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LAND AT UPTON LANE
SHIFNAL

FLOOD RISK AND UTILITIES APPRAISAL

Shepherd Gilmour Infrastructure Ltd.

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Limitations

All findings, recommendations and conclusions contained in this report are based on information provided to us during investigations. Shepherd Gilmour Infrastructure Ltd. has created the report based on the assumption that all the information is accurate and accepts no liability should additional information exist or become available.

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SECTION 1 INTRODUCTION

1.1. Shepherd Gilmour Infrastructure Ltd (SGi) has been engaged by our client Nurton Developments Limited to provide a Flood Risk and Utilities Appraisal in support of development known as Land at Upton Lane, Shifnal for the forthcoming representations to the Shropshire Local Plan Partial Review 2016-2038.

SITE LOCATION

1.2. The proposed site is located to the south east of the village of Shifnal in Shropshire. It is bounded by the A464 to the south and west, by the Wolverhampton to Shrewsbury railway line to the north and open fields to the east and north. Upton Lane runs through the site. The greenfield site is approximately 44.92 ha, with the north west corner of the site used for commercial fishing in two man-made ponds.

- Nearest Postcode: TF11 8NZ
- OS Coordinates: 376000E, 306800N
- OS Grid Reference: SJ760068

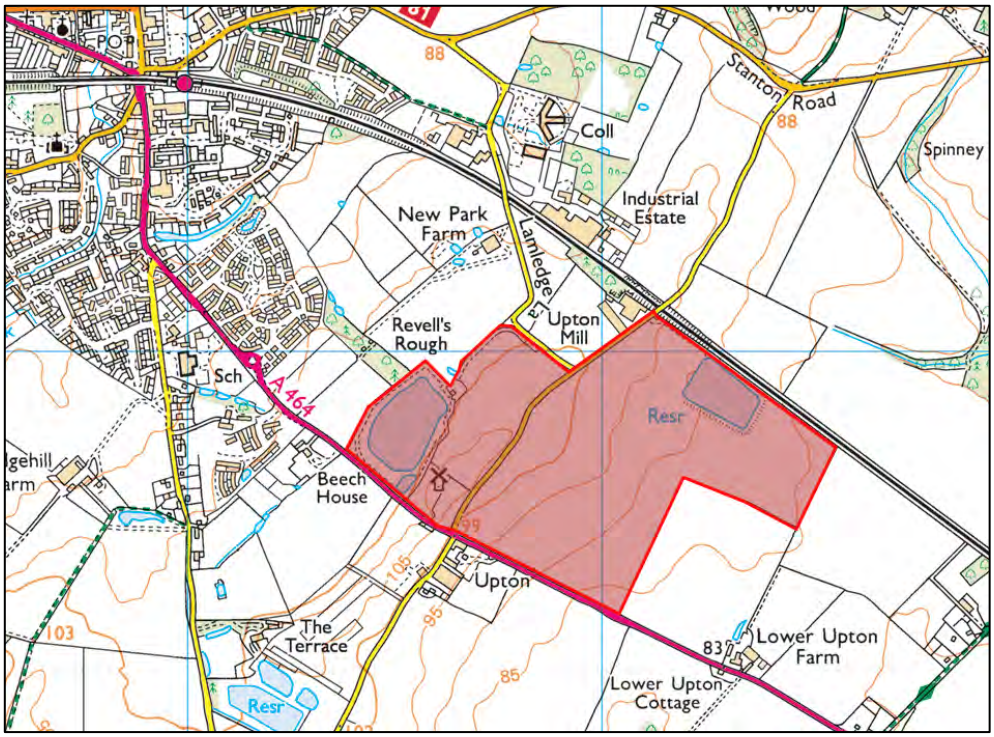

Figure 1.1 Site Location (Ordnance Survey)

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TOPOGRAPHY

1.3. Based on the Ordnance Survey maps, the site ranges in level between 85-105m AOD. The site appears to fall in level from a plateau at 105m AOD in the west of the site to the site boundary in all directions, reaching approximately 85m AOD at the eastern boundary.

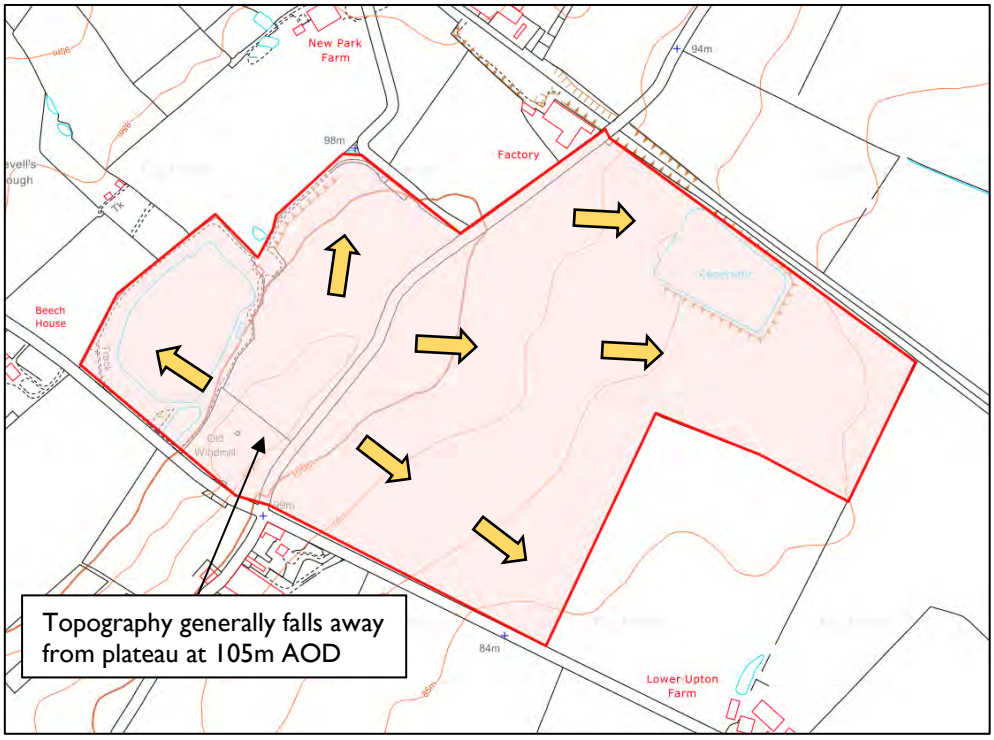

Figure 1.2 Site Plan (OS Map)

