; Principles & Practice
- c) further information can be found on the land contamination technical guidance pages on the direct.gov web site

There are two "main river" watercourses, Bradley Brook and Bradley Brook Tributary, which flow along the southern boundary of the site and in the south-eastern part of the site. Under the Environmental Permitting (England and Wales) Regulations 2016, a permit may be required from the Environment Agency for any proposed works or structures, in, under, over or within eight metres of the top of the banks of the brooks. This was formerly called a Flood Defence Consent. Some activities are also now excluded or exempt. A permit is separate to and in addition to any planning permission granted. Further details and guidance are available on the GOV.UK website: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

The Environment Agency have no objections to the proposals to deal with foul and surface water flows as outlined in this section of the EISR

This part of the EISR includes a brief assessment of the risks to construction and operational phases of the development. It is stated within the report that 'no potential impacts have been identified as no significant sources of contamination or ground gas that represent a risk to receptors have been identified'. However, both 'Construction' and 'Operational' phases will be considered and the short, medium and long term impacts assessed.

A Phase I Geotechnical and Geoenvironmental Assessment has been undertaken by Cundall, dated November 2017 and is included within Appendix 8 of the report. The report has not been reviewed however the conclusions state that an exploratory geoenvironmental investigation will be required to support an ES Technical Chapter for the proposed development.

The application/approval will be conditioned accordingly, as the development is a large scheme located on/adjacent to potentially contaminated land, and the above reporting/documentation should be submitted as supporting information.

8. Traffic & Transportation

Warrington Borough Councils' Highways Section consider that the information contained within the Traffic & Transportation section of the EISR is acceptable, subject to the assessment of the existing junctions (contained within the sixth bullet point of paragraph 8.29) being undertaken/re-assessed utilizing the information contained within Warrington Multi Modal Transport Model.

Highways England consider that, given the wider proposals for a Garden City Suburb in the consultation version of Warrington Borough Council's Local Plan Preferred Development, the cumulative impacts of wider proposed development are not defined, and the necessary infrastructure improvements have not been determined. Highways England have concerns that, in the absence of a cumulative assessment of potential growth in the south-east Warrington area, the development's contribution to future network needs and infrastructure requirements cannot be determined at this stage. A cumulative assessment should therefore be included as part of any subsequent EIA in order to address such concerns.

The aspects of the traffic and transportation assessment which are understood to have previously been agreed with Highways England are:

Trip Generation - using appropriate TRICS data and observed traffic flows from a comparable site (preferably OMEGA)

Trip Distribution - operational staff journeys should be distributed based on 2011 Census journey to work data. HGV movements which are agreed to all be routed via M6 Junction 20 should be distributed based on observed HGV proportions at that junction.

Committed Developments - three recently approved HCA housing developments collectively circa 1,000 homes and the proposed 50,000m² Stobart Distribution Centre at land off Barleycastle Lane, this latter development to be considered as a sensitivity test.

Assessment Years - opening year of 2021 and future year assessment ten years later (2031).

The proposed highway network to be assessed includes the M6 Junction 20 dumbbell roundabouts, the merge and diverge capacities at M6 Junction 20. Also included is the A50/Grappenhall Lane roundabout, to the west of M6 Junction 20. Not included however is the roundabout junction on the A50 around 100m to the east of M6 Junction 20 which provides access to Lymm Services. This junction should be included in any future junction assessment network. The developer should undertake their own capacity assessment of the Lymm interchange even if strategic/micro-simulation models exist.

Within the Scoping Report estimates of trip generation and trip distribution are provided, however no supporting analysis is provided and so the estimates cannot be verified at this stage.

The methodology adopted in the Environmental Statement will follow IEMA methods set out in the document 'Guidelines for the Environmental Assessment of Road Traffic' (1993).

The guidelines set rules for screening which parts of the highway network should be included in the assessment. Forecast traffic flows from the Transport Assessment will be used to determine which parts of the highway network should be included in the Environmental Statement.

In the classification of receptors existing traffic on the M6 motorway is designated as of National significance, whereas traffic on the M56 motorway is designated as Regional. Given that the M56 provides access to Manchester Airport and is the only motorway link between England and Wales in the north, we believe that the M56 should be designated as of National significance.

The initial assessments of environmental impact during construction and the operation of the site can only be considered as indicative as the full assessment will need to draw on an agreed Construction Management Plan and Transport Assessment.

The general principles and scope defined for the environmental assessment of traffic impact are considered acceptable. However, a separate Transport Assessment Scoping Report should be prepared for the development and agreed with Highways England and the local highway authority in advance of any planning submission. The Transport Assessment Scoping Report should include the required supporting information for traffic generation and distribution estimates, along with outlining proposed assessment parameters such as time periods, background growth factors, and the proposed assessment approach (traffic modelling). Further detail should also be provided in respect of how sustainable access to the site is proposed, with proposals for staff to access the site by non-car modes. The Transport Assessment Scoping Report will provide greater certainty in respect of the scope and methodology of a future Transport Assessment, and therefore underpin the assessment of environmental impacts.

The LPA consider that all of the above should be provided/assessed as part of any subsequent EIA for the site

9. Flood Risk & Drainage

Warrington Borough Councils' Flooding section is satisfied with the information contained within section 9 of the EISR.

The Environment Agency concur with the EISR in that the land lies within Flood Zone 1.

The Environment Agency are satisfied with the inclusion of a Sustainable Urban Drainage system (SuDS) within the report (Section 9.60). SuDS can and should be designed to enhance biodiversity and should include options such as retention ponds, reed beds, wetlands and swales.

The Environment Agency have no objections to the proposals to deal with foul and surface water flows as outlined in this section of the EISR

11. Ecology & Nature conservation

Greater Manchester Ecology Unit considers that the broad principles (in terms of the ecological surveys required) contained within the Ecology Nature Conservation chapter of the EISR are acceptable, however without the completion of all the necessary surveys, they are unable to judge (at this stage) whether the Significance of Effects outlined are correct.

The EISR seeks to scope out the assessment of arable/improved grassland and tall ruderal habitats, however in the light of the draft advice contained in the National Planning Policy Framework and the government's recent 25 Year Environment Plan, that development should embed a net environmental gain, (in terms of biodiversity offsetting metrics), the LPA consider that these habitats should be included in any such calculations. Consequently, such matters should be scoped in to the final EIA.

In relation to air pollution, the impacts on natural receptors (such as existing habitats/designated sites) should also be assessed, as well as the impact on human health.

The Environment Agency note that there is no inclusion of water vole and otter surveys within the report. However, there are historic records of Water vole (*Arvicola amphibius*) within 1 kilometre of this site. The site boundary includes a large length of Bradley Brook and we would expect that a riparian mammal survey carried out by a qualified ecologist (at the appropriate time of year following best practice guidelines) is included within the EIA to ensure that development does not impact these protected species. The water vole and otter, and their habitats, are protected under Schedule 5 of the Wildlife & Countryside Act (1981) and we would expect to see appropriate mitigation and compensation if these are present on site.

The Environment Agency are satisfied with the proposed inclusion of a 15m buffer zone from bank top (ES Scoping Appendix 3). This should be free from built development including lighting, domestic gardens, road ways, footpaths and formal landscaping; and could form a vital part of green infrastructure provision. Land alongside watercourses is particularly valuable for wildlife and it is essential this is protected. Such networks may also help wildlife adapt to climate change and will help restore watercourses to a more natural state as required by the Water Framework Directive (WFD).

There is a requirement within the Water Framework Directive (WFD) that nothing should be done to a water body which would cause its condition to deteriorate. Measures should be included with any subsequent EIA to ensure that no part of this development should affect the watercourses ability to reach "good ecological potential" by 2027. A WFD assessment may be required depending upon the details of the proposed scheme. As part of any subsequent planning application/EIA opportunity should be taken to improve the watercourse and remove redundant modification from the watercourses, i.e. remove any existing redundant retaining walls or weirs.

It is noted that Bradley Brook is culverted to the east of the site (Section 4.42). Any subsequent EIA should include measures to ensure no further culverting of this watercourse as this involves the destruction of river and bankside habitat and the interruption of a wildlife corridor, acting as a barrier to movement. Again, refer to NPPF paragraph 109 and article 10 of the Habitats directive.

The Environment Agency are satisfied that habitats of ecological importance are to be retained as far as possible (Section 4.75). If ponds cannot be retained in their original location then they should be mitigated for at a ratio of 2 for 1, (as part of any subsequent EIA) and should be designed, located, constructed and managed in such a way as to positively contribute to the nature conservation value of the site. This is necessary to ensure that the ponds are protected and contributes to the nature conservation value in accordance with the NPPF paragraph 109. Paragraph 118 of the NPPF also states that opportunities to incorporate biodiversity in and around developments should be encouraged.

13. Noise & Vibration

The details in the above sections of the scoping report are acceptable. However, the following areas need to be incorporated in any future EIA submission:

- The proposal does not include management of the demolition of buildings, as outlined in the description of the development statement on page 9, section 1.2 (noise, vibration and dust controls required).
- The proposal does not include noise assessments and monitoring of locations off site.
- There is no consideration of the existing dwellings located in the middle of the site, should they remain. Noise, odour and dust assessments are required for the demolition, construction and operational stages.
- Careful consideration is required regarding routes for vehicles and vehicle movements in respect to dwellings and assessment of any impacts from traffic noise and vibration for the demolition, construction and operational stages.

14. Air Quality

The scoping proposes a detailed air quality assessment, which is acceptable.

15. Cultural Heritage and Archaeology

The methodology contained in paragraphs 15.1 to 15.5 of the EISR represents an appropriate approach to identifying the significance of the material likely to exist on the site.

The further work identified at paragraph 15.70 of the EISR should be provided/undertaken as part of the subsequent EIA. In addition, evaluation works, (in the form of a geophysical survey or non-intrusive techniques should be undertaken/submitted as part of any subsequent EIA.

In addition to the heritage assets to be assessed, an assessment of the impact on the setting of the following heritage assets should also be included within any subsequent EIA:

DCH1638 Yew Tree Farmhouse Grade II Listed Building 1139340

DCH1659 Beehive Farmhouse Grade II Listed Building 1139361

DCH1660 Booths Farm, Shippon on Left (North West) Side of Farmyard Grade II Listed Building 1139362

DCH1934 Booths Farm Farmhouse Grade II Listed Building 1329740

DCH12753 Barn at Manor House Farm, Cartridge Lane, Appleton Locally Listed Building

DCH12869 Milepost at Gallows Croft, Knutsford Road, Lymm

DCH13677 Tan House Farm, Barleycastle Lane, Appleton

Barleycastle Farmhouse, Barleycastle Lane - DCH1329741

Tanyard Farm building, Barleycastle Lane - DCH1139363

In this respect, any subsequent outline planning application may well need to include the scale and landscaping of the development proposed rather than deal with such issues as reserved matters.

Appendix 14 - Lighting

The baseline acceptable is acceptable, however, a full lighting assessment will be required for lighting both on and off site.

In addition to the above, the LPA consider that pre-application consultation with surrounding neighbours, the local Parish Councils' (Grappenhall & Thelwall, Lymm and Appleton and the South Warrington Parish Councils' Working Group), local ward Councillors and if not already done so, Cheshire East Council and their equivalent local representatives/Councillors, parish councils). The LPA have received a number of representations from local residents/parish council's/Councillors as part of the current scoping opinion request and it will be very important to gauge their views/take into account their concerns before submitting any formal planning application/EIA.

The local Ward Councillor has raised concerns about the loss of higher quality agricultural land and bearing in mind that potential loss, the LPA consider that an assessment of the impact of the loss of such land should be scoped into the final EIA for the site. In particular the subsequent EIA will need to demonstrate that, in policy terms, the proposed development is not premature in the light of the status of the Local Plan and the current status of the land as green belt.

Finally, I would advise you to make use of the Council's fee-based protocol for pre-application advice - which you can access via:- https://www.warrington.gov.uk/forms/form/400/en/1/pre-application_advice

- or by ringing our Support team on 01925 442819.

DATE OF REQUEST FOR SCOPING
OPINION RECEIVED:

27th February 2018

DATE SCREENING OPINION ISSUED:

6th April 2018



Development Manager
Development Management

ES Part I Appendix I 4

Six 56 Warrington

Langtree PP and Panattoni

Site Specific Glossary

Site Specific Terminology	Description
ALC	Agricultural Land Classification
AQMAs	Air Quality Management Areas
A50 Cliff Lane A50 Knutsford Road	Road bounding the Site.
Appleton Thorn Trading Estate	Industrial estate to the west of the Site with Barleycastle Trading Estate and Stretton Green Distribution Park
Applicant	Langtree PP and Panattoni
Application Site	Application Site for proposed development - Land at Junction 20 of the M6/M56 Interchange
B5356 Grappenhall Lane	Road bounding the Site.
Barleycastle Trading Estate	Industrial estate to the west of the Site with Appleton Thorn Trading Estate and Stretton Green Distribution Park
BPM	Best Practicable Means
Borough	The authority area is a Borough
Bradley Brook	Watercourse running west to east to the southern boundary of the site
Bradley Brook Tributary	Watercourse running west to east to the southeastern boundary of the Site and turns into Bradley Brook.
Bradley Gorse	Area of woodland located within the south east of the Site, to the north of Wrights Covert.
Bradley Hall Farm	Farm complex within the Site boundary, comprising Bradley Hall and detached barn which is Locally Listed
Bradley Hall moated site	Scheduled Ancient Monument (SAM) within the Site boundary
CIA	Cumulative Impact Assessment
Client	Langtree PP and Panattoni
Core Strategy (July 2014)	Warrington's adopted Statutory Development Plan comprising the Borough's local planning policy.
CEMP	Construction Environmental Management Plan
DoWCoP	Definition of Waste Code of Practice
EcMP	Ecological Management Plan
EIA Regulations 2017	The Town and Country Planning (Environmental Impact Assessment) Regulations 2017. The EIA Regulations the ES is based upon.
EDNA	The Council's Economic Development Needs Assessment (2016)
Updated EDNA	The Council's Updated Economic Development Needs Assessment (2019)
emerging Local Plan	Warrington's emerging Local Plan refers to Warrington Borough Council's Preferred Development Option Regulation 18 Consultation Document (July 2017) and the Proposed Submission Version Local Plan (2019), which will be consulted on for eight weeks commencing in April 2019.
FCEMP	Framework Construction Environmental Management Plan

Six 56 Warrington

Langtree PP and Panattoni

Site Specific Terminology	Description
Garden Suburb	Area of growth allocated as a Garden Suburb sustainable urban extension within the emerging Local Plan. The Site is part of this area of growth, although can also be delivered independently of this.
GCN	Great Crested Newts
GRR	Greenfield run-off rate
GVA	Gross Value Added
Internal Site Access Road(s)	The access road within the site to facilitate access to each development plot
Langtree PP and Panattoni	Applicant / Client
Local Plan Core Strategy (July 2014)	Warrington's adopted Statutory Development Plan comprising the Borough's local planning policy.
LLFA	Lead Local Flood Authority
LWS	Local Wildlife Sites
LVIA	Landscape and Visual Impact Assessment
MAFF	The Ministry of Agriculture, Fisheries and Food
MMP	Materials Management Plan
M56 Motorway	The M56 Motorway is a strategic road which is to the south of the Site
M6 Motorway	The M6 Motorway is a strategic road which runs parallel with the east of the Site.
Means of Access	Details of the vehicular access into the Application Site
NOx	Nitrogen dioxide and nitric oxide are referred to together as oxides of nitrogen (NOx). NOx gases react to form smog and acid rain as well as being central to the formation of fine particles (PM) and ground level ozone.
Parameters	A series of parameters fixed as part of the proposals which form the basis of the environmental assessment.
Primary Internal Site Access Road	The primary access road within the site
Proposed Development	Application Site for proposed development
Proposed Development Sire	Application Site for proposed development
PROW	Public Rights of Way
OWMS	Operational Waste Management Strategy
Secondary Internal Site Access Road(s)	The secondary access roads within the site to facilitate access to each plot
SWMP	A Site Waste Management Plan
Site	Application Site - Land at Junction 20 of the M6/M56 Interchange
Six 56 Warrington	Application Site (Land at Junction 20 of the M6/M56 Interchange)
SSSI	Site of Special Scientific Interest
Stretton Green Distribution Park	Industrial estate to the west of the Site with Appleton Thorn Trading Estate and Barleycastle Trading Estate
SuDS	Sustainable urban Drainage Systems
SWUEFP	South Warrington Urban Extension Framework Plan Document (SWUEFP) (June 2017) produced on behalf of Warrington Borough Council as part of their evolving planning policy

Six 56 Warrington

Langtree PP and Panattoni

Site Specific Terminology	Description
TA	Transport Assessment
The Town and Country Planning (Environmental Impact Assessment) Regulations 2017	The EIA Regulations the ES is based upon.
WBC	Warrington Borough Council
Warrington BC	Warrington Borough Council
Wrights Covert	Area of woodland located within the south east of the Site, to the south of Bradley Gorse.
WMMTM	Warrington Multi Modal Transport Model (WMMTM)
ZTV	A desktop landscape study carried out using a computer model of the 5km study area to produce a Zone of Theoretical Visibility (ZTV) based on the topographical OS data for the study area

Rev D

ES Part I Appendix I5

Spawforths

Founded in 1988, Spawforths have an in-house multidisciplinary team offering Planning, Masterplanning, Architecture, Landscape Architecture, Consultation and Project Management services.