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PRELIMINARY PROPOSALS

1.4. The client's conceptual masterplan is shown in **Figure 1.3.** The development proposals include between 700 & 800 new homes with associated infrastructure works, including reprofiling works, creation of an access road, the filling in of the existing man-made fishing ponds and reservoir onsite. Landscaping works include landscape buffers to sensitive boundaries and existing pockets of woodland and watercourses retained and protected.

1.5. A full-sized plan of the below masterplan is included in **Appendix A**.

Figure 1.3 Conceptual Masterplan (Node)

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SECTION 2 PRELIMINARY FLOOD RISK ADVICE

FLUVIAL FLOOD RISK

Gov.UK Planning Advice Maps

2.1. The Gov.UK online Flood Maps provide initial information about areas potentially at risk of fluvial flooding. These maps indicate that the site is located within Flood Zone 1 (low probability of fluvial flooding).

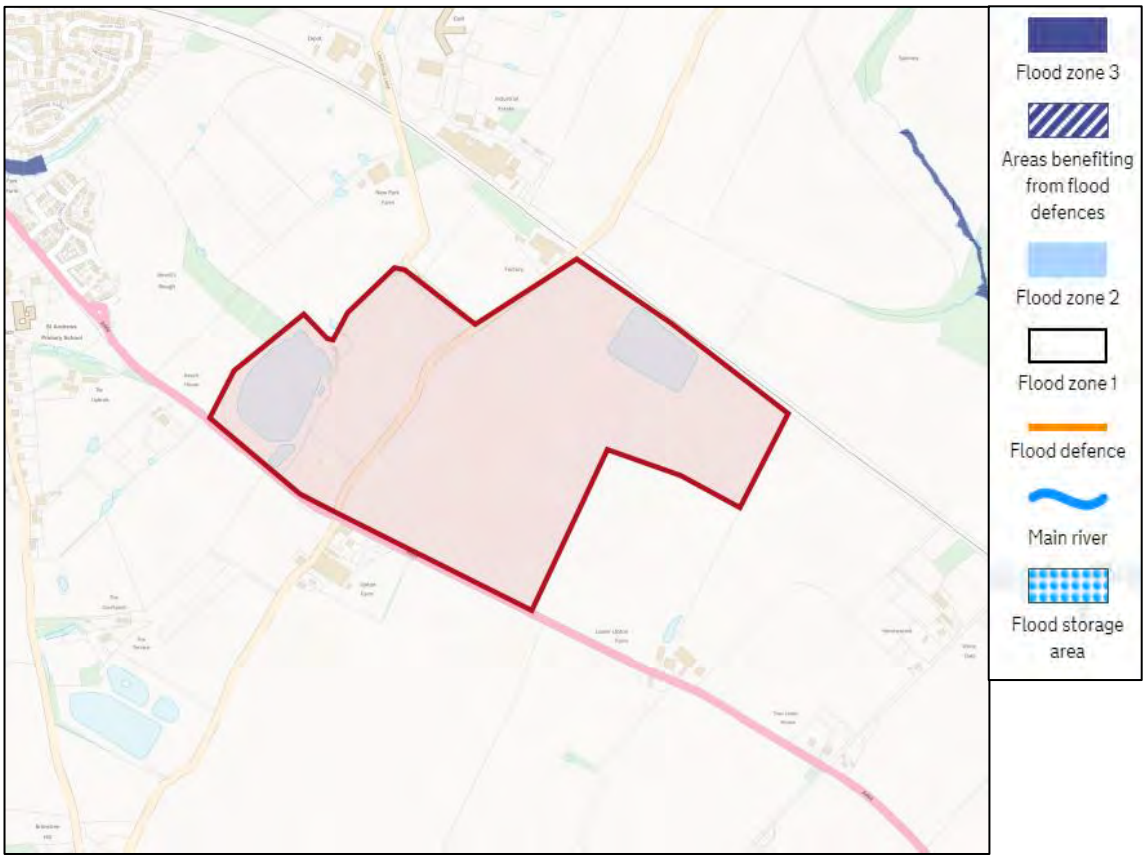

Figure 2.1 Flood Map for Planning (Gov.UK)

Main Rivers

2.2. According to mapping from the EA there are no main rivers within the vicinity of the site. The nearest main river is Wesley Brook, located over 800m to the north west of the site.

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Figure 2.2 Main River Map (Environment Agency)

FLOOD ZONE GUIDANCE

2.3. The Flood Risk and Coastal Change Guidance indicates which development type is suitable for each Flood Zone as shown in **Table 2.1 & 2.2**.

Flood Zone	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
1	✓	✓	✓	✓	✓
2	✓	Exception Test Required	✓	✓	✓
3a	Exception Test Required	x	Exception Test Required	✓	✓
3b	Exception Test Required	x	x	x	✓

Table 2.1 Flood Risk Classification (Gov.UK)

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Highly Vulnerable	• Police stations, Ambulance stations and Fire stations and Command Centres. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes & park homes intended for permanent residential use. • Installations requiring hazardous substances consent.
More Vulnerable	• Hospitals. • Residential institutions • Residential dwelling, student halls, drinking establishments/nightclubs and hotels. • Non–residential - Health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste.
Less Vulnerable	• Police, ambulance and fire stations which are not required during a flood. • Shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non–residential institutions not included in 'more vulnerable'; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which are not required during times of flood. • Sewage treatment works.

Table 2.2 Development Types (Gov.UK)

2.4. The conceptual masterplan (**Figure 1.3**) indicates that all residential developments (i.e. more vulnerable development) will be located within low probability areas (Flood Zone 1). Therefore, the client's preliminary proposals meet the requirements of the NPPF at this stage.

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SECTION 3 SHROPSHIRE LEVEL 1 SFRA

3.1. A review of Shropshire Level 1 Strategic Flood Risk Assessment October 2018 (SFRA) confirm that the site is within Flood Zone1.

3.2. In accordance with the SFRA any development on Greenfield windfall sites should follow the design principals set out in SuDS Manual 2015 C753.

3.3. The SFRA recommends the submission of the Proforma 'Appendix B' in the SuDS manual. This submission is a desk-based submission and will be developed as the detail design of the site progresses.

3.4. In accordance with the requirements of the SFRA, surface water runoff should be restricted in accordance with Table 2.3 below. The final drainage design will meet these discharge criteria and were possible betterment will be provided.

Site Characteristics	Annual Exceedance Probability (AEP)	Equivalent Return Period
Average site ground slope greater than 1%	100%	1 in 1 year
Average site ground slope 1% or less	50%	1 in 2 year

Table 2.3 Runoff Rates

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SECTION 4 EXISTING DRAINAGE INFRASTRUCTURE

PUBLIC SEWERS

4.1. The public sewers within the vicinity of the proposed site are owned and maintained by Severn Trent Water (STW). Copies of their records have been requested and are included in **Appendix C** of this report.

Foul and Surface Water Sewers

4.2. The STW records indicate that there is a network of foul and surface water sewers approximately 220m to the west of the site. The records indicate that the said sewers are currently the subject of a S104 agreement, serving the new housing development at Wadlow Drive.

Combined Water Sewers

4.3. Records indicate that there is a 150mm combined sewer within Lamledge Lane, approximately 275m north from the north east corner of the site.

4.4. A review of Shropshire Water Cycle evidence for Shropshire Local Plan July 2014 prepared by Halcrow group Ltd. concludes in Table 2.2.2 that the results of a WwTW Capacity assessment on the Shifnal works confirms that there is Hydraulic capacity in the works for the planned expansion of Shifnal.

4.5. An assessment of the Hydraulic capacity of the sewer system to the East of Shifnal is summarised as follows: -

There appears to be a lot of planned development to the East of Shifnal. Although on a site-by-site basis there shouldn't be any major capacity problems, the culmination of flows from all planned sites could severely affect the capacity of the system. The system is built up of fairly small diameter sewers with all planned sites primarily connecting into 150mm diameter foul sewers. It would be preferable to develop the sites South of the railway line as flows from the planned Northern sites have to pass through a pinch point where there is known external flooding. The extra foul flows could exacerbate the current problems. It is strongly recommended that hydraulic modelling is undertaken for all planned sites in combination (rather than site-by-site) so the true extent of any impact can be ascertained. Flows will gravitate South through Shifnal to a 225mm diameter pumped rising main which pumps to the treatment works. This will have to be assessed for the extra flows to ascertain any detrimental impact.

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4.6 Additional onsite attenuation capacity could be accommodated within the new development Foul drainage Pump station to assist with the existing capacity constraint.

PRIVATE DRAINAGE

4.7. There is no known private drainage onsite.

PRELIMINARY DEVELOPMENT DRAINAGE

Surface Water Drainage

4.8. The ground conditions are unconfirmed at this stage; however, the use of infiltration drainage is stated in the Shropshire Level 1 SFRA as being preferred in this area of Shropshire. The drainage strategy will be devised based on an infiltration-based system being the primary outlet/destination for surface water runoff. This strategy accords with the LPA's requested containment of the surface water drainage within the site. This is also in accordance with Paragraph 090 of the Flood Risk and Coastal Change Guidance within the Planning Practice Guidance.

4.9. A detailed site investigation will establish the infiltration characteristics of the site. If infiltration is not an option, then discharge into a nearby watercourse should be investigated. All rates of discharge will be limited to those detailed in Table 2.3 in accordance with the requirements of the SFRA. The proposed site has two waterbodies which may have offsite outfalls, these could be reused. This approach will be the subject of detail consolation with the Local drainage authority and the surface water discharge will be designed to provide betterment to existing onsite run off profiles.

Foul Water Drainage

4.10. As noted, earlier Para 3.4 and 3.5 it is reasonable to expect that sufficient capacity exists in the nearby Severn Trent Water network to allow the discharge of the Foul water into the local Sewer system.

4.11. A gravity connection into the existing network is unlikely and it is proposed that a public sewer be requisitioned by STW under Sections 98-101 of the Water Industry Act 1991.