We are the largest independent planning consultancy in the north of England, employing a large team of Chartered Town Planners, with more than 150 years combined professional experience. Spawforths also has a highly respected Design Team of Masterplanners, Landscape Architects and Architects. This allows us to take on any project no matter the scale or complexity. We are Members of IEMA and are accredited to IEMA's Quality Mark scheme in recognition of our excellence in EIA activities.

Within the planning team we have environmental planners who specialise in EIA. We can utilise our knowledge, experience, and project management skills to lead, coordinate and manage specialist consultants to ensure that the Environmental Statement is robust, proportionate and focuses upon the key potential environmental effects and impacts. Our involvement from project inception and our integrated approach with the wider team allows us to ensure that the key potential environmental impacts are addressed to evolve and influence the proposals at an early stage in the process.

Spawforths key EIA related services include:

- ES Coordination and Project Management
- EIA Screening and Scoping
- ES preparation and review
- Landscape and Visual Impact Assessments
- Socio Economic Assessments
- Energy Assessments for renewable energy projects
- Masterplanning
- Landscape Architecture
- Stakeholder and Community Consultation

Contacts: **Jenny Ray, Associate Town Planner**

Gavin Winter, Associate Town Planner

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Website: www.spawforths.co.uk

Address: Spawforths, Junction 41 Business Court, East Ardsley, Leeds, WF3 2AB



Jenny Ray

Title

Associate

Job Description /Role

Chartered Town Planner

Qualifications

BSc (Hons), MA

Professional Memberships

MRTPI

Role on this Project or Framework

Planner, ES and Project Coordinator



PLANNING | ARCHITECTURE | LAND PROMOTION

Jenny is an Associate Chartered Town Planner at Spawforths. She joined Spawforths in 2005, following three years as a Development Control Officer at Leeds City Council. She provides professional advice to a wide range of public and private sector clients, including developers, landowners, local authorities and housebuilders, on a variety of planning and environmental matters. She also leads on EIA activities at Spawforths along with the Directors and successfully secured an IEMA quality Mark which she is now responsible for maintaining practice-wide.

Jenny's specialist skills and experience are as an environmental assessment co-ordinator and project manager for large scale and strategic projects including infrastructure, motorway service areas, mixed use urban extensions, renewable energy and logistics and distribution development. This involves the preparation and submission of environmental statements and planning applications, and progressing them through the process to determination. Jenny's other skills and experience are in site promotion and appeals and all other planning related advice and services.

Core Skills

- Wide range of town planning experience in both the public and private sector.
- Experienced Environmental Impact Assessment Coordinator including the preparation of screening and scoping requests and full Environmental Statements and co-ordination of a full team of consultants
- Significant experience related to development control issues.
- Excellent project management skills, delivering a wide variety and scale of projects, on time and in budget
- Good commercial understanding and awareness
- Extensive knowledge and experience of stakeholder engagement and community consultation

Current and Recent Major Projects

- Wakefield Council – Wakefield Eastern Relief Road
- Extra MSA Group – Leeds Skelton Lake Services
- Langtree – Parkside Colliery Employment Park – 1 million square feet of B8 Phase 1
- Langtree and First Panattoni - 3 million sq ft B2 and B8 Development
- Persimmon Homes – Hartlepool South West Urban Extension
- BOCM Pauls – Olympia Park 863 homes and commercial centre

Benefits to Client

- Efficient and effective preparation and project management of Environmental Assessment documentation across wide range of development types
- Proven track record in unlocking development value through securing high value planning permissions with accompanying, market facing, robust environmental assessments



Gavin Winter

Title

Associate

Job Description /Role

Chartered Town Planner

Qualifications

BA (Hons), MA

Professional Memberships

MRTPI

Role on this Project or Framework

Planner, ES and Project Coordinator

Gavin is an Associate Town Planner at Spawforths with over 15 years' experience in the public and private sectors, joining Spawforths in 2003. Gavin provides professional advice to a broad selection of commercial clients and manages a varied portfolio of projects dealing with a range of planning issues, including the project management, coordination and negotiation of major development schemes, including Environmental Impact Assessments, large scale mixed use developments, industrial schemes and urban extensions.

Recent projects and achievements include being Project Coordinator for a strategic urban extension of Selby, securing its allocation in the Core Strategy and permission for 863 new dwellings, a new primary school, sports pitches, significant highway infrastructure, a public house/restaurant, and food retail unit.

Core Skills

- Good understanding and awareness of the public sector and their statutory requirements required when negotiating with the local planning authority
- Experience in Development Management, in particular Green Belt and heritage matters and Development Plan Site Promotion and EiP's
- Experienced Environmental Impact Assessment Coordinator including the preparation of screening and scoping requests and Full Environmental Statements
- Housing developments, viability and delivery
- Excellent project management skills, delivering a variety of scales projects
- Extensive knowledge and experience of stakeholder engagement and community consultation

Current and Recent Major Projects

- 863 dwellings and mix of commercial and community facilities at Selby
- Northern Gateway, mixed-use development, incorporating Logistics and Technology Park (1,507,000 sqft) 770 dwellings and local retail
- 3 million sqft logistic park at Grappenhall, Warrington
- 334 dwellings at Former Wakefield Power Station
- Local Retail Centre at Heathlands (29,600 sqft)
- 280,490 sqft employment space, Knowsley
- 200,000 sqft employment space at Salford
- 209 units and 56,414 sqft employment, Dudley
- 120 dwellings at Eggborough, Selby
- 70 dwellings at Ickleford, North Hertfordshire

Benefits to Client

- Extensive knowledge of planning matters, in particular experience of Environmental Impact Assessments
- Client focused with excellent communication skills
- Strong knowledge and experience in securing planning permissions for large-scale industrial and commercial developments
- Experience of working with a wide variety of clients and stakeholders

SIX 56 WARRINGTON ENVIRONMENTAL IMPACT ASSESSMENT COMPETENCY CAPABILITY STATEMENT

JUNE 2018

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1. INTRODUCTION
 2. EIA AND SCOPE OF SERVICES
 3. RELEVANT EXPERIENCE
 4. THE TEAM
-

INTRODUCTION

Introduction to Cundall



We are an international multi-disciplinary consultancy, operating from 20 locations across the globe. With sustainability at the heart of everything we do, our team of engineers delivers innovative, sustainable design solutions to address the project's whole life cycle.

We expect our engineers to consider the implications of their design for every project as a whole, as well as commenting on wider environmental issues across disciplines. We routinely design to LEED, BREEAM and Green Star standards, and our approach is always to look for those wider implications. This goes beyond simply meeting the requirements for benchmarking credits, while also acknowledging that these are important as a minimum requirement.

We are also the world's first consultancy to be formally endorsed as a One Planet Company by sustainability charity Bioregional.

Innovation isn't about being different for the sake of it, but being different when the project requires it.

Our mission is to play a key role in making buildings more energy-efficient, sustainable and cost-effective to operate.

Every project is an opportunity to make a positive difference and challenge ourselves to develop solutions tailored to our clients' requirements. We achieve this by listening, collaborating and using our local and global expertise. Whether we are focused on cost, programme or reduction in environmental impact, we look for options that will bring client benefit. We encourage innovation at every turn, but understand this shouldn't come at the expense of functionality.

A priority of all our projects is building strong relationships with our client and design team, based on open communication and Partner involvement throughout. Because of this, the vast majority of our work is repeat business. This produces better project outcomes, as everyone involved has a clear understanding of roles and responsibilities.

Core Services



Building services engineering

We offer an end-to-end service, extending from initial planning to construction fit-out, plus lifetime facilities management.

Our mission is to help design sustainable buildings which are more energy efficient and cost-effective to operate. Integration with our in-house civil and structural engineering and specialist teams enables us to devise the best possible solutions to ensure our clients' buildings are holistic, sustainable and futureproof.

Our approach is focused on offering best value by: analysing client needs, considering possible design options and delivering the most appropriate for location, development and budget.



Structural engineering

We provide structural engineering design services with our renowned analytical creativity and ingenuity. As a result, we have a high level of repeat clients. To deliver maximum value to our clients, we aim to be involved in projects from the very outset, which allows us to contribute to the development of fully integrated solutions.

This creates the greatest benefit and minimises the risk to budget and programme. Our approach is to use 3D modelling software to assist with integration on all our projects.



Civil engineering

Civil engineering is one of our core services and covers all sectors of the construction industry. We help to create, improve and protect the environment in which we live. We provide facilities for day-to-day life, and for transport and industry to function effectively.

We help each client identify both the constraints placed on development by regulatory requirements and site conditions and the opportunities that can be created through practical and innovative design.

We work closely with project teams and stakeholders to ensure project deliverables and goals are exceeded, while also providing sustainable solutions.



Sustainable design and Health & wellbeing

We are positioned at the forefront of sustainability in the built environment. This is because we take a refreshingly positive approach to engineering design, fostering collaboration and creativity. We are driven by the consideration of people.

We know going green and commercial pragmatism can happily co-exist, and use this knowledge on all our projects. We provide a service to suit all aspirations, as we are familiar with the latest energy and environmental legislation, green ratings and delivering zero carbon buildings.

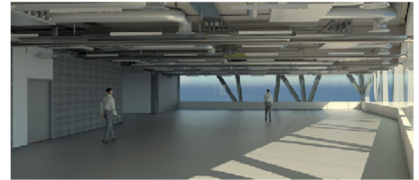
Specialist services



Acoustics



Building automation



Building Information Management (BIM)



Building Performance Services (BPS)



CDM consultancy



Data Centre Infrastructure Management (DCIM)



Fire engineering



Geotechnical engineering



IT and audio visual



Lighting design



Planning consultancy



Security consultancy



Survey solutions



Transportation



Vertical transportation

2 EIA AND SCOPE OF SERVICES

Six 56 Warrington EIA Capabilities



Cundall has been providing professional engineering consultancy for over 40 years while the Planning department within Cundall has been undertaking Environmental Impact Assessments (EIA) since 2003 with technical input into external EIA's pre-dating that. This experience and the technical and professional qualifications held by our staff means that we deem ourselves to be 'competent' under the 2017 EIA Regulations to prepare and review EIA work.

Cundall are preparing Technical Papers for Drainage/Flood Risk, Ground Contamination, Noise and Lighting with the following individuals leading each:

Flood Risk/Drainage – Lee French, Associate Director, is a Chartered Civil Engineer, with over 15 years' experience in flood risk, drainage design and assessing the impact from and to development sites.

Ground Contamination – Kevin McGee, Associate Director, is a Chartered Environmental Scientist with over 15 years' experience in ground investigation, transactional environmental due diligence and geoenvironmental and geotechnical assessments.

Noise – Rob Turner, Principal Acoustic Consultant, is an Audio Engineering degree qualified professional with over 10 years' experience in modelling and assessing the impact of noise generation and pollution.

Lighting – Andrew Bissell, Director of Lighting, is a Chartered Engineer and Fellow of the Society of Light and Lighting and Member of the Chartered Institute of Building Services with over 15 years of experience of delivering lighting schemes and assessing their impact

3 EXPERIENCE / CASE STUDIES

ITV Headquarters

Southbank London

This project was for the redevelopment of ITV's Television Studios and office complex located on the South Bank, London.

The final design for the redevelopment included a new podium structure facing on to the River Thames incorporating ITV's new Headquarters. An existing 25 storey office block would be demolished and replaced by a taller storey residential accommodation block. A new public 'destination square' would also be incorporated to provide open space and outdoor use for the client.

The proposed scheme was deemed by London Borough of Lambeth to be an Environmental Impact Assessment (EIA) scheme. Cundall were instructed to provide EIA coordination to provide a comprehensive Environmental Statement (ES) to review the potential impacts the scheme would have on the environment. The EIA included a Non-Technical Summary, the Main ES, a Townscape, Heritage and Visual Impact Assessment and Technical Appendices.

The Team worked closely alongside the project team and the sub-consultants to ensure a swift production of the ES to meet the client's application deadline, and incorporated our internal review of the ES, as well as producing a version for a Legal Review prior to submission.

There were particular challenges with this project, including the protected Westminster – St Paul's Cathedral Viewing Corridor in the London View Management Framework. Viewing Corridor dissected the site and restricted the height and footprint of the taller structures. There were also factors to consider including the South Bank Conservation Area, and the site's links with the potential Garden Bridge development immediately to the north.

Cundall also produced the Waste and Socio-Economics Chapters for the EIA. The Waste



Client: ITV
Sector: Commercial and Residential
Value: Confidential
Completion date: Estimated completion 2023
Architect: Hopkins Architects
Services: Planning
Images: Hopkins Architects©

Chapter included assessing the level of demolition, construction and operation waste anticipated to be produced and the Socio-Economics Chapter reviewed the potential benefits the redevelopment of the site would have at a local and regional level.

The proposed redevelopment is aiming for a BREEAM Excellent rating and were designed to be highly sustainable. The level of car parking spaces was reduced, electronic car charging stations to be installed and significant cycle parking provided.

The proposals also included a green roof solution across the site to improve biodiversity and aid rainwater attenuation, whilst integrating into a roof terrace for the client's employees.

Yorkshire Wildlife Park

Doncaster, UK

Yorkshire Wildlife Park first opened its gates to visitors in 2009 as a small wildlife park built on the site of an old farm attraction.

The Park defined itself in a different way to any other zoo, safari or wildlife park in the UK – as the first walkthrough Safari Park with a vision to provide exemplary welfare, conservation, education and visitor experience supported by sound commercial principles for a sustainable business into the future. YWP animals come from other collections, not the wild, to generally more optimal conditions.

Yorkshire Wildlife Park proposed a 60-hectare extension of the existing wildlife park incorporating the following elements such as; expansion of animal attractions, new restaurants and shopping facilities, additional car parking and the provision of a new hotel complex.

The proposed scheme was considered by Doncaster Metropolitan Borough Council to be an Environmental Impact Assessment (EIA) scheme. Cundall were instructed to provide EIA coordination to provide a comprehensive Environmental Statement (ES) to review the potential impacts the scheme would have on the environment. The EIA included a Non-Technical Summary, the Main ES, a Landscape and Visual Impact Assessment and other Technical Chapters.

The Team worked closely alongside the project architects and landscape designers to ensure a swift production of the ES to meet the client's application deadline.

There were challenges associated with this project associated with the requirements for archaeological investigation and recording. Previously discovered Roman remains near the proposed development led to the requirement for additional archaeological survey work across the site. There were also factors to consider



ILLUSTRATIVE MASTERPLAN

Client: Yorkshire Wildlife Park
Sector: Leisure and Tourism
Value: £ Confidential
Completion date: 2019
Architect: Melt
Services: Environmental Impact Assessment consultancy, civil and geotechnical engineering
Images: © COE Design / Melt

including increased traffic flows and impact on the local road network given the increased numbers of visitors to Yorkshire Wildlife Park.

Cundall also produced the Socio-Economic, Hydrology, Ground and Human Health Chapters for the EIA. The Socio-Economic Chapter reviewed the potential benefits of the extension to Yorkshire Wildlife Park would have at a local and regional level and the Human Health Chapter considered the wellbeing benefits associated with the Proposed Development.