4.12. Severn Trent Water are being consulted to verify the assumptions above

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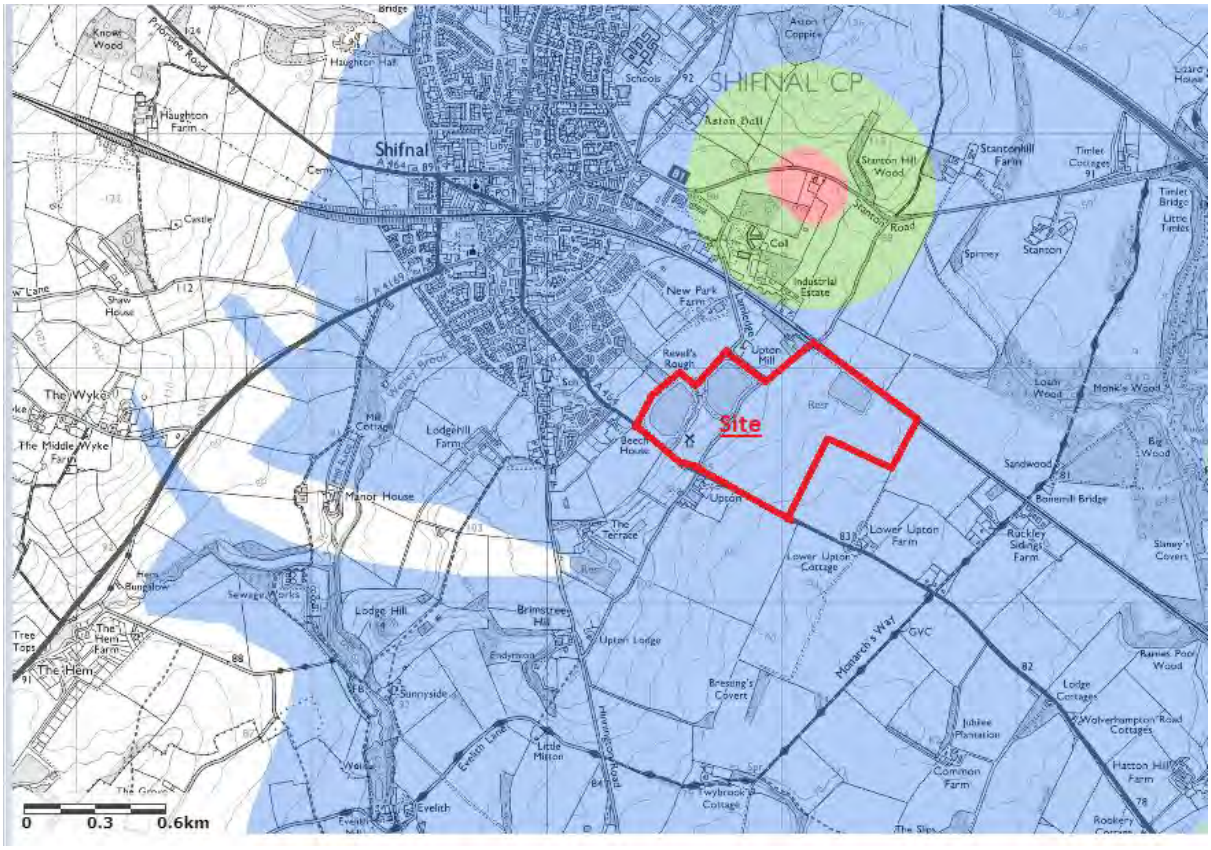
Sewer Diversions

4.13. Not applicable for this site.

Ground Water

4.14. The site is underlain by an aquifer. An extract from the published defra Maps is provided below. The extract indicates the status of the site relative to the Source Protection Zones. (SPZ)

4.15. The site is designated SPZ zone 3.



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Designations

Land-Based Designations

Non-statutory

Source Protection Zones merged (England)

- Zone I - Inner Protection Zone
- Zone I - Subsurface Activity
- Zone II - Outer Protection Zone
- Zone II - Subsurface Activity
- Zone III - Total Catchment
- Zone III - Subsurface Activity
- Zone of Special Interest

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SECTION 5 UTILITIES INFRASTRUCTURE

ELECTRICITY

5.1. The electricity in the area is supplied by Western Power Distribution. Their records indicate high voltage overhead power lines (11kV) along the north western boundary of the site, and along the A464 adjacent to the western boundary.

5.2. The need for any offsite reinforcement to meet the power demands of the development will be confirmed with Western Power Distribution.

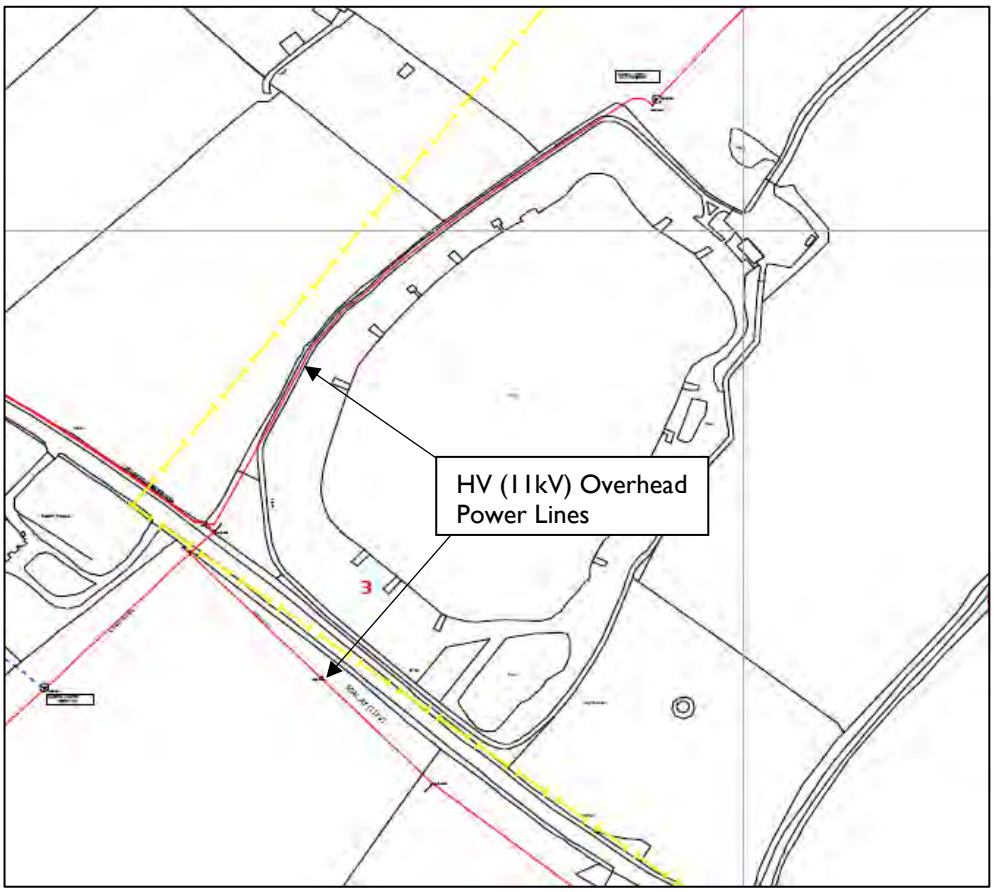

Figure 4.1 Electricity Infrastructure (Western Power Distribution)

5.3. A copy of the Western Power Distribution records has been included within **Appendix D**.

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TELECOMMUNICATION

5.4. Openreach records indicate several assets in the vicinity of the site which serve the existing dwellings. Discussions with Openreach will be undertaken to determine existing infrastructure capacity.