Chapelgarth

Sunderland UK

The scheme consists of a 750-dwelling greenfield residential masterplan, set over 100 acres. Our role has been to provide planning and engineering support to develop the concept masterplan, prepare a hybrid planning application for the site (including the preparation of a full Environmental Impact Assessment) and design for a first phase of infrastructure.

We worked closely with the scheme masterplanners and landscape designers to develop a masterplan that worked with the site's complex topography. We also developed a strategic approach to sustainable urban drainage that integrated with the provision of large areas of natural greenspace required for ecological mitigation.

A particular challenge was developing a surface water drainage strategy that worked within the new requirements of the Council as Lead Local Flooding Agency and ensuring this could be designed in a way that coped with this phased development.

As we were co-ordinating a range of planning, engineering and environmental aspects of the project, this enabled synergy between intrusive ground investigations and archaeological assessment work, streamlining surveys and limiting disruption to the tenant farmer. We worked closely with the client to assist them in focusing such work to suit the phasing and early options being secured by housebuilders, as well as making sure intrusive SIs met with the more detailed housebuilder requirements.

Our team worked closely with the client / design team and the local planning authority to develop manageable planning conditions, limiting the number of upfront conditions while maximising the ability to make a prompt start on site.

The site has been assessed using igloo's Footprint® sustainability assessment framework. Our team has been closely involved in assessment workshops and seeking to maximise

June 2018



Client: Siglion LLP
Sector: Residential
Value: £100 million
Completion date: Ongoing
Architect: URBED
Services: Planning, transportation, civil and geotechnical engineering and acoustics.

opportunities for sustainable design and construction. We have also taken a proactive approach to client communication, with a dedicated Project Director and Project Manager who act as a first point of contact and ensure co-ordination between disciplines at Cundall, providing joined up service delivery.

Planning approval was secured in August 2016 and we are assisting the client in moving towards a start on site.

The Sill

Northumberland, UK

Cundall has worked with Northumberland National Park to create an exciting Landscape Discovery Centre, The Sill. The £11.2 million initiative aims to attract visitors to participate and inspire current and future generations to discover and enjoy the unspoilt natural and cultural landscapes.

Cundall was appointed in March 2013 to provide planning and lighting consultancy services to support the development.

This work has included:

- Extensive pre-application discussions with the Local Authority and English Heritage
- Screening the development for Environmental Impact Assessment
- Scoping the development for Environmental Impact Assessment
- Co-ordinating the Environmental Impact Assessment
- Developing a strategy for public engagement and organising, staffing and documenting a significant programme of community engagement
- Co-ordination of the Planning Submissions
- Co-ordination of the Scheduled Ancient Monument Application Submission
- Undertaking a Waste Management Plan
- Negotiation of scheme details to ensure a positive committee recommendation

Scheduled Ancient Monument Consent was granted and the planning application approved. Construction started in 2015 and the Centre opened in July 2017.

Cundall also completed a lighting assessment which was especially important given the granted Gold Tier Dark Sky Park status that had been recently awarded by the International Dark Skies Association. As a result of this award, The Sill site is now part of the largest area of protected night sky in Europe.

June 2018



Client: Northumberland National Park Authority

Sector: Lifestyle

Value: £11.2 million

Completion date: 2017

Architect: Jane Darbyshire and David Kendall Ltd

Services: Lighting design and planning

Images: © Jane Darbyshire and David Kendall Ltd

This lighting design work has focused on meeting the requirements of the international dark sky association. A number of the criteria to satisfy the IDA require a reduction in obtrusive light, i.e. sky glow and a reduction in the visibility of the building at night.

The completed lighting design does in fact reduce the amount of obtrusive light compared to the existing building which has been demolished as part of the work. Additionally, through good lighting design techniques and also incorporating the architectural fabrics such as automatically closing curtains when it is dark, the building will make a negligible visual impact on surrounding properties.

Tower Bridge Business Complex

London UK

The Biscuit Factory, is being developed on the site of the former Peek Frean's Biscuit Factory, which made biscuits in Bermondsey for 123 years, from 1866 until 1989 when the factory closed. The first mass producer of biscuits, it was home to baked goods like the Bourbon and the Garibaldi.

The triangular site extends over approximately 12 acres and is part of Tower Bridge Business Complex and consists of a collection of buildings that began in the Victorian age when this area first developed as a major centre for food production and is currently occupied by commercial and light industrial buildings.

Once completed, the development will provide Southwark with a major mixed-use scheme and its largest hub for small businesses, which is expected to support over 2,000 jobs. The redevelopment will provide 25,000m² of business space and 7,500m² of new business accommodation, as well as 800 new residential units.

The site will be extensively landscaped to provide open and accessible amenity spaces. The development is to be delivered in phases over a ten-year period. The commercial development is targeting a BREEAM "Excellent" rating and the residential units will be designed to achieve Code for Sustainable Homes Level 4. The residential development covers a variety of different unit types including; townhouses, apartments and affordable housing.

Cundall has extensive experience working on similar redevelopments and has been appointed to provide a wide range of engineering services associated with producing a planning application for the site and contributing to the Environmental Impact Assessment. As part of the site wide energy strategy we have investigated integrating the development into a proposed district heating network and assessed the utility demand for the



Client: Workspace Ltd

Sector: Mixed-use

Value: £100 million

Completion date: 2019

Architect: Alford Hall Monaghan Morris

Services: Building services, structural, civil engineering, sustainable design, geotechnical, acoustics, fire engineering, waste management and vertical transportation

Images: © Uniform and AHMM

development to verify that there is sufficient capacity in the local utility networks.

Acoustic surveys and vibration surveys have been carried out to assess the impact of the development on the surrounding properties and to assess the impact of the noise and vibration from the railway viaduct on the proposed residential units. A 3D analytical model has been produced to enable accurate prediction of the sound propagation between buildings and test the viability of acoustic mitigation measures.

Parkside

St Helens

Cundall was responsible for Civil Engineering, Geotechnical Engineering and Acoustic/Lighting Consultancy on the proposed 66 ha Employment Park for the JV between Langtree and St Helens Council.

In addition to the discipline responsibility, Cundall was the lead Engineer for the Masterplan informing the Architectural decisions.

The site is the former Parkside colliery, located to the south of Newton-le-Willows which began production in 1964.

The scheme was designed to regenerate the disused site while protecting the surrounding green space and improving transportation access with a new link road and M6 junction improvement works.

The former use of the site presented many engineering challenges to overcome, particularly regarding potential contamination from the old colliery spoils.

The proposed earthworks and lighting and noise designs required a huge collaborative effort due to the surrounding residential setting and large platforms proposed for the building units.

With the site boundary being an EA main river which the proposed storm water was to outfall, Cundall produced a truly sustainable drainage solution with swales, ponds and basins being integrated into the landscaping providing 3 levels of water quality treatment.



Client: Langtree

Sector: Masterplanning

Value: £155 million

Completion date: Ongoing

Architect: Fletcher Rae

Services: Civil and geotechnical engineering, acoustics and lighting design.

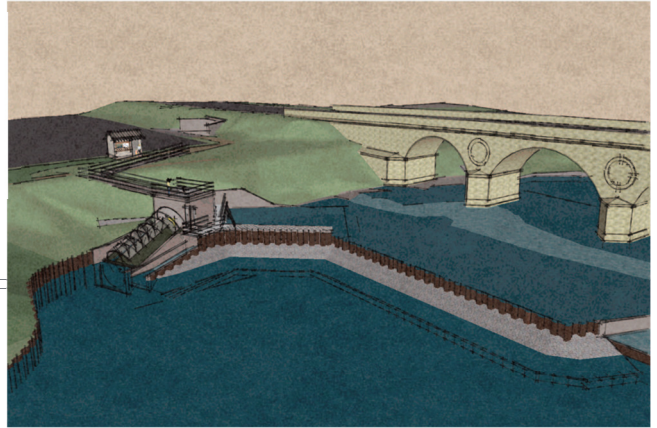
As part of the planning application, an EIA was also produced with Cundall producing technical papers for all discipline appointments including Drainage, Flood Risk, Ground, Noise and Lighting

Hexham Community Hydro Project

Northumberland, UK

Cundall provided EIA Screening and Scoping services of this project to erect an Archimedes Screw type hydro-electric generation scheme under a Listed Bridge in Hexham and adjacent to a Scheduled Ancient Monument.

Cundall were involved in extensive negotiations with the statutory authorities and procurement of specialists surveys to accompany the scoping exercise.



Client: Hexham Community Partnership

Sector: Infrastructure

Value: £5 million

Completion date: TBC

Architect: Kevin Doonan Architects

Services: Planning, Environmental Impact Assessment, Building services, structural, civil engineering, geotechnical, acoustics, transportation

Alpine Coaster

Sentosa, Singapore

Cundall undertook a high-level EIA Scoping exercise for a proposed leisure attraction on Sentosa Island for Skyline Luge Sentosa. This steeply sloping site was partially in the buffer zone of Mount Imbiah Nature Reserve and key issues included slope stability, impact on trees and ecology, noise and construction traffic.

This early work was in support of Skyline Luge's expression of interest to lease the site from the Sentosa Development Corporation.



Client: Skyline Luge Sentosa

Sector: Lifestyle/Infrastructure

Value: £10 million

Completion date: TBC

Architect: TBC

Services: Planning, environmental impact assessment, structural, civil engineering, geotechnical, acoustics

4 THE TEAM



About Lee

Lee joined Cundall in 2001 and is a Chartered Civil Engineer, Member of the ICE and Chartered Construction Manager, Member of the CIOB.

Lee has led and managed design teams and projects in the UK, Middle East & Africa. In addition to managing teams within a design office, Lee has also had experience residing on Construction Sites managing consultants and design implementation.

The majority of Lee's experience lies within the Infrastructure & Masterplanning sector but he has broad experience across all. Lee's design and management experience includes externals, earthworks, landscaping, finishes, highways, drainage, service co-ordination, multi-discipline project management and flood risk assessments in high risk areas.

Lee is also a keen researcher and writer in the fields of urban drainage, flood resilience and environmental impacts. His highlight being co-authoring the book "Flood Hazards: Impacts and Responses for the Built Environment", 2011.

Role on this project

Drainage/Flood Risk Chapter

Lee French

Associate Director

BSc (Hons) CEng MICE MCIQB

Relevant projects and experience

Industrial

BAE Systems, Washington, UK

Managed the external works design for the new 30 000m² manufacturing facility in Washington which included concrete pavement infrastructure and surface water attenuation design.

Parkside Re-Development, Manchester, UK

Project manager for the EIA re-development of the former 66 ha Colliery site which included Drainage, Flood Risk, Ground, Noise and Lighting input.

Chapelgarth, Sunderland, UK

Project lead and Drainage specialist for the infrastructure and masterplan EIA development to serve approx. 1000 homes which included high specification detention basins and a tiered SuDS network.

the basement car park which spanned majority of the site at high levels.

Tower Bridge Business Complex, London, UK

Drainage and Flood Risk lead for the Zone 3 EIA redevelopment of the existing Tower Bridge business complex in London behind the Thames defences. The new development included residential and commercial uses with mitigation measures including raised podiums.



Kevin McGee

Associate Director

BSc CSci

About Kevin

Kevin joined Cundall in September 2013 to deliver our geotechnical and geo-environmental consultancy services. He undertakes project management and provides technical support within the geotechnical team, which provides an advisory and design service in all aspects of geotechnical and geo-environmental engineering.

Kevin is a commercially focussed geo-environmental specialist with a broad spectrum of experience within contaminated land, geo-environmental engineering and engineering geology, together with client liaison, business development, and contracts management. He has particular expertise in site investigation / risk assessment and the development and management of remediation schemes for complex and difficult sites. He has worked on a broad range of schemes from simple greenfield residential sites through to complex multi-million pound hydro-electric and nuclear schemes with challenging ground conditions and engineering and logistical constraints.

Kevin has also presented as expert witness at public enquiry and provided technical support on challenging planning cases.

Role on this project

Ground Chapter

Relevant projects and experience

Site Investigation (contaminated land, engineering geology and geo-environmental)

Kevin has designed, managed and reported numerous investigations for site acquisition, disinvestment, forensic investigations, Part 2A assessments and infrastructure, including near shore, off shore, overseas, and investigations in difficult and mountain terrain. More recent experience has seen Kevin undertake projects for large residential schemes, schools, healthcare and retail developments throughout the north of the UK.

Remediation of Contaminated Land

Responsible for the development and implementation of remedial strategies and supervision and verification of remedial works for numerous contaminated and geotechnically challenging sites.

Due Diligence & EIA

Acted as the geo-environmental specialist on numerous due diligence and EIA schemes including PFI and highways schemes. He has also undertaken pre acquisition due diligence and site appraisal within the commercial, industrial and residential sectors.



Robert Turner

Principal Acoustic Consultant

BSc(Hons)MIOA MIHEEM MANC

About Rob

After training in Audio, Video and Broadcast Engineering at the University of Salford, with a year-out working at a pro-audio company in central London, Robert joined a multi-disciplinary consultancy, specialising in acoustics in 2005.

Robert subsequently joined Cundall in 2015, focusing on the field of environmental and architectural acoustics, with particular interest in natural ventilation solutions and building services noise.

Robert is a client-facing engineer who engages with end users and other design team members to determine and develop appropriate acoustic strategies. Robert takes overall acoustic design responsibility for the delivery of projects from feasibility stage to practical completion.

Robert has acted as lead consultant on a significant number of projects.

Role on this project

Noise Chapter

Relevant projects and experience

101 Embankment, Manchester, UK

Between 2009 and 2015, Robert was the lead consultant in charge of the acoustic design for the development of Building 101 at the flagship Embankment scheme in Manchester. The completed scheme will deliver 165,000 sqft of office accommodation over ten storeys with a multi-storey car park beneath. Robert's responsibilities covered all acoustic aspects from Planning / environmental noise issues to internal concept design and construction oversight. This development is due to complete in summer 2016 and has a total capital build cost £56m.

Clifton House Low Secure Unit, York, UK

Lead consultant in charge of the acoustic design for a £10m Low Secure Unit at Clifton House, York. Scheme incorporates 22 bedrooms, a gym, café and staff / ancillary areas. Responsibilities covered all acoustic aspects from Planning / environmental noise issues through to internal design and pre-completion testing. Scheme successfully handed over to Leeds and York Partnership NHS Foundation Trust in Spring 2014.

Parkside Re-Development, Manchester, UK

Lead Consultant for the EIA re-development of the former 66 ha Colliery site which extensive acoustic modelling of the proposed bund mitigation from the industrial units.



Andrew Bissell

Director

BEng (Hons) CEng MIET MCIBSE FSLL

About Andrew

Andrew joined Cundall in 2006 and has 15 years' experience in the field of lighting design and engineering.

He heads up Cundall Light4; offering specialist lighting design and expertise, carefully considering all the elements of the process – landscape lighting strategies, daylight design, architectural lighting design and commissioning.

Andrew has been involved in a European Union innovative procurement initiative which aims to bring to market more innovative products and solutions in the field of ultra-efficient lighting and controls.

He has also contributed to the re-write of CIBSE LG5, Lighting for Learning and the EFA Baseline Design Output Specification. Andrew is also a Director of IMI.

Role on this project

Lighting Chapter

Relevant projects and experience

Sevenside Energy Recycling, UK

Andrew completed the lighting design and environmental impact assessment for a new energy recycling facility. The key receptor was the severn estuary and the embankment which had been identified as a site of special scientific interest.

Cornwall Energy From Waste, UK

Andrew completed the lighting design and environmental impact assessment for a new energy recycling facility. The key receptors included a number of farms and an adjacent dual carriageway. The assessment also included the control on the internal lighting with respect to causing light pollution.

Binn Moving Grate EfW, Scotland, UK

Andrew completed the lighting design and lighting impact assessment for the energy from waste facility in Perthshire, Scotland. The area was particularly sensitive with regards light pollution as the site sits in a class Z0 zone, i.e. a rural setting. As such the light pollution, sky glow and light spill criteria are the most stringent.

Trumps Farm EfW

Andrew completed the lighting design and environmental impact assessment for a new energy recycling facility. The key receptors included a number of farms and an adjacent dual carriageway. The assessment also included the control on the internal lighting with respect to causing light pollution.

Asia Australia Europe MENA UK Ireland



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www.linkedin.com/company/cundall



www.cundallconversations.com



www.cundall.com



Curtins were established in 1960 and have 14 offices throughout the UK and Ireland, specialising in civils, structures, transport planning, environmental and infrastructure engineering services. Our North West Transport Planning team has 15 members of staff and is headed by Alex Vogt (Technical Director).

Alex has a wide range of experience in traffic engineering and transport planning having spent 16 years working for both private and public-sector clients. He has worked in various different sectors and has appeared as an expert witness at Public Inquiry.

Alex is a Fellow of the Chartered Institute of Highways and Transportation and in 2016 he obtained the Transport Planning Professional qualification. He also holds a degree in Geography and a Master's degree in Traffic Engineering and Transport Planning.

Alex is the primary author of the ES chapter and has authored numerous other chapters throughout his career.

Landscape / Townscape Visual Impact Assessment

Landscape / Townscape Visual Impact Assessment (LVIA/TVIA) can be key to effective planning decisions since it helps identify the effects of new developments on views and on the landscape itself. These effects can be quite different. Some developments can have visual effects but limited effect on the landscape character and some vice versa. A depth of analysis and understanding of these two interrelated aspects is required to produce a successful LVIA/TVIA.

LAYER have produced LVIA /TVIA in landscapes and cities across the country, from an ANOB in Gloucestershire to high-density city centres such as Manchester and Liverpool.

As Part of our LVIA work, we also manage the work of sub-consultant's (photography and digital visualisation) to provide a complete LVIA/TVIA service.

LAYER Landscape Architecture Team

Simon Tugby – Landscape Architect & Director

Simon has been involved with numerous Landscape Architecture and Public Realm Strategies and a number of LVIA's/TVIA's from small scale mixed use schemes to large commercial and industrial developments.

Qualifications

BA (Hons) BLA CMLI

Chartered Member of the Landscape Institute

Key Projects

Parkside Colliery, Warrington – Landscape & Visual Impact Assessment undertaken for an outline planning application for the construction of up to 92,900m² of employment floorspace with associated services and infrastructure.

Freemasons Row, Liverpool – Townscape & Visual Impact Assessment undertaken for the demolition of existing built form and replacement with 11-15 storey interconnected residential apartment building with ground floor commercial units, residential gym and associated access, services, parking and landscaping.

Monarchs Quay, Liverpool – Townscape & Visual Assessment undertaken for a full planning application for a mixed use development comprising commercial / leisure, car parking provision and ground floor retail and residential accommodation.

Matthew Warner – Landscape Architect & Director

Matthew has been responsible for the delivery of some of Manchester's most significant public realm projects of the last 8 years. His portfolio experiences stretches from small-scale public realm interventions to large town centre strategies.

Qualifications & Awards

BA (Hons) PgDip LA

Landscape Institute Yorkshire & Humber Prize for Best Portfolio

Key Projects

Gloucester Services Hotel – Landscape & Visual Impact Assessment undertaken for a proposed hotel development adjacent to the Gloucester Services Southbound development.

Pete Coe – Landscape Architect

Pete has worked in both public and private sectors and has undertaken a broad spectrum of work. Pete has not only created LVIA's/TVIA's for various residential, commercial industrial and infrastructure projects, but has also undertaken LVIA reviews and Expert Witness for different Local Authorities in relation to urban extension and housing development projects.

Qualifications

BA Dip LA CMLI

Chartered Member of the Landscape Institute

Key Projects

Parkside Colliery, Warrington – Landscape & Visual Impact Assessment undertaken for an outline planning application for the construction of up to 92,900m² of employment floorspace with associated services and infrastructure.

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Monarchs Quay, Liverpool – Townscape & Visual Assessment undertaken for a full planning application for a mixed use development comprising commercial / leisure, car parking provision and ground floor retail and residential accommodation.

Threapland Lees Windfarm, Bothel, Cumbria – Works undertaken as part of an Environmental Impact Assessment (EIA) for an extension to an existing wind farm at Threapland Lees Farm, Cumbria.

Kendal Flood Protection Scheme, Kendal – A multi-million pound scheme to provide flood protection to the town following the flooding caused by storm Desmond in 2015. The scheme runs through rural and peri-urban areas as well as through the urban centre and sensitive heritage areas. The project involved detailed consideration of a variety of factors key of which were landscape/townscape and visual considerations as well as ecological and heritage issues which required a range of flood protection measures to be provided with careful attention to finishes.

Tank Farm Urban Extension, Chipping Norton, Oxfordshire – Works undertaken to support the allocation of land in the ownership of the Oxfordshire County Council (OCC) for a residential led, mixed use development site.

Capability Statement

John Moorcroft (Ecology Associate) BSc, MSc, MCIEEM, CEnv.

John is a Chartered Environmentalist and full member of Chartered Institute of Ecology and Environmental Management (CIEEM), with over 15 years of experience in ecological consultancy and 30 years' experience in Environment sector work. He is an accomplished field surveyor and has extensive experience of habitat assessment. He holds survey licences for bats, great crested newts and white clawed crayfish and has held European Protected Species development licences in respect of great crested newts. He is also an experienced tree climber with extensive experience in the identification of tree roosts for bats. He has particular expertise in the management of habitats for nature conservation particularly woodland and lowland peatlands and has been involved in the design of a number of conservation areas and the management of several nature reserves. John is experienced in producing ecological impact assessments, including ES Chapters (and where necessary Habitats Regulations Assessment) for environmental assessment of developments across a wide range of sectors. He has an extensive knowledge of planning policy and legislation relating to ecological resources.

Lisa Davies (Partner) BSc, MA, ACIEEM

Lisa Davies is a Partner at Tyler Grange where she heads up the Manchester office and the national ecology team. Lisa has a Master's degree from Manchester University in Environmental Impact Assessment. She also has over 8 years' experience providing ecology input into EIA projects ranging from large scale residential development to significant infrastructure projects. Lisa has provided ecology advice to a wide range of public and private sector clients in accordance with best practice guidance and is fully conversant on the latest legislation and policy. Lisa is a member of the Chartered Institute of Ecology and Environmental Management and adheres to their Code of Conduct.

Laura Dennis (Senior Ecologist) BSc, MSc, GCIEEM

Laura is a Senior Ecologist at Tyler Grange working in the Manchester office. Laura has an MSc in Biodiversity and Conservation from Leeds University and is a member of the Chartered Institute of Ecology and Environmental Management. She has five years ecological consultancy experience working on a range of commercial and residential projects throughout the UK and has been involved in preparing Environmental Statement chapters for a number of schemes for private sector clients.

Capability Statement – Socio Economic

AMION Consulting is a public sector consultancy practice founded in 2000 by two former senior consultants from KPMG. Its senior staff are all established practitioners, each of whom has proven national expertise in the economics, policy and strategy, physical development, finance and business, property management and implementation fields. With regard to assessing the significance of socio-economic effects, AMION has a team of specialist economists with substantial experience, knowledge and a successful track record in carrying out economic impact appraisals and evaluations. This has included undertaking, as well as critically reviewing, socio-economic assessments as part of EIAs for a wide range of high-profile projects.

The economist at AMION who has led the assessment of the socio-economic effects is a Partner Director at the firm with over 15 years' consultancy experience, currently providing guidance to government on the economic appraisal of physical development interventions.

CAPABILITY STATEMENT – AIR QUALITY

Organisations engaged in assessing the significance of air quality impacts should hold relevant qualifications and/or extensive experience in undertaking air quality assessments. The RPS air quality team members have professional affiliations that include Fellow of the Institute of Air Quality Management, Chartered Chemist, Chartered Scientist, Chartered Environmentalist and Member of the Royal Society of Chemistry and have the required academic qualifications for these professional bodies. The work undertaken has been designed and managed by RPS, which has ISO9001 and ISO14001 certifications for its Quality Management System and Environmental Management System, respectively.

The air quality professional having the role of Project Director on this assessment, responsible for the assessment design and authorising all deliverables, is a Fellow of the Institute of Air Quality Management, Chartered Chemist, Chartered Scientist, and Member of the Royal Society of Chemistry with over 25 years' experience. The CVs of the Project Director and the RPS air quality team member conducting the assessment are attached.

RIDGE

PROPERTY & CONSTRUCTION CONSULTANTS

**RIDGE MEP CAPABILITY STATEMENT FOR
LAND AT JUNCTION 20 OF THE M6/M56 INTERCHANGE**

3rd November 2017

Prepared for

Langtree PP
St. James Business Centre
Wilderpool Causeway
Warrington
WA4 6PS

Prepared by

Ridge and Partners LLP
1b Abito
85 Greengate
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M3 7NA
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1. CAPABILITY STATEMENT

The Ridge MEP team have the in house design expertise to carry out the utilities design services associated with the “land at Junction 20 of the M6/M56 interchange point” project.

The Ridge MEP team have worked on several similar large-scale developments comparable to the above project.

Some examples of similar projects the Ridge MEP team have worked on includes;

- Parkside development for Langtree PP
- Cuerden Strategic Site for Lancashire County Council
- Hollinwood scheme for Langtree PP

The above are of a similar size and scale to the “land at Junction 20 of the M6/M56 interchange point” project.

Chris Bradburn (Partner) and Carl Niland (Associate) are directly involved with the above schemes and will lead the MEP delivery on this project. CV's of Chris and Carl are attached.

2. CV'S



CHRIS BRADBURN

Position	Partner
Discipline	Building Services
Qualifications	BEng (Hons) – MCIBSE MIOP - LCC

Profile

Chris leads the Building Services Department of Ridge in the North of England being based in Manchester.

Chris has over 34 years' in the Building Services Industry in a wide variety of sectors including Public Sector Buildings, Commercial offices, Retail, Residential, Education, Industrial and Distribution.

Very much still a "hands on" Engineer with a wealth of experience and a proactive/collaborative approach to working with all members of the Design and Construction teams.

Relevant Capabilities

Having a trade background and a wealth of knowledge about different types of buildings in various sectors, Chris brings a practical approach to the design of Building Services. Always pushing design for the best value and the most robust solutions that meet the client brief and are practical to operate and suitable for the end users.

Chris has a strong background CIBSE Low Carbon Consultant and also an approved Carbon Trust Consultant. He can offer practical experience of Low Carbon Solutions and will be pivotal in pushing sustainable and Low Carbon design solutions.

Chris understands the importance of managing his team to meet deadlines and design within budget constraints of projects.

Experience of both new build and refurbished buildings including listed buildings will support the overall capability of the team

Relevant Experience

Parkside Colliery, Newton-le-Willows

Duties included the utility design services for the proposed gas, water, electric and telecommunications services, key duties included;

- Applications for a new point of connections (PoC's).
- Liaison with asset owners to assess diversions and disconnections.
- Production of existing and proposed utility drawings in accordance with Masterplans.
- Input/production of utilities services for the environmental statements for planning submission.

Cuerdens Strategic Site, Lancashire County Council

The Ridge MEP team's duties included the proposed utility services designs and applications for new connections required for the proposal mixed use development.

The scheme includes large scale industrial warehouse units, offices / business park, retail stores and a residential development.

The scheme required a new 33kV Primary sub-station to serve the site.

Hollinwood Development

The Ridge MEP team's duties included the proposed utility services designs and applications for new connections required for the proposal mixed use development.

The scheme includes industrial warehouse units, offices, restaurants, retail stores, sports hall and a residential development.

**CARL NILAND**

Position	Associate
Discipline	Building Services Engineering
Qualifications	HNC with over 20 years design experience

Profile

Carl leads an Electrical design team; he has a wide variety of experience, successfully delivering projects from heritage/ listed, Grade A offices, high end residential, educational buildings, retail, and laboratories.

Carl believes in a collaborative approach with clients to establish clear briefs, in order to fully understand a client's requirements and expectations.

Coming from a trade apprenticeship background, Carl brings a practical knowledge as well as engineering solutions to projects, and has an excellent understanding of the specific project needs.

Carl has worked with many leading architects, clients and project managers from early stage concept and strategy advice through to detailed design, site supervision and delivery.

Working on the University of Manchester framework for many years, Carl worked closely with the estates team, project managers, building manager and end users, delivering wide-range of projects from new builds to refurbishments, many of which being listed buildings.

With a wealth of experience in various sectors, Carl is able to fully understand and work with the various specialist technologies available and offer innovative solutions.

Relevant Experience**Parkside Colliery, Newton-le-Willows**

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The scheme includes industrial warehouse units, offices, restaurants, retail stores, sports hall and a residential development.



CAPABILITY STATEMENT - WASTE

- 1.1 The work has been prepared and managed by RPS, which is a founder member of the Institute of Environmental Management and Assessment (IEMA) and an accredited Quality Mark member. The work has been prepared in accordance with RPS's ISO 9001 and ISO 14001 certified Quality Management and Environmental Management Systems.
- 1.2 The RPS Author, Clare Russell, is an EIA Practitioner with IEMA and has the required qualifications and experience for the professional body. She has 18 years' experience in environmental consultancy specialising in Environmental Impact Assessment and the assessment and management of construction impacts. She is also an Affiliate Member of the Chartered Institute of Waste Management.
- 1.3 Clare also has a very good understanding of waste management and specialises in assessing the impacts of waste arising from the construction and operation of developments. She has prepared chapters/technical documents for various projects including:
- Parkside Regeneration;
 - Broadoak Residential Development;
 - Tetney Oil Pipeline Replacement;
 - M4 Corridor around Newport;
 - Hornsea Project Three Offshore Wind Farm; and
 - South Hook Combined Heat and Power Plant.



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Swainsea House, 74 Middleton Road, Pickering, North Yorkshire, YO18 8NH

My name is Patrick Stephenson (BSc Hons Agriculture) I have been responsible for agricultural assessment work undertaken as part of the Environmental Impact Assessments, on major road improvement schemes, planning developments, and change of use requirements for agricultural land for over 25 years. This involves the collection and analysis of farm data, either via published data or on farm surveys to the prepare reports for various Government departments. Subsequently many have been used as an inclusion in environmental statements, often leading to attendance at Public Consultations and subsequent Public Inquiries. Most of the reports require a detailed agricultural land classification work which I have undertaken and included in the report. Work has been undertaken for utilities companies, large and small businesses. Listed below are a collection of the schemes I have worked on to provide detailed assessments:

- a) National Power North Yorkshire/Cleveland Powerline.
- b) Yorkshire Electricity Board Powerline Diversion, Lofthouse.
- c) National Power High Voltage Line, Spalding.
- d) Kelt Vale of Pickering Sour Gas Power Station
- e) Greater Manchester Northern and Western Relief Road.
- f) M1/M62 Motorway Link.
- g) A1 Improvements - Redhouse to Ferrybridge. Dishforth to Ferrybridge.
- h) A64 Upgrading - Malton to Seamer.
- i) A616/A628 Saltersbrook to Stockbridge Improvements.
- j) M6 Widening junctions 16 to 20.
- k) A12 Wickham Market to Saxmundham - Public Inquiry.
- l) A523 Poynton Bypass.
- m) A167 Cock O' the north
- n) A1079 Shiptonthorpe Bypass.
- o) A1 (M) Wetherby to Bramham Service Road.
- p) A66 Great Clifton Bypass - Public Inquiry.
- q) A65 Westhouse Bypass.
- r) Linsdale Bypass
- s) National Coal Board Development
- t) A27 Fontwell Improvement
- u) A41 Norman's Heath - Public Inquiry
- v) Honeybourne to Sapperton National Grid Pipeline
- w) M 60 Road improvement scheme
- x) A1 Dishforth to Scotch Corner Improvement
- y) National Grid carbon capture scheme Drax
- z) Various housing development proposals Barnsley, Doncaster, York, Holmes Chapel, Leeds and Knutsford

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BWB

Jim MacQueen BA (Hons)

Jim MacQueen is the service lead for Environmental Planning in BWB which is IEMA Quality Mark certified. Jim specialises in heritage and has over 17 years' experience in Heritage consultancy. He is currently responsible for the management and coordination of a wide range of projects including heritage risk appraisals, heritage assessments, historic landscape assessments, environmental impact assessments and statements, linear schemes and those involving the monitoring and management of archaeological sub-contractors. Jim's experience spans both the public and private sector and he has worked on numerous projects which have required the technical authoring of the Cultural Heritage Technical Paper for the Environment Statement.