5.5. A copy of Openreach records has been included within **Appendix E**.

MAINS WATER

5.6. Severn Trent Water records indicate a number of water mains around the site that vary in size which could serve this development.

5.7. There is a 4-inch UPVC main within the A464 on the western boundary of the site which ends at junction with Upton Lane as well as a100mm UPVC main within Upton Lane on the other side of the A464. In addition to these, there is a 600mm water main within the fields beyond the north western boundary of the site, approximately 160m away.

5.8. Connections from these mains may have enough capacity to supply the site however it is expected that a direct connection to the 600mm distributor main (north of the site) would be most suitable/feasible. Discussions with STW will be undertaken to ascertain whether a connection is feasible or if any offsite reinforcement works are required to meet the water supply demands. Such consultations and discussions would progress once the Sites status within the local development plan is secured

5.9. A copy of the STW records have been included within **Appendix F**.

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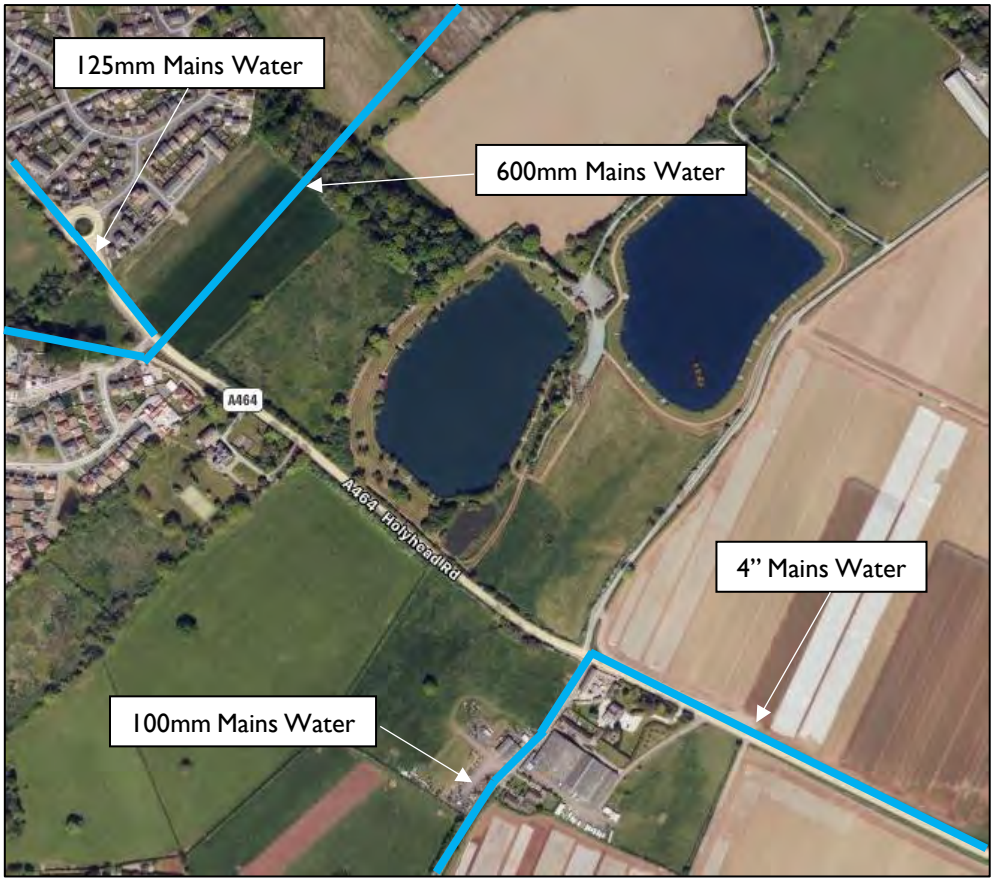

Figure 4.2 Water Infrastructure Overlaid onto Satellite Map (STW)

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SECTION 6 CONCLUSION

6.1. This flood risk and utilities appraisal provides an overview of the existing infrastructure on or around the proposed site and evaluates flood risk issues that may potentially influence the conceptual masterplan. In summary, the statement confirms that:

a) The proposed development lies within Flood Zone 1 (low probability of fluvial flooding). In accordance with the Flood Risk and Coastal Change Guidance these proposals are acceptable in this zone.

b) As there is no clearly identifiable nearby watercourse, it is expected that the surface water runoff will be designed in accordance with the SuDS Manual 2015 C753 via the use of infiltration.

c) The destination of the proposed foul water effluent will be to the existing Severn Trent Water maintained network. A developer's enquiry is currently being progressed with Severn Trent Water.

d) Discussions with Western Power Distribution will be undertaken to establish the proposed electricity route(s) to the site.

e) The existing BT Openreach infrastructure that surrounds the site may be able to cater for the site proposals. Discussions with Openreach should be undertaken.

f) Discussions with Severn Trent Water are required to establish the proposed mains water route(s) to the site.

g) Our client has confirmed that all the aforementioned consultations will be progressed without delay should the Local Planning Authority wish to take the site further within the local plan process.