ES Part I Appendix I 6

Six 56 Warrington

Lighting Impact Assessment

Langtree + Panattoni

Job No: 1015524
Doc Ref: 1015524-RPT-LG-003
Revision: A
Revision Date: 21 July 2020


Project title	Six 56 Warrington	Job Number
Report title	Lighting Impact Assessment	1015524

Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
—	15/07/2020	Planning
A	21/07/2020	Planning

Document Validation (latest issue)

21/07/2020

X 


Hannah Murphy
Lighting Designer
Signed by: Murphy, Hannah

21/07/2020

X Liz Skelton

Checked by
Signed by: Skelton, Liz

21/07/2020

X 

Verified by
Signed by: Tweedale, Mark

Executive Summary

Langtree + Panattoni are proposing to redevelop the area situated within the Six 56 Warrington located immediately South East of Warrington. The site safety and security lighting located within the development area will not have an adverse effect on the residential properties to the North or the South of the development, if the lighting techniques and mitigation highlighted in this document are adhered to. The use of trees will act as an obstruction to the site and will therefore limit any light spill and sky glow. Care must be considered for any lighting adjacent to Bradley View site and further tree obstructions may be required for the area.

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1.0

Introduction

1.0 Introduction

Cundall Light4 were commissioned by Langtree + Panattoni to undertake a lighting impact assessment at the Six 56 Warrington site.

A baseline study during the daytime and night-time were undertaken to assess the likely impact of the existing external lighting on the residential buildings and ecology, in the area immediately surrounding the development site. The assessment includes a summary of the existing lighting found within the area to measure the baseline condition.

A lighting strategy aimed at minimising light spill was then developed during the detailed design phase of the project whereby lighting calculations were undertaken to ensure legislation is met.

Impacts of the proposed lighting have been considered. A light spill assessment has been prepared and the results regarding lux levels, light spill, source intensity and sky glow will be included in drawing BSXX(63)4001 Lighting Lux Level Plot.

The report provides details of the key impact generators associated with the lighting during both construction and operational life of the development. Whilst also providing details of proposed mitigation based, in part on the ILP Dark Skies guidance and an assessment of the likely residual effects of construction and operational mitigated lighting.

1.1 Development Site

The site has not yet been developed and is located South of Grappenhall, Warrington.

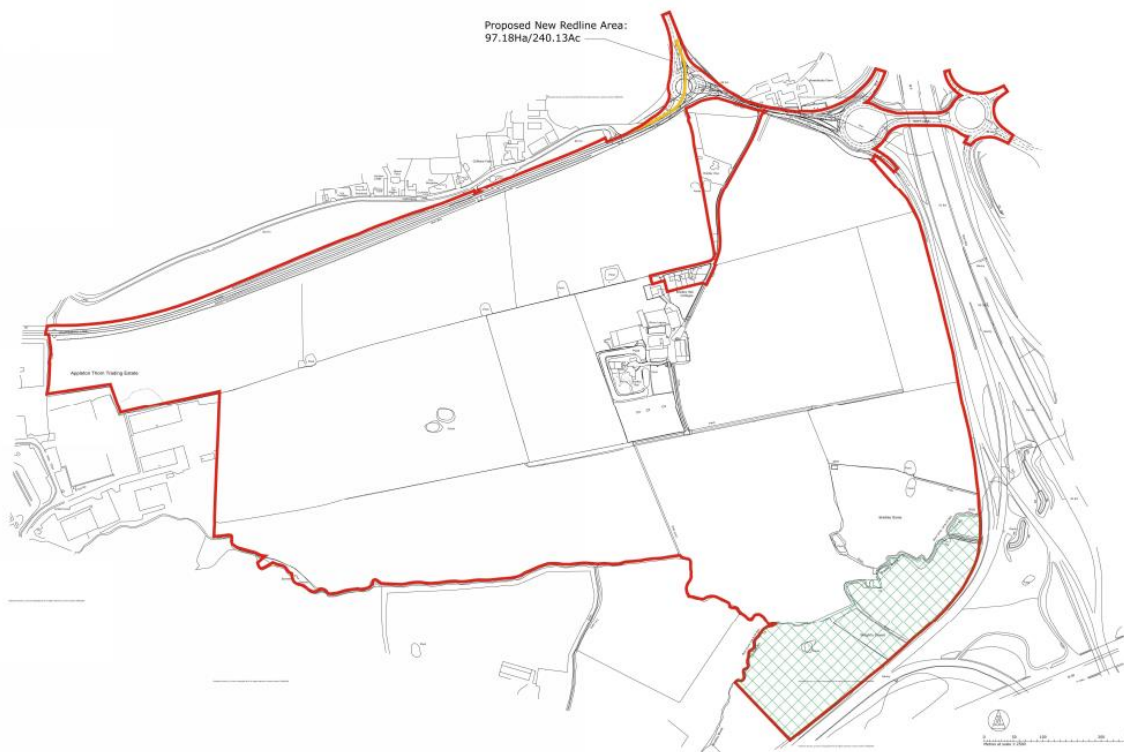


Figure 1 – Red line location

1.2 Light Pollution

When the CPRE light pollution study was conducted in September 2016 the site was relatively undeveloped farmland, however due to the surrounding areas already submitting high levels of brightness there is a moderate to high amount of light pollution to the site.

The map below provides an overview of the recorded light pollution on the site ahead of any construction work. The site borders on the moderate to high brightness of the adjacent M6 motorway to the East and the Barleycastle Trading Estate to the North West of the site.

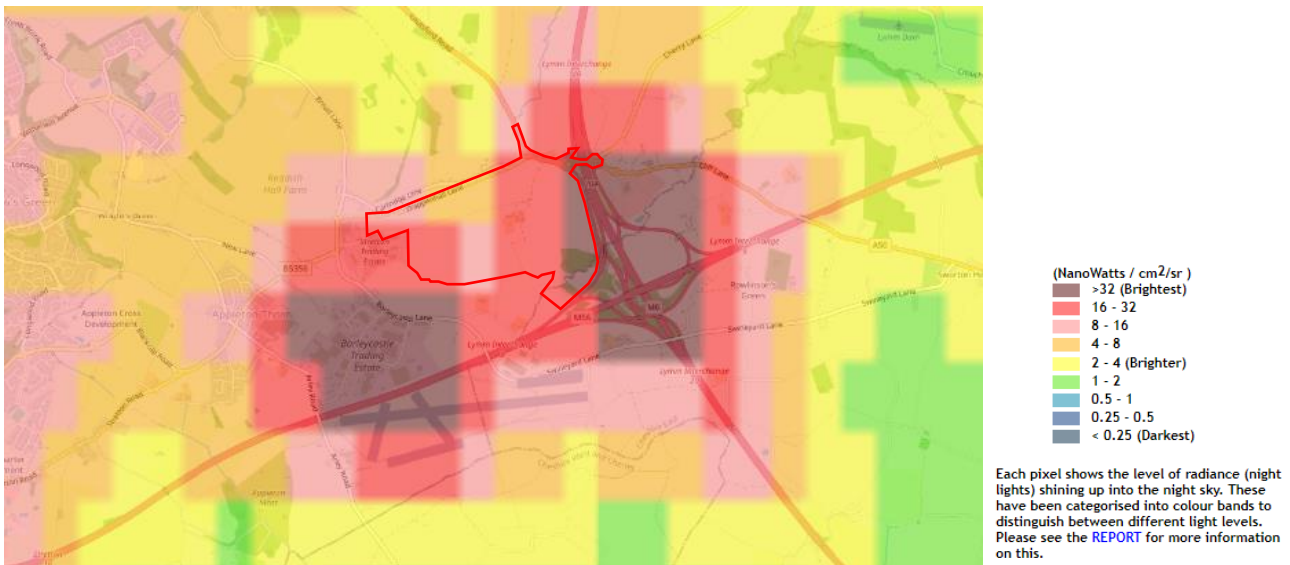


Figure 2 – CPRE Light Pollution map for the proposed site (Source: CPRE website)

2.0

Policy Context

2.0 Policy Context

2.1 Legislation

2.1.1 The Planning (Clean Neighbourhoods and Environment) Act 2005

- The legislation governing light pollution is the Planning (Clean Neighbourhoods and Environment) Act 2005. It applies to “artificial light emitted from premises so as to be prejudicial to health or a nuisance”. The relevant section is 102.
- Section 102 defines the premises to which the act applies. Shopping centres, residential properties and offices are not exempt.

2.2 National Planning Policy Framework (February 2019)

2.2.1 Paragraph 180 c)

- limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

2.3 Local Planning Policy

2.3.1 Warrington Borough Council – Supplementary Planning Document, Design and Construction (October 2010)

- Chapter 5 – Sustainable Design and Construction, states that;
- The assessment should show that the proposed design provides adequate lighting to enhance safety during the day and at night
- Chapter 9 – Landscaping in New Development states;
- Provide lighting along footpaths to and through open spaces
- Chapter 17 – Design and Crime, Industrial Estates and Business Parks Development Checklist states that;
- Lighting is directed towards entrances and exit points, car parks and service yards
- Proposed lighting is compliant with British Standard 5489 part 2
- There are no blind spots
- Chapter 17 – Design and Crime, Car Parks Development Checklist states that;
- Parking bays, footpaths, circulation routes and entrance/exit points are all well lit
- Lighting is in accordance with British Standard 5489 part 9

2.4 Industry Standards

2.4.1 Institute of Lighting Professionals (ILP formally the ILE), Guidance note on the reduction of obtrusive light, (GN01:2020)

- The ILP Guidance note sets out the industry standard for numerically measuring, (both through lighting design calculations and on site), the light spill from lighting into windows, sky glow, source luminance and building façade brightness. The ILP guidance note provides illuminance, luminance and percentage figures which must be satisfied both pre-and post-curfew for various types of environmental zone classifications. See tables 1-8 below.

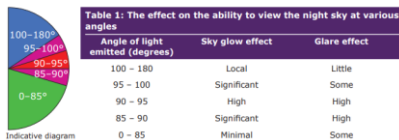


Table 1 - Ability to view the night sky

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban districts
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Table 2 - Environmental Zones for Sky Quality Measurements

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E _v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx	1 lx	2 lx	5 lx

Table 3 - Obtrusive Lighting Limitations for Exterior Lighting Installations

Light technical parameter	Application conditions	Luminaire group (projected area A _p in m ²)					
		0 < A _p ≤ 0.002	0.002 < A _p ≤ 0.01	0.01 < A _p ≤ 0.03	0.03 < A _p ≤ 0.13	0.13 < A _p ≤ 0.50	A _p > 0.5
Maximum luminous intensity emitted by luminaire (I in cd)	E0	0	0	0	0	0	0
	Pre-curfew	0	0	0	0	0	0
E1	Pre-curfew	0.29 d	0.63 d	1.3 d	2.5 d	5.1 d	2,500
	Post-curfew	0	0	0	0	0	0
E2	Pre-curfew	0.57 d	1.3 d	2.5 d	5.0 d	10 d	7,500
	Post-curfew	0.29 d	0.63 d	1.3 d	2.5 d	5.1 d	500
E3	Pre-curfew	0.86 d	1.9 d	3.8 d	7.5 d	15 d	10,000
	Post-curfew	0.29 d	0.63 d	1.3 d	2.5 d	5.1 d	1,000
E4	Pre-curfew	1.4 d	3.1 d	6.3 d	13 d	26 d	25,000
	Post-curfew	0.29 d	0.63 d	1.3 d	2.5 d	5.1 d	2,500
Aid to gauging A _p		2 to 5cm	5 to 10cm	10 to 20cm	20 to 40cm	40 to 80cm	>80cm
Geometric mean of diameter (cm)		3.2	7.1	14.1	26.3	56.6	>80
Corresponding A _p representative area (m ²)		0.0008	0.004	0.016	0.063	0.251	>0.5

Table 4 - Illuminance intensity

Light technical parameter	Road classification*			
	No road lighting	M6/M5	M4/M3	M2/M1
Veiling luminance* (L _v)	0.037 cd/m ²	0.23 cd/m ²	0.40 cd/m ²	0.84 cd/m ²
Threshold increment	15% based on adaption luminance of 0.1 cd/m ²	15% based on adaption luminance of 1.0 cd/m ²	15% based on adaption luminance of 2.0 cd/m ²	15% based on adaption luminance of 5 cd/m ²

Table 5 - Value thresholds

Table 6 (CIE 150 table 5): Maximum values of upward light ratio (ULR) of luminaires.

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR)/%	0	0	2.5	5	15

Table 6 - Upwards light Ratio

Table 7 (CIE 150 table 6): Maximum values of upward flux ratio of installation (of four or more luminaires).

Light technical parameter	Type of installation	Environmental zones				
		E0	E1	E2	E3	E4
Upward flux ratio (UFR)/%	Road	n/a	2	5	8	12
	Amenity	n/a	n/a	6	12	35
	Sports	n/a	n/a	2	6	15

Table 7 - Upwards flux ratio

Table 8 (CIE 150 table 7): Maximum permitted values of average surface luminance (cd/m²).

Light technical parameter	Application conditions	Environmental zones				
		E0	E1	E2	E3	E4
Building facade luminance (L _b)	Taken as the product of the design average illuminance and reflectance divided by n	< 0.1	< 0.1	5	10	25
Sign luminance (L _s)	Taken as the product of the design average illuminance and reflectance divided by n, or for self-luminous signs, its average luminance.	< 0.1	50	400	800	1,000

Table 8 - Average Surface illuminance

- The Warrington Interchange site is situated South East of Warrington centre near Lymm. It is within an outer suburban area which allows it to meet with the E2 'Rural' classification of area.

Based on the ILP Guidance Notes for the Reduction of Obtrusive Light, the following definitions are used to describe different phenomena related to lighting:

- **Light Spill** - Undesired light spillage on the target area, it may affect sensitive receptors especially residential properties.
- **Source Intensity** - the brightness of the source of light. It is often related to glare issues as bright light sources against a dark background can result in dazzling the observer.
- **Façade Illuminance** - Light trespassing on the site boundary and falling into windows.
- **Sky Glow** - the reemitted light in the sky composed by indirect upward light and direct upward light. This glowing effect can result in a bright sky, which is usually observed above cities.

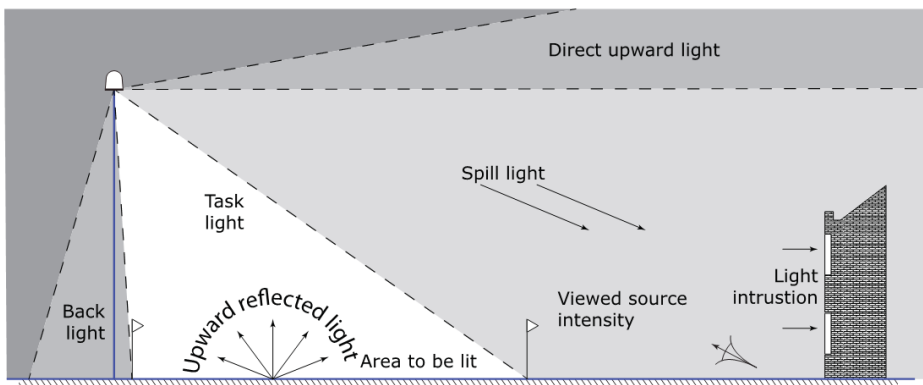


Figure 3 – Luminaire directions

2.4.2 Institute of Lighting Professionals (ILP formally the ILE), BATS Conservation Trust Lighting Guidance (August 2018)

- The Bat Conservation Trust and the ILP produced a paper in 2018, 'Bats and Lighting in the UK', discussing the appropriate lighting levels, types of lamps, colour temperatures etc. which are suitable for lighting areas adjacent to bat houses.

2.4.3 Institute of Lighting Professionals (ILP formally the ILE), A Review of the Impact of Artificial Light on Invertebrates (March 2011)

- The Invertebrate Conservation Trust and ILP produced a paper in 2011 which discusses the appropriate lighting levels, types of lamps, colour temperatures etc. and the impact any lighting has on insects and other invertebrates, making recommendations and identifying several further research areas.

2.4.4 Institute of Lighting Professionals (ILP formally the ILE), Lighting Against Crime, A Guide for Crime Reduction Professionals (January 2011)

- Secured by Design and the ILP produced a paper in 2011 conversing an understanding of external lighting and the recommended levels of illumination used to combat crime, the fear of crime and antisocial behaviour. Secured by Design is a police initiative to encourage the building industry to adopt crime prevention measures in the design of developments to assist in reducing the opportunity for crime and the fear of crime, creating a safer and more secure environment.

3.0

Assessment Methodology and Significance Criteria

3.0 Assessment Methodology and Significance Criteria

3.1 The baseline assessment methodology is as follows:

3.1.1 Site Survey

- A site survey was undertaken to establish the type, height and light distribution of the existing lighting components on and around the site.
- Key receptors were identified to signal which areas need to be looked at in further detail during the detail lighting design process.

3.1.2 Environmental impacts on wildlife were to be identified and a recommendation made on lamp types, colour temperature etc. Consideration of the potential impact of the development.

- A desktop study was to be undertaken to understand the building façade designs, their positions in relation to the residential buildings and key routes around and through the site and their likely lighting design requirements, e.g. functional, feature, media etc. From this study the likely impact has been assessed.
- Public realm lighting within the car parks of the development are to be evaluated with respect to light spill onto the surrounding areas.

3.1.3 The Lighting Strategy

- A lighting strategy aimed at minimising light spill has been developed during the detailed design phase of the project. The lighting strategy will be discussed further in Chapter 6 and the lighting calculation results can be found within Appendix 1 – Lighting Lux Level Plot BSXX(63)4001.

4.0

Key Receptors

4.0 Key Receptors

4.1 The key receptors surrounding the development are listed below.

It is assumed that each of these receptors may be impacted by light spill from the proposed Six 56 Warrington site development, and as a result could be detrimental to the existing environment. The receptors that are the subject of this chapter as per Figure 1 are;

- Grappenhall Lodge
- Cartridge Lane Dwelling
- Bradley Hall Cottages
- Bradley View
- Howshoots Farm
- M6 Motorway
- Barleycastle Lane dwellings x 2

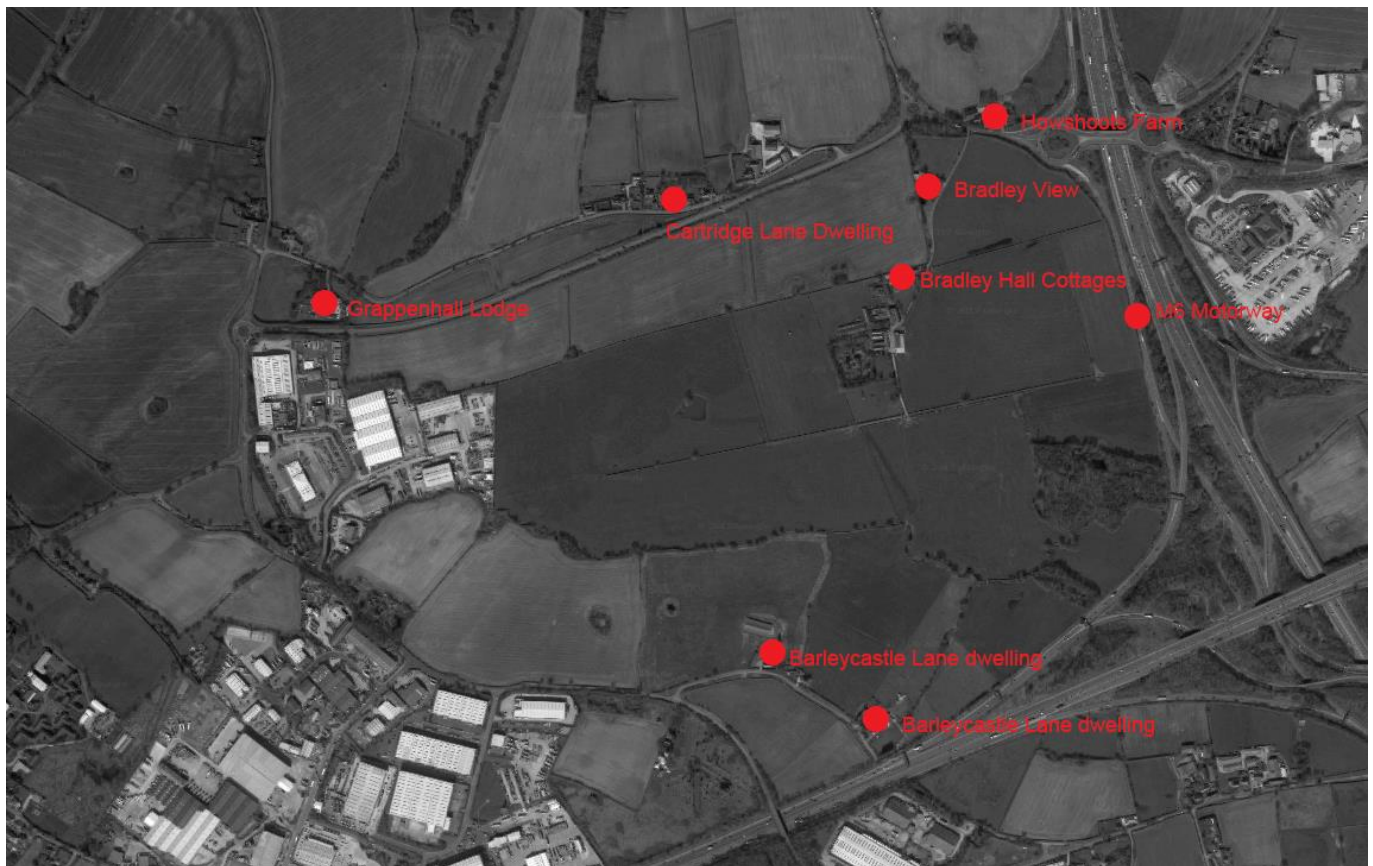


Figure 4 – Receptor Locations

5.0

Baseline Conditions

5.0 Baseline Conditions

5.1 Daytime Analysis

Cundall Light 4 carried out a site survey between 8.00 and 12.00 on the 16th August 2017. The survey included a study of the existing site and any lighting around the perimeter of the development area.

There is currently no existing lighting system in place on site and so Cundall Light4 spent their time on site noting each of the receptors and how they may be affected by future light spill.

The residential property at Grapenhall Lodge cannot be viewed from the current site due to the dense number of trees in the area, see Figure 2. Therefore, it can be assumed that Grapenhall Lodge will not be affected by any light spill if the lighting techniques highlighted in the ILP Guidance note on the reduction of obtrusive light, 2011 document are adhered to.



Figure 5

The residential dwellings adjacent to the development on Cartridge Lane can be viewed from the current site. There is a reduced number of trees in the area, see Figures 3 and 4. Therefore it can be assumed that currently, the residential dwelling would be affected by a small percentage of light spill.



Figure 6



Figure 7

Within the development site is the residential dwellings of Bradley Hall cottages and farm, see Figures 5 and 6. It has currently been confirmed that the cottages will be removed from the masterplan however to encompass any future changes that may take place, a baseline assessment has taken place. Care must be taken upon any surrounding lighting so as not to exceed the recommended light trespass onto the windows. Currently there are a number of lighting columns already installed in close proximity to the cottages, see Figure 7. The use of additional trees may be required to block any light spill due to the low-level hedges that are currently in place and will not provide any obstructive views. However, it can therefore currently be assumed that the residential dwellings of Bradley Hall cottages would be affected by a percentage of light spill, as a number of the cottages are currently already affected by a minor percentage of light spill from the existing columns.



Figure 8



Figure 9



Figure 10

The residential dwelling within Bradley View requires extra precaution with any adjacent lighting. The house and gardens are currently viewable from the West and East directions with minimal surrounding trees, see Figures 8 and 9. Therefore it can currently be assumed that the residential dwelling within Bradley View would be affected by a percentage of light spill.



Figure 11



Figure 12

Howshoos Farm is the adjacent property to the North East of the site, see Figure 10. There is currently a sparse number of trees populating the area and so it can be assumed that Howshoos Farm would be affected by a small percentage of light spill.



Figure 13 – view from site towards the adjacent road and Howshoos Farm

The M6 motorway runs adjacent to the East of the development, see Figure 11. Currently there is a minor percentage of light spill around the site adjacent to the motorway. Care must be taken upon any surrounding lighting so as not to cause glare to drivers. The use of additional trees may be required to block any light spill both onto the motorway and onto the site, however it can therefore currently be assumed that the M6 motorway would be affected by a percentage of light spill.



Figure 14 – M6 motorway to the left

To the South of the development site is two residential dwellings on Barleycastle Lane, see Figures 12 and 13. There is a reduced number of trees in the area. However with the distance from the dwellings to the site it can be assumed that the residential dwellings would not be affected by a small percentage of light spill.



Figure 15



Figure 16

5.2 Night-time Analysis

The following site photographs were taken by MSEnvironmental in June 2020. The survey was to establish the current view of surrounding residents and to establish the subsequent visual impact effect of construction and operational lighting. Each of the following photographs were taken at approximately 23:38pm, this is after the time suggested to dim any road lighting and allow for Dusk – Dawn sensors to reduce light pollution and visual impact,

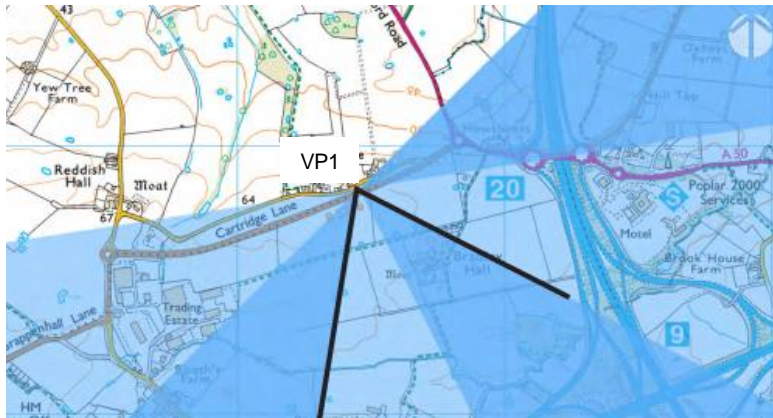


Figure 17 – Viewpoint 1 location

For Viewpoint 1, the image was taken at approximately 22.38 to provide perspective. From Viewpoint 1, at the centre of Grappenhall Lane, looks towards the entire site. Currently the view shows no signs of lighting or sky glow in the distance. However, the location of trees directly behind the Viewpoint 1 location will block the general view of the site from the residential receptor points on Cartridge Lane. Therefore, any light spill will be small enough for no impact, however there may be a view of sky glow following the site's development.



Figure 18 – Viewpoint 1

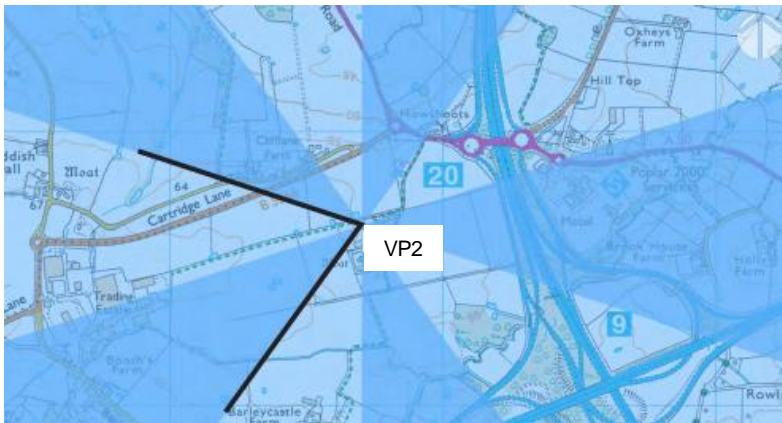


Figure 19 – Viewpoint 2

From Viewpoint 2, the view from the centre of the site, in close proximity to Bradley View, looking towards the Barleycastle Trading Estate shows the visual impact of the estate’s lighting and the subsequent glare and sky glow.



Figure 20 – Viewpoint 2

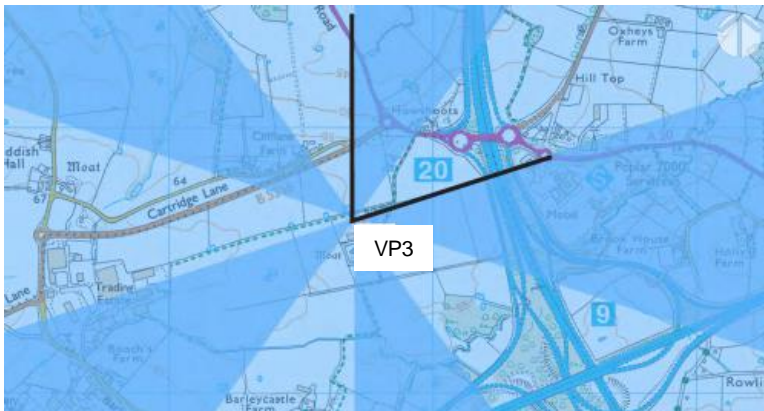


Figure 21 – Viewpoint 3

From Viewpoint 3, the view from the centre of the site in close proximity to Bradley View, looking towards Clifton Lane and the junction off the M6 motorway shows the visual impact of the junctions lighting and the subsequent sky glow.

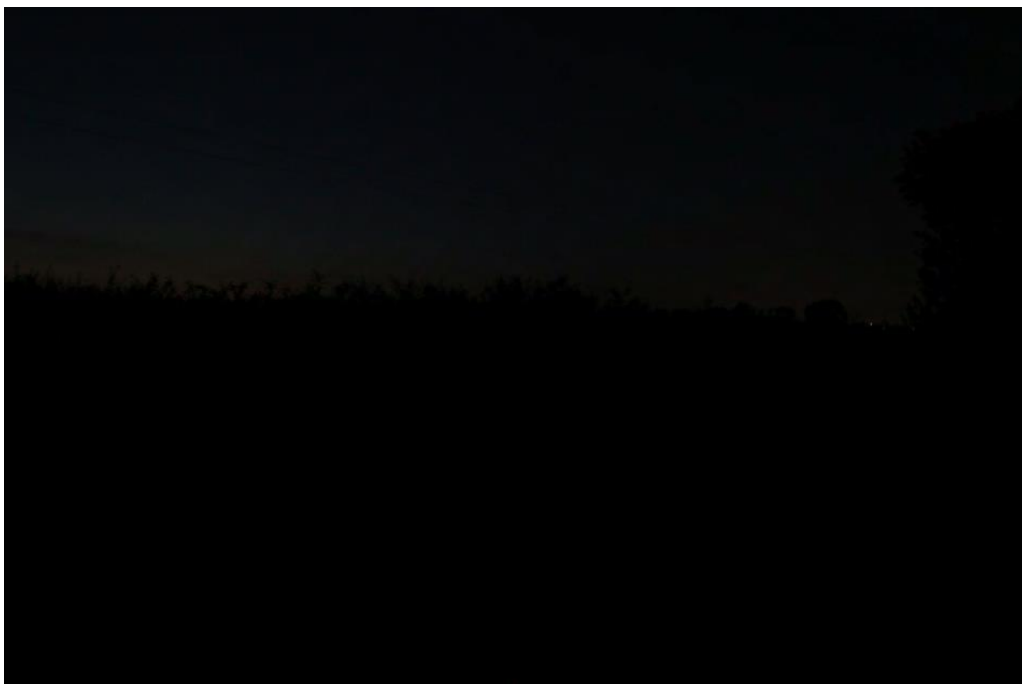


Figure 22 – Viewpoint 3



Figure 23 – Viewpoint 4

From Viewpoint 4, the view from the Southern perimeter of the site, looking towards the M6 motorway shows the visual impact of the surrounding lighting and the subsequent glare and sky glow.



Figure 24 – Viewpoint 4



Figure 25 – Viewpoint 5

From Viewpoint 5, the view from the M6 junction looks towards the proposed development site. There is no visual of the site due to the dense trees and hedge line which is successful in obstructing your view. The only lighting that can be seen is the street lighting designed to industry safety standards.



Figure 26 – Viewpoint 5

The above photographs on and around the site correlate with the CPRE light pollution study which shows there is a higher percentage of light spill and sky glow resulting from the built up lighting to the adjacent M6 motorway to the East of the site and the Barleycastle Trading Estate to the North West of the site. Whilst the other images show a lack of light of sky glow this results from the areas where artificial lighting is sparse or absent within the field of vision.