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APPENDIX A

LEGEND

- Site boundary
- Character area 1
- Character area 2
- Character area 3
- Character area 4
- Green infrastructure
- Balancing ponds
- Primary route
- Secondary route
- Tertiary route
- Private drive
- Footpath
- Hedges
- Woodland planting for screening
- Avenue trees
- Green buffer
- Children's play
- Upton Lane widened
- Key view to old windmill
- New roundabout
- Vehicular access
- Pedestrian access
- Old Windmill
- Man made fishing ponds and agricultural filled in for residential development
- Non-designated heritage assets
- Road bridge across railway line

Opportunities

1. Redevelop land to north-west of Upton Lane for residential development by filling in man made fishing ponds
2. Protect old windmill ruin and set within open space
3. Widen Upton Lane to improve access
4. Provide new roundabout junction to slow speed of traffic
5. Protect significant views of old windmill by offsetting development
6. Create woodland edge to screen site and long distance views
7. Create green corridor through residential development
8. Remove reservoir and provide new balancing pond / green infrastructure

Revisions	1: Character areas and detail
Site:	**Shifnal**
Client:	Nurton
Title:	**Site opportunities**
Scale:	1:2500 @A2
Drawing No.	003
Revision:	1
Date of Issue:	15.04.20
Drawn by:	KK
Node Ref:	NUR0444

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23 Colmore Row
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node

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APPENDIX B

Flood map for planning

Your reference	Location (easting/northing)	Created
Upton Road	**375974/306724**	**19 Mar 2019 12:20**

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

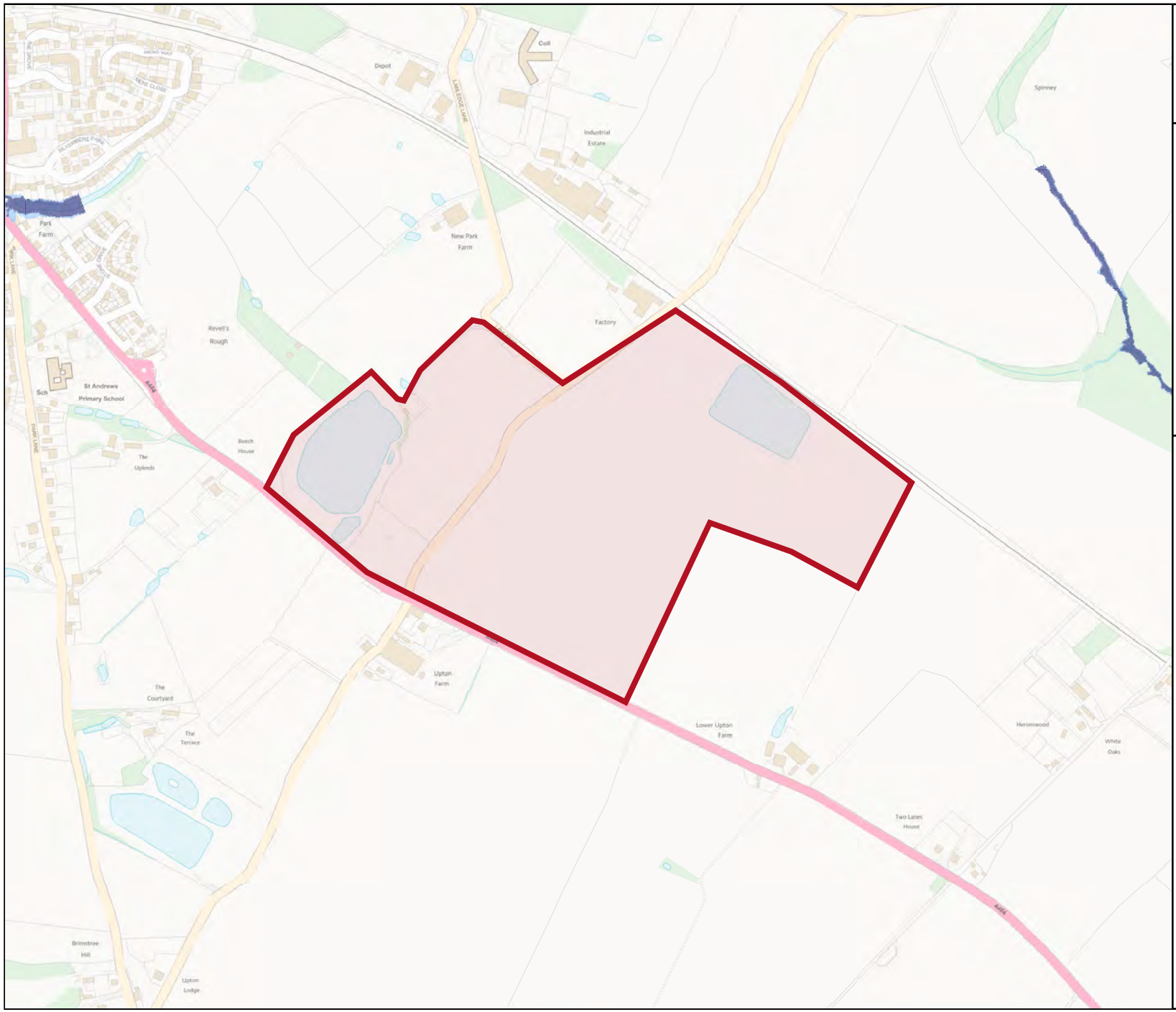
- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/



Environment Agency

Flood map for planning

Your reference
Upton Road

Location (easting/northing)
375974/306724

Scale
1:10000

Created
19 Mar 2019 12:20

- Selected area
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 100 200 300m

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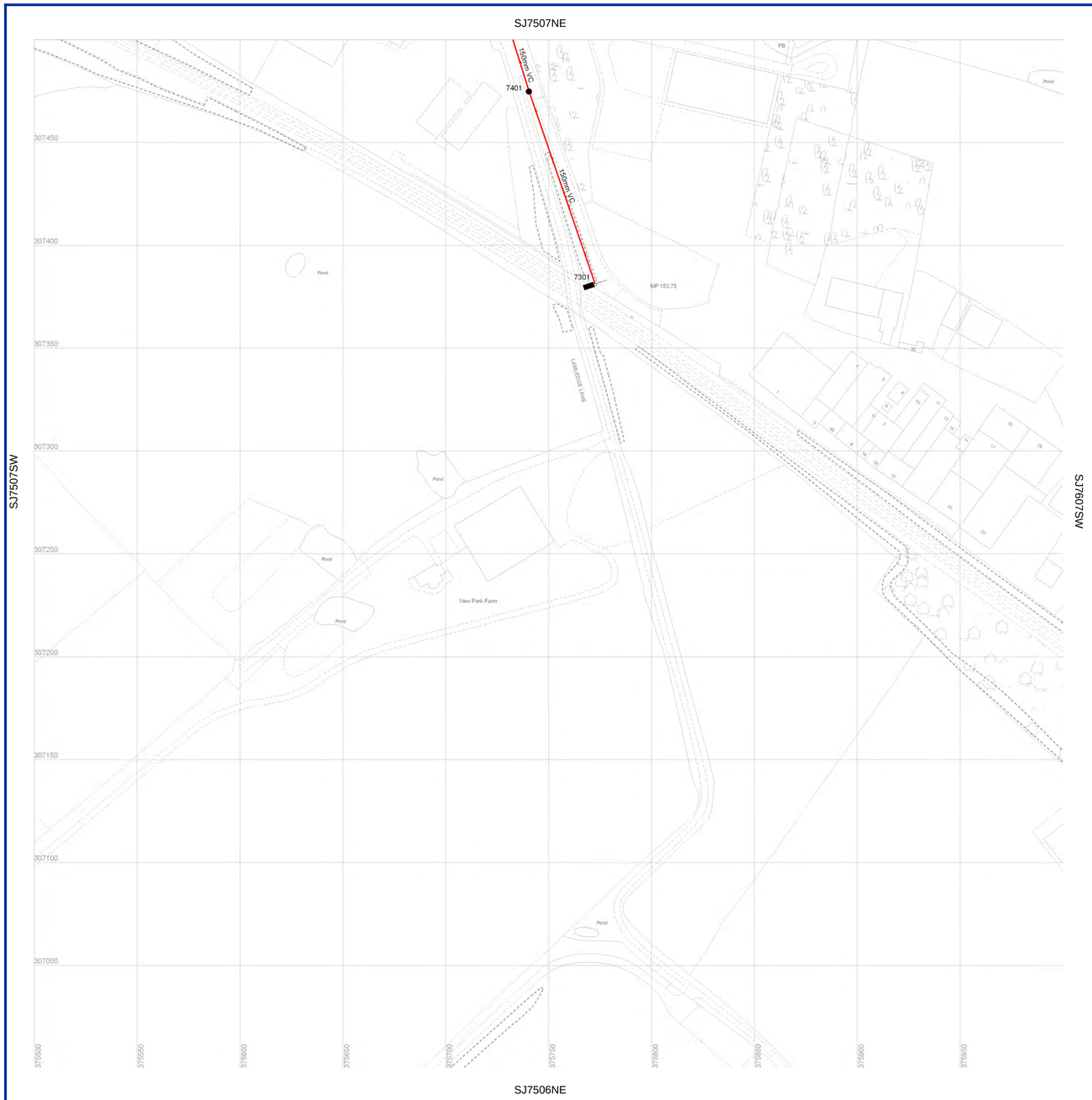
APPENDIX C



Sewer Node **Sewer Pipe Data**

REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID
SJ75077401	92.61	89.97	88.27	C	VC	C	150	nil	38.88	nill

- Abandoned Sewer
- Private Combined Gravity Sewer
- Private Foul Gravity Sewer
- Private Surface Water Gravity Sewer
- Public Combined Gravity Sewer
- Public Foul Gravity Sewer
- Public Surface Water Gravity Sewer
- Trunk Combined Gravity Sewer
- Trunk Foul Use Gravity Sewer
- Trunk Surface Water Gravity Sewer
- Combined Use Pressurised Sewer
- Foul Use Pressurised Sewer
- Surface Water Pressurised Sewer
- Highway Drain
- Combined Lateral Drain (SS)
- Foul Lateral Drain (SS)
- Surface Water Lateral Drain (SS)
- Cable, Earthing
- Cable Junction
- Cable, Optical Fibre/Instrumentation
- Cable, Low Voltage
- Cable, High Voltage
- Cable, Other
- Housing, Building
- Housing, Kiosk
- Disposal Site
- Sewage Treatment Works
- Housing, Other
- Pipe Support Structure
- Sewage Pumping Facility
- Sewer Facility Connection Inlet / Outlet
- Blind Shaft
- Combined Use Manhole
- Flushing Chamber
- Foul Use Manhole
- Grease Trap
- Head Node
- Hydrobrake
- Lamphole
- Outfall
- Overflow
- Penstock
- Petrol Interceptor
- Sewer Blockage
- Sewer Collapse
- Sewer Chemical Injection Point
- Sewer Junction
- Sewerage Air Valve
- Sewerage Hatch Box Point
- Sewerage Isolation Valve
- Soakaway
- Surface Water Manhole
- Vent Column
- Waste Water Storage
- Culverted Watercourse
- Pre-1937 Properties

MATERIALS

AC	- ASBESTOS CEMENT
BR	- BRICK
CC	- CONCRETE BOX CULVERT
CI	- CAST IRON
CO	- CONCRETE
CSB	- CONCRETE SEGMENTS (BOLTED)
CSU	- CONCRETE SEGMENTS (UNBOLTED)
DI	- DUCTILE IRON
GRC	- GLASS REINFORCED CONCRETE
MAC	- MASONRY IN REGULAR COURSES
MAR	- MASONRY RANDOMLY COURSED
PE	- POLYETHLENE
PF	- PITCH
PP	- POLYPROPYLENE
PSC	- PLASTIC STEEL COMPOSITE
PVC	- POLYVINYL CHLORIDE
RPM	- REINFORCED PLASTIC MATRIX
SI	- SPUN (GREY) IRON
XXX	- OTHER

CATEGORIES

W	- WEIR
C	- CASCADE
DB	- DAMBOARD
SE	- SIDE ENTRY
FV	- FLAP VALVE
BD	- BACK DROP
S	- SIPHON
HD	- HIGHWAY DRAIN
S104	- SECTION 104

SHAPE

C	- CIRCULAR
E	- EGG SHAPED
O	- OTHER
R	- RECTANGLE
S	- SQUARE
T	- TRAPEZOIDAL
U	- UNKNOWN

TABULAR KEY

A. Sewer pipe data refers to downstream sewer pipe.

B. Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.