6.0

Lighting Assessment

6.0 Lighting Assessment

6.1 Criteria

- Six 56 Warrington has been classed as an E2 Environmental Zone within the ILP Guidance Notes of the Reduction of Obtrusive Light, therefore the following standards must be met,
- Sky Glow (ULR) – 2.5%
- Light Trespass (Lux) – 5 (pre-curfew), 1 (post-curfew)
- Source Intensity (cd) – 7,500 (pre-curfew), 500 (post-curfew)
- Building luminance (cd/m²) – 5

6.2 Strategy

A lighting design and calculation has been completed for the site and will be shown as an appendix. The strategy and principles of the design area are as follows;

- Any building mounted luminaires or column luminaires which have been included to the external areas adjacent to the perimeter of the site have flat glass diffusers to minimise sky glow. The diffusers are positioned horizontally to the ground or with a 5° tilt if necessary.
- All public realm lighting within the calculation has been specified with flat glass diffusers which would control the light distribution and are mounted horizontally to the ground or with a 5° tilt if necessary.
- A higher quantity of low power luminaires mounted closer to the area to be lit has been the overriding strategy, as this will provide a scheme which is far less likely to cause light pollution compared with more powerful but fewer luminaires.
- All lighting columns and wall mounted bulkheads do not exceed a height of 8m in order to achieve minimal sky glow.
- No lighting has been installed within the proposed habitat mitigation areas in order to allow species to use the areas freely. As these areas aim to be light exclusion zones, the surrounding lighting will be dimmable in order to avoid light spill and glare
- Glare guards will be required to minimise any excessive backlighting from the column lighting

6.3 Lighting Calculation Results

Eight receptor points were calculated for light spill and source intensity. Each receptor passed the ILP's requirements at pre-curfew and post-curfew. The sky glow has passed the ILP's requirements at 0.0%, meaning there is no sky glow at all from the Six 56 Warrington site.

The South side of Plot 1 has been calculated under the building illuminance in cd/m². Plot 1 was chosen due to its close proximity to Barleycastle cottages. Despite the potential issue, the building illuminance passed the ILP's requirements.

The calculation results in a small percentage of light spill onto the wildlife habitat areas, looking specifically around the existing farm building which is to be retained as a small office building. The surrounding lighting to this building is for

safety only and therefore will not meet the BSEN guide requirements in a bid to minimise any further light spill into the wildlife habitat areas. Signage will be required for drivers for the minor, adjacent road.

Despite the receptor point at Bradley View passing the ILP requirements, it would still be prudent to utilise tree's within the vicinity to further minimise any light spill or glare due to the close proximity to the site.

The results of the light pollution calculation can be found in Appendix 1; BSXX(63)4001-Lighting Lux Level Plot.

6.4 Key Impact Generators

A number of considerations must be taken into account to better understand the potential concerns based on the key impacts of the construction and operation of the site;

- Large car park areas which will increase the need for grouped column lighting
- The reflectance value of the building facades
- The additional lighting along Grappenhall Lane leading to the site entrances, which now becomes a high traffic road
- The addition of 2no roundabouts entrances to Grappenhall Lane which will need to be lit to industry safety standards
- The potential locations of glazing within the buildings which will provide internal spill light
- The location of Bradley View to the site requires total mitigation measures

6.5 Visual and Landscape

From the site construction and operation, increased light pollution is likely with this scheme due to the large areas of car parking and the requirement for tall column lighting to facilitate this. Large external areas will need to be lit to accommodate safe access for both pedestrians and vehicles, such as the new roundabouts of Grappenhall Lane.

If the building's façade becomes illuminated then this will have a detrimental effect on the surrounding landscape and therefore the residential buildings and receptors. Where building mounted lighting is required it should be adopted with light shields to reduce unwanted light flashing the building façade.

The use of glazing within the buildings should be considered. Glazing at the side of the building will emit internal light spill and be detrimental to the visual effect whereas roof glazing would be an advantageous alternative.

There is little on and around the immediate site in terms of existing lighting other than the roadway lighting columns for the M6 motorway and the Barleycastle Trading Estate.

The use of trees and foliage are key to providing less of a visual impact to residents. As the residents are generally set back from the proposed site at different locations, the usage of trees and foliage will vary at different locations around the site perimeter. For Bradley View, the use of trees is essential to avoid such a detrimental visual impact.

6.5.1 Local Character and Distinctiveness

New lighting is proposed for Grappenhall Lane, as this becomes the access road to the site. Mitigation measures have been undertaken to ensure there is limited light spill onto the surrounding residential receptor points.

6.5.2 Impact on the Natural Conservation/Ecology

It is recommended to minimise artificial lighting within the proximity of Bradley Gorse and the Ecological Mitigation Area by positioning and directing light away from these areas.

The lighting effect on animals can be harmful as the 'lack of sleep was likely to be detrimental to the birds' survival and could disrupt the long-term circadian rhythm that dictates the onset of the breeding season.'

It is therefore recommended that the areas adjacent to the ecological mitigation areas will:

- Not provide excessive lighting.
- Not utilise reflective surfaces under lights.
- Adopt motion sensors, to control the lighting in order to provide some dark periods when possible; and
- Use narrow spectrum light sources, with a peak higher than 500nm.

To minimise the disturbance to wildlife, construction should only take place during daylight hours and exterior lighting such as street and security lights in the vicinity of hedgerows, trees and the wildlife corridor should be avoided, or if absolutely necessary, should be of a type that has a minimum impact on the use of these areas by bats.

6.5.3 Neighbouring Amenity

Mitigation should include placement of horizontal cut off luminaires at 0° up-light, thereby directing light towards the access road only. This, along with adoption of recommendations listed in the mitigation section of this report, will reduce light spillage onto the surrounding areas.

The allowance of inward facing luminaires will act as mitigation for the surrounding agricultural/residential areas.

6.6 Mitigation Measures

The following measures should be considered during the design process to minimise light pollution onto the Six 56 Warrington site;

- Light fittings will generally be positioned at the perimeter of the areas and aim into the site such that the light is not dispersed beyond the site boundary.
- Building facades for employment should utilise materials of a matt finish and have a Light Reflectance Value of no more than 15%
- Flat glass luminaires mounted horizontally to the ground will be used such that the up-light ratio is 0% (This is classified as ULR0 or U0)
- Light fittings will have a limited amount of backlight (This is classified as B0).
- The lights will be on automatic sensors where possible such that the light is only used when needed.
- Column heights to be kept below 8m at a tilt angle no higher than 5°
- High level lighting to be shielded and downward facing only with flat glass lens.
- Utilise LED lighting only to control the light and minimise unwanted light spill.
- Dusk - Dawn sensors on lighting other than street lighting. Should reduce/turn off after a curfew to be agreed. Therefore, only providing light when required ultimately reducing light pollution and visual impact.
- Provision for additional trees/planting around the site perimeter in particular to the North and West of the site to minimise light pollution onto the surrounding fields
- More frequent, low output luminaires should be considered over less frequent high output luminaires.
- Utilise the location of trees and foliage and the various landscape ridge heights to remove, where possible, the visual impact of the site

Loading bays should be positioned inward facing to minimise the extent of light pollution and reduce the visual impact. Generally, it is recommended to maintain the 50-lux level in the loading areas, as recommended by the BS EN 12464 2 only when the loading bays are operative, and to dim lighting levels to 5 lux when not in use. This would, in addition to reducing energy consumption, reduce the risk of light spillage and sky glow onto the existing residential receptors in line with lighting levels recommended for security reasons.

The control of the lighting is proposed to be photocell on / photocell off. An enhancement to this would be to have a degree of smart control such that the road lighting is dimmed at say 11pm such that it has less of an impact on the night-time environment. Luminaire colour temperatures for the development should not exceed 3000K.

Lighting schedules have not developed at this stage for the application as they are occupier- specific and further dependant on the operators' hours of operation. However, if the guidance and mitigation measures outlined in this report, were adopted and carried through to the detailed lighting scheme, they would ensure that the lighting impact to sensitive receptors are minimal and within acceptable limits.

6.6.1 Demolition and Construction

During the site set up and mobilisation period the lighting installation should be inspected to ensure the aiming of all floodlights is appropriate and no lighting is being directed towards the residential properties or wildlife habitats.

6.6.2 Operation

The light pollution study shows that the proposed lighting scheme complies with the ILP guidance on the reduction of obtrusive light during both pre-curfew and post-curfew time slots. Therefore, so long as the mitigation measures outlined in this report are adhered to then no further mitigation measures are required for Six 56 Warrington.

7.0

Summary

7.0 Conclusion

A lighting impact assessment has been undertaken by Cundall Light4 as part of the planning application for the proposed Six 56 Warrington, Warrington.

If the lighting techniques highlighted in the ILP Guidance Note on the Reduction of Obtrusive Light; GN01 2020 document and the mitigation measures advised by Cundall Light4 are adhered to, the site safety and security lighting located within the development area will not have an effect on the receptors points included within this report and the Lighting Lux Level Plot – BSXX(63)4001.

The use of trees will act as an obstruction to the site and will therefore limit any light spill and sky glow. Care must be considered for any lighting adjacent to Bradley View site and further tree obstructions may be required for the area.

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ES Part I Appendix I7

From: [Jenny Ray](#)
To: [Thompson, Andrew](#)
Cc: [Gavin Winter](#); [David Rolinson](#)
Subject: Six 56 Warrington - ES Cumulative Matters
Date: 27 September 2018 15:34:28
Attachments: [P0-TP-SPA-NT-4055-0018-B Cumulative Note.pdf](#)
[image021.png](#)
[image025.png](#)

Dear Andrew

Further to previous correspondence and your discussions with Gavin Winter and Dave Rolinson at your recent meeting, we have discussed the EIA cumulative matters further with our Client's legal team. For the purposes of moving forward and coming to an agreement on the approach to be taken, we have reviewed the Garden City Suburb as proposed through the emerging local plan and its timescales for delivery compared to the Six 56 Warrington proposals.

Please therefore find attached a note which sets out how we propose to undertake the cumulative assessment within the Six 56 Warrington ES, based on the level of information that is available for the emerging allocations and the timescales for delivery of the proposals. This would be considered in addition to the list of cumulative projects set out and agreed at the Scoping Stage.

We trust you will consider the details of this note and confirm your agreement with this approach.

We look forward to hearing from you shortly, however should you wish to discuss this further, please do not hesitate to give me a call.

Kind regards

Jenny

JENNY RAY

Associate: Chartered Town Planner (Please note I have a new mobile phone number)
BSc (Hons), MA, MRTPI



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Six 56 Warrington

Cumulative – Garden City Suburb

Assumptions for Six 56 Warrington delivery:

The delivery of the Proposed Development will come forward in phases. This will ultimately be driven by the demand for the employment buildings, however for the purposes of the Environmental Assessment, the following timescales have been assumed, which represent a precautionary approach (and therefore a worst case scenario) by assuming a single continuous phase of site enabling works and means of access for the Phase 1 Development, followed by a three year build period:

- *Planning Submission – 2018 (late Q4)*
- *Planning Determination – 2019 (Q2)*
- *Reserve Matters/Detailed Design – 2019 / 2020*
- *Initial Site enabling and infrastructure works – 2020 (6 months – Q3 2020 to Q4 2020)*
- *Development – 2020 to 2027 (6.5 years – Q3 2020 to Q2 2027, with each plot taking approximately 9 months to develop) with an allowance for delivery into 2028 (as requested by LPA).*

Assumptions for Garden City Suburb delivery

(Based on Warrington Borough Council's Preferred Development Option (Regulation 19 Consultation), July 2017):

Total allocation:

- 20 years delivery
- 4 Phases (each having a 5-year span)
 - o 7,274 homes
 - o 116.80 ha employment
 - o New distributor roads
 - o New secondary school
 - o Up to 4 primary schools
 - o Major new park
 - o District Centre
 - o Health facilities
 - o Leisure facilities

Local Plan Submission and Consultation – Early 2019

Examination in Public - 2019

Assumed adoption of Local Plan – 2020

Warrington Garden City Suburb Phase	Uses and Quantum (Preferred Development Option July 2017)	Six 56 Cumulative Assessment (to be included within ES)
Phase 1 0-5 years Assumed 2020-2025	406 residential units (non-Green Belt sites) 22ha employment (employment areas include Six 56 Warrington and Land around Barley Castle Lane)	<p>Six 56 Warrington under construction, with part delivered.</p> <p>HCA sites (950 dwgs) 78 dwgs associated with land to east of Stretton Road (refused application). Land North of Barley Castle Lane (Liberty Property and Stobart) (LPA Ref: 2017/31757) - 15.7ha Six 56 Warrington developable area and planning application for Land North or Barley Castle Lane (LPA Ref: 2017/31757) equates to 77.52 ha</p> <p>Conclusion - Six 56 Cumulative Assessment includes Phase 1 Garden City Suburb</p>
Phase 2 6-10 years Assumed 2026-2030	2610 residential units (includes 496 non-Green Belt sites and 2,114 Green Belt sites) 30.3 ha employment (employment areas include Six 56 Warrington and Land around Barley Castle Lane)	<p>Six 56 Warrington to be completed during 2027/2028</p> <p>Garden City Suburb Phase 1 and 2 employment land equates to 52.3ha. Six 56 Warrington developable area and planning application for Land North or Barley Castle Lane (LPA Ref: 2017/31757) equates to 77.52 ha</p> <p>Garden City Suburb Phase 1 and 2 residential units equates to 3016 units. Six 56 Warrington Cumulative Assessment includes 1,028 residential units.</p> <p>Conclusion – Six 56 Cumulative Assessment includes Phase 2 Garden City Suburb (employment) <u>Six 56 Cumulative Assessment to include additional 1988 residential units (i.e. the residual number of units identified in Preferred Development Option that not already included within Six 56 Cumulative Assessment)</u></p>
Phase 3 11-15 years Assumed 2031-2035	2,144 residential units 45.9 ha employment	<p>Six 56 Warrington fully operational</p> <p>Conclusion - Beyond the delivery of Six 56 Warrington and as such, not to be included within the Six 56 Warrington Cumulative Assessment</p>
Phase 4 16-20 years Assumed 2036-2040	2,144 residential units 18.6ha employment	<p>Six 56 Warrington fully operational</p> <p>Conclusion - Beyond the delivery of Six 56 Warrington and as such, not to be included within the Six 56 Warrington Cumulative Assessment</p>

Six 56 Warrington Cumulative Assessment:

- Due to the limited information available in respect of the Garden City Suburb, the Six 56 Warrington Cumulative Assessment will be a non-spatial assessment.
- Due to the delivery timeframe for the six 56 Warrington proposals, the cumulative assessment will be based on the quantum of development set out within the table above.
- Traffic and Transportation, Noise and Air Quality cumulative assessments will be undertaken using the information available from Warrington Council's Highway modelling work produced

for the emerging Local Plan and will therefore be based on the assumptions made within this model in terms of timing of delivery and distribution of traffic on the network

- Agricultural Land and Socio Economic cumulative assessments will be based on the quantum of development identified in the table above (i.e. Phase 1 and 2 of the Garden City Suburb)
- There is not sufficient information available in terms of spatial delivery for cumulative assessments to be undertaken in respect of the other technical areas, which include Geology and Ground Conditions; Flood Risk and Drainage; Landscape and Visual Impact; Ecology and Nature Conservation; Cultural Heritage and Archaeology; Utilities; Waste; and Energy. As such it is not possible to undertake a cumulative assessment in respect of these technical areas.

From: Thompson, Andrew <x-andrew.thompson@warrington.gov.uk>

Sent: 30 August 2018 17:33

To: Gavin Winter <Gavin.Winter@spawforths.co.uk>

Cc: Mark Dawe <mark@mtdawe.com>; Gartland, Ella <ella.gartland@warrington.gov.uk>; David Rolinson <David.Rolinson@spawforths.co.uk>; Walker, Colin <colin.walker@warrington.gov.uk>

Subject: Warrington Six:56

Gavin,

Some quick notes of this afternoon's meeting with me (AT), yourself (GW), David (DR) and Mark (MD). I copy in Ella as she was unable to make the meeting and Colin as overall manager so he can feedback to Andy Farrell (as appropriate).

1. Updates to technical work and feedback

GW confirmed that there had been a lot of work going on the masterplan and sorting out drainage matters and highways in terms of providing additional buffer for Historic England and the links for the bus route in the site plan and a buffer for future expansion.

LVIA work in progress – AT to respond on key views

Access and highways matters – consultants were in continued dialogue with Highways England and WBC Highways.

AT – to internally consult on new masterplan for any fundamental issues

AT to check with neighbouring authority that nothing has changed from earlier discussions.

2. Feedback from Historic England

Positive meeting with Andrew Davidson of Historic England (HE)

Key to maintain southern links and views through – may mean moving car parking

HE want cottage to remain – link to the past although not the original – consultants looking at alternative uses – AT advised care with regard to a nursery as the associated works and security needed to meet educational standards may be inappropriate.

HE welcome the loss of the agricultural buildings as an improvement to the setting

Gavin to chase some written comments

AT – welcomed the feedback and that it was positive that HE had been able to meet to discuss the masterplan

3. Masterplan layout

MD updated that Omega was progressing at pace and that space was being taken up very quickly with good demand. 2013 started and nearing completion of the deals.

MD would facilitate with John Laverick and consultants on the masterplan for the Garden Village concept but it looked positive.

Key area to look at – what is in the District Centre.

Phasing – plots would be delivered on market demand but aims enabling works to start in 2020 and complete development by 2027 – AT suggested 2028 to allow for unforeseen circumstances

4. Policy Update – Local Plan and NPPF 2018 issues arising

AT – Confirmed that the Local Plan would be presented to full Council in December.

AT – new NPPF – positive – Para 82; care on para 182-183 (noise and pollution) and 194 (heritage)

Agreed that would continue to work through the plan process and engage with the final draft and EiP process.

5. Alternative Sites Assessment

Agreed that the key would be to look at motorway junctions and call for sites and the process Omega 2, Port of Warrington and Parkside already looked at.

Other side of M6 also should be looked at – i.e. extensions to Lymm Services – infrastructure issues?

M&S building highlighted by many people – need to look at in terms of the location and specifics of the building in terms of dismissal – has the building been marketed.

Brownfield/urban sites – particularly in light of para 82 – should be included but agreed that these were unlikely to be realistic alternatives.

6. Stobart's NDC / Liberty Properties application

Application has three key issues – Highways, Ecology and Heritage with the new NPPF also requiring review of the ES.

Significant Addendum under Reg 25 to be submitted on 7 September 2018 – consultation requirements

If it has addressed comprehensive issues – particularly highways – October committee has been targeted.

7. Cumulative development

It is acknowledged that the legal technicality would limit the consideration but the practical approach to avoid issues later on and the delivery of the Reserved Matters and developments means that the ES should focus on what is happening on the ground.

It was agreed that to take the matter forward the best option would be to look at the delivery phases of the masterplan. Based on the preferred option this would be Phase 1 and elements of Phase 2 – need to confirm with John Laverick.

Key matters for the ES would be Transport and the consequential impacts – particularly Air Quality and Noise. Need to liaise with Highways consultants, Highways England and WBC highways as to modelling and forecasts.

Other matters – heritage, landscape and visual would be assessed through a worst case scenario so the cumulative impact would be less of a consideration.

8. PPA

DR confirmed that wording and principles agreed (subject to typos) – need to work on the fee AT offered to look at a staging of the PPA fee for the outline and each Reserved Matters Submission and would drop DR a separate note on this. Highways would be likely to be needed upfront and some of the fee could be used to support of resources to delivery of the Local Plan/EiP in support of the potential allocation.

9. Timescales / Programme

DR and GW outlined work so far for pre-application consultation – website being worked on and engagement with the community to be offered

AT – suggested Parishes and Ward members to be approached as early as possible.

MD – to facilitate business community contacts.
DR – also working up engagement with colleges/potential supply chain/employees to promote localised supply chain.
GW to circulate programme of pre-application engagement asap - WBC comms team will need to be aware so they can manage messages and the local plan process.

10. **AOB**

Agreed positive progress being made.
GW to circulate future meeting dates to continue dialogue.

Hope this helps,

Andrew Thompson

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ES Part I Appendix I8

Gavin Winter
Spawforths
Junction 41 Business Court
East Ardsley
Wakefield
WF3 2AB

9 March 2020

Ref:
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Docs\Reports\Geotechnical\1015524.LTR.G
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Dear Gavin

Six 56, Land At Bradley Hall Farm, Grappenhall Lane, Warrington - Addendum To Environmental Statement

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect Cundall's existing Ground Conditions Chapter and associated supporting information that was produced in March 2019. Therefore, no updates to the existing Ground Conditions Chapter are required as a result of the update of the ES Project Description.

Yours sincerely
For and on behalf of
Cundall Johnston & Partners LLP



Kevin McGee
Associate Director
Email: k.mcgee@cundall.com
Direct Dial: 0191 213 4535

Gavin Winter
Spawforths
Junction 41 Business Court
East Ardsley
Wakefield
WF3 2AB

5th February 2020

Dear Gavin

**RE: SIX 56, LAND AT BRADLEY HALL FARM, GRAPPENHALL LANE,
WARRINGTON - ADDENDUM TO ENVIRONMENTAL STATEMENT**

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect RPS' existing Air Quality, Odour and Dust Technical Paper 8 that was produced in March 2019. Therefore, no updates to the existing Air Quality, Odour and Dust Technical Paper 8 are required as a result of the update of the ES Project Description.

Yours sincerely



Kathryn Barker
Senior Air Quality Consultant
RPS
Kathryn.Barker@rpsgroup.com



Patrick Stephenson Ltd
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Agricultural Consultants Crop and Farm Management Specialists

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Junction 41 Business Court
East Ardsley
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18th March 2020

Dear Gavin

RE: SIX 56, LAND AT BRADLEY HALL FARM, GRAPPENHALL LANE, WARRINGTON - ADDENDUM TO ENVIRONMENTAL STATEMENT

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect Patrick Stephenson Ltd existing Agricultural Land & Soils Technical Paper that was produced in March 2019. Therefore, no updates to the existing E Agricultural Land & Soils Technical Paper are required as a result of the update of the ES Project Description.

Yours sincerely

Patrick Stephenson Ltd

Our ref:

20 Western Avenue
Milton Park
Abingdon, Oxfordshire
OX14 4SH
T +44 1235 821 888

Date: 06 March 2020

Gavin Winter
Spawforths
Junction 41 Business Court
East Ardsley
Wakefield
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Dear Gavin,

**SIX 56, LAND AT BRADLEY HALL FARM, GRAPPENHALL LANE, WARRINGTON -
ADDENDUM TO ENVIRONMENTAL STATEMENT**

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect RPS's existing Waste Technical Paper that was produced in March 2019. Therefore, no updates to the existing Waste Technical Paper are required as a result of the update of the ES Project Description.

Yours sincerely,
for RPS Consulting Services Ltd



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18th March 2020

Dear Gavin

RE: SIX 56, LAND AT BRADLEY HALL FARM, GRAPPENHALL LANE, WARRINGTON - ADDENDUM TO ENVIRONMENTAL STATEMENT

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect Ridge and Partners LLP existing Utilities Technical Paper that was produced in March 2019. Therefore, no updates to the existing Utilities Technical Paper are required as a result of the update of the ES Project Description.

Yours sincerely



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18th March 2020

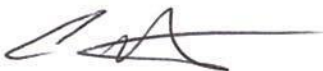
Dear Gavin

RE: SIX 56, LAND AT BRADLEY HALL FARM, GRAPPENHALL LANE, WARRINGTON - ADDENDUM TO ENVIRONMENTAL STATEMENT

Further to your correspondence of the 5 February 2020, we can confirm that we have reviewed the updated ES Project Description in the ES Addendum arising from amendments to the indicative masterplan and Parameters Plans that have evolved to address comments raised by key consultees.

We can confirm that the changes resulting from the update of the ES Project Description and Parameters Plans in the ES Addendum will not affect Ridge and Partners LLP existing Energy Technical Paper that was produced in March 2019. Therefore, no updates to the existing Energy Technical Paper are required as a result of the update of the ES Project Description.

Yours sincerely



Carl Niland
Associate
Ridge and Partners LLP

ES Part I Appendix I9

Six 56 Warrington

ES Addendum – Text Deleted from Original ES Part I

Section Number / Paragraph Number / Table number / Figure Number in Original Paper	Text Deleted from Original ES	Reason
Front cover	26 th March 2019	Revised date of report
Paragraph I.2	...which commenced on 16 May 2017...	The Regulations have been amended (temporarily) with amendments coming into force on 14 May 2020
Paragraph I.4	The	Change tense
Paragraph I.7 containing the planning application description of development	...change of use of... ...to BI (a) office use (335m ² (3,600ft ²))...	The planning application no longer seeks to change the use of the existing Bradley Hall Farmhouse to office use. Any change of use of this building will form part of a separate application at a later stage, which will give full consideration to any impact this has on the building and its setting.
Paragraph I.10	...will... ...change of use of... ...to BI (a) office use (335m ² (3,600ft ²))...	As above
Table I.1 Development Areas	...and change of use of the existing Bradley Hall Farm house ((335m ² 3600ft ²)) to BI (a) office use... 64.74ha 6.25ha 23.87ha 3.13ha	Change to description of development as above and minor changes to breakdown of site development areas on updated illustrative masterplan
Paragraph I.21	have	Change in tense
Paragraph I.25	...is a... ...are...	Change in tense
Paragraph I.34	...has...	Change in tense

Paragraph 2.7	but which will be retained and converted to B1a office use as part of the Proposed Development.	Change to description of development as above
Paragraph 2.17	...change of use of... ...to B1 (a) office use (335m ² (3,600ft ²))...	The planning application no longer seeks to change the use of the existing Bradley Hall Farmhouse to office use. Any change of use of this building will form part of a separate application at a later stage, which will give full consideration to any impact this has on the building and its setting.
Paragraph 2.20	...are seeking to consult... ...from...	The Council have now consulted on Submission Version Local Plan (March 2019)
Paragraph 2.24	...will be...	Change in tense
Paragraph 2.28	64.74 160.49 32.51 hectares (80.33 acres) 5.47 hectares (13.51 acres) 24.43 hectares (60.37 acres)	The maximum developable area contained in the development cells has changed.
Paragraph 2.30	and a change of use of the existing Bradley Hall Farm house and cessation of its use for residential purposes ((335m ²) 3600ft ²) to B1 (a) office use	Change to description of development as above
Paragraph 2.31	57 83.50 55.50 to 60.50	Changes to FFL
Paragraph 2.59	It also details the location of bunds to attenuate noise egress from the site during the operational phase which 2-3m Around B	Changes have been made to the location, orientation and alignment of the landscape bunds around Bradley Hall Cottages
Paragraph 2.61	and converted for B1a office use as part of the Proposed Development. ...and converted for B1a office use.	Change to description of development omitting change of use of Bradley Hall Farm to B1a office use
Paragraph 2.106	to provide a safe crossing point across	Minor changes to the realignment of any proposed PROW diversion
Paragraph 2.107	(see paras 2.115– 2.104)	Changes to paragraph cross reference
Paragraph 2.111	City	Now referred to as Garden Suburb

Paragraph 2.134	<p>...or will be completed prior to submission of the outline planning application.</p> <p>(June – September 2018)</p>	<p>All relevant surveys are completed and up-to-date</p> <p>Bat Surveys have been updated.</p>
Paragraph 2.136	Was one	Change in tense
Paragraph 2.137	Based on surveys undertaken to date, it is anticipated that compensation for losses to bat and bird habitats can be accommodated within the landscaping design, as described above.	An alternative approach to mitigation is now proposed through an agreed contribution to the management of off-site habitats within the local area.
Paragraph 2.200	<p>2019 (early Q3)</p> <p>2020</p> <p>(6 months – Q2 2020 to Q3)</p> <p>2020 to 2027 (6.5 years – Q4 2020 to Q1 2027)</p>	Delays to determination of the planning application have had consequential changes to the phasing programme
Paragraph 3.4	has been is	Change in tense
Paragraph 3.11	Design & build / speculatively built space accounted for 50% of all take up, which reinforces the need for further large-scale development sites to accommodate future demand for new build accommodation. At the end of 2018 there were 14 large scale logistic units speculatively under construction in the North West totalling approximately 3 million sq ft, eleven of which have now reached or with practical completion being imminent.	Update to JLL Market Information
Paragraph 3.12	In summary the Warrington M6 market can show a take up of 1.2 million square feet in the period Q2 2019 to end of Q1 2020 twenty of speculative build. This represents 32% of the total regional take up this shows the strength of the market and the sub regional location.	Update to JLL Market Information
Paragraph 3.13	Warrington has a single speculative/Grade A unit available of 184,000 sq ft with a further two units (308,000 and 203,000 sq ft) under	Update to JLL Market Information

	construction and planning consent for a further unit (225,000 sq ft). All four units are at Omega South.	
Paragraph 3.18	Omega has been one of the most successful industrial and logistics development sites in the North West with over 5 million sq ft being built out at Omega.	Update to JLL Market Information
Paragraph 3.19	With the completion of development at Omega Warrington, the only available site is at Barley Castle Lane, Stretton which was the proposed HQ/National Distribution Centre for Eddie Stobart	Update to JLL Market Information
Paragraph 3.20	In summary the North West industrial and distribution market remains strong with take up of speculative/Grade A units and build to suit sites despite the various economic and political issues of the last three years. The ten year average take up remains in excess of 3m sq ft per annum.	Update to JLL Market Information
Paragraph 3.21	With the 10-year average new build take up of approximately 2.5m sq ft this is currently standing at just over 1 years supply. Should 2019 take up levels hit 2018 recorded levels of 4 million sq ft JLL expect to see many of these units let during 2019. With increasing numbers of businesses seeking sites for distribution and warehouse facilities in strategic locations, with easy access to the region's major transport networks this speculative supply will be quickly taken up by ongoing pent up demand.	Update to JLL Market Information
Paragraph 3.30	April	Date change
Paragraph 3.31	7000	The number of proposed dwellings in the Garden Suburb projected is now 7400
Paragraph 5.24	...are seeking to... ...from... ...prior to formal consultation commencing... ...prior to formal consultation...	Consultation on the Proposed Submission Version Local Plan (March 2019) has now been undertaken.

	...commencing... ...will then...	
Paragraph 5.26	Whilst the Submission Version of the Local Plan has not commenced formal consultation at the time of submission of this planning application, the Local Plan has been presented to Members at a Full Council Committee Meeting.	Consultation on the Proposed Submission Version Local Plan (March 2019) has now been undertaken.
Paragraph 6.17	...during recent discussions... ...has also be... ...and the scheme currently has no committed status. ... in view of the prospects that Liberty Properties and Stobarts may appeal or re-submit proposals on their Site.	Updates to the status of the Liberty Properties and Stobarts planning application and appeal.
Paragraph 6.22	have	Change in tense
Paragraph 8.1	Six Detailed determined at detailed design stage, once end users and occupiers and known, however... will have	Now seven new ponds Details on the height and location of the bunds to be agreed with any outline planning permission.
Table 8.2 Summary list of Mitigation Measures – Operation Noise & Vibration	These future assessments may affect the mitigation measures required, such as the detailed design of perimeter bunding currently included within the outline application and referred to in Section 8 of the Addendum Technical Paper in Part 2 of the ES. • Additional acoustic barrier screening to carefully considered roadside and bund locations. The final mitigation strategy will be dependent upon the Reserved Matters application and could only be assessed in detail once specific operators come forward with Reserved Matters applications. At this point, further detailed mitigation measure requirements could be determined and implemented.	Details on the height and location of the bunds to be agreed with any outline planning permission.
Table 9.1: Cumulative Developments	Phase 2 Garden Suburb - 2027	Minor changes to the delivery of the Six 56 proposals.

Paragraph 9.13	Whilst this currently has no committed status following its refusal, a revised application and or appeal is expected to be submitted in Q2 of 2019. ...Therefore...	Updates to the status of the Liberty Properties and Stobarts planning application and appeal.
Paragraph 9.16	April 7000	Changes to the report date of the Local Plan Submission Version and the number of dwellings proposed in the Garden Suburb.
Paragraph 9.18	2027	Minor changes to the delivery of the Six 56 proposals.
Paragraph 9.40	refused	Updates to the status of the Liberty Properties and Stobarts planning application and appeal.
Paragraph 9.42	...any... ...or appeal allowed...	Application now called in.
Paragraph 10.3	and Regeneration	Change to the name of the Planning Statement to Replacement Planning Statement.
Paragraph 10.12	which currently has no committed status following its recent refusal of planning permission	Updates to the status of the Liberty Properties and Stobarts planning application and appeal.