C. Gradient is stated a 1 in...

PURPOSE

C	- COMBINED
E	- FINAL EFFLUENT
F	- FOUL
L	- SLUDGE
S	- SURFACE WATER

All Private Sewers are shown in magenta
All section 104 sewers are shown in green
All Sewers that have been transferred to Severn Trent Water after the 1st October 2011, but have not been surveyed and confirmed by Severn Trent Water are shown in orange

N W E S

SEVERN TRENT WATER

Severn Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0845 601 6616

SEWER RECORD (TABULAR)

O/S Map scale: 1:1250
Date of issue: 29.03.19
Sheet No. 1 of 1

This map is centred upon:
O / S Tile reference:
SJ7507SE

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2. This map and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this Map and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of Severn Trent Water's assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems.
3. On **1 October 2011** most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012 (date to be confirmed).
Private pumping stations, which form part of these sewers or lateral drains, will transfer to the ownership of Severn Trent Water on or before 1 October 2016.
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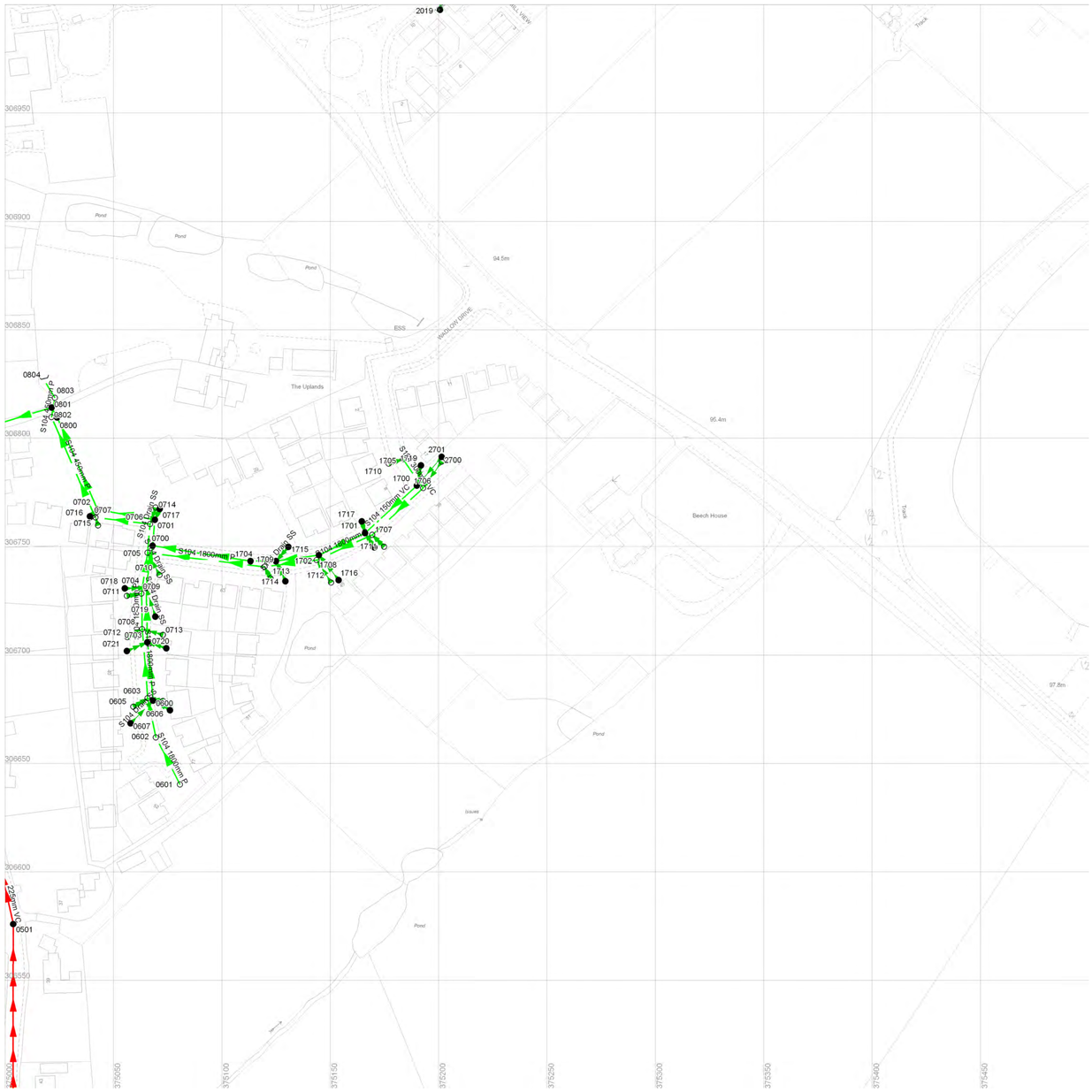
SJ7507SW

SJ7506NE



SJ7506NE

SJ7506SW

Sewer Node / Sewer Pipe Data

REFERENCE	COVER LEVEL	INV LEVEL UPSTR	INV LEVEL DOWNSTR	PURP	MATL	SHAPE	MAX SIZE	MIN SIZE	GRADIENT	YEAR LAID
SJ75060501	94.44	90.96	87.93	C	VC	C	225	nil	47.72	nill
SJ75060600	94.57	93.22	93.04	F	VC	C	150	nil	0.00	nill
SJ75060601	95.07	90.40	90.35	S	P	C	1800	nil	0.00	nill
SJ75060602	94.76	90.35	90.32	S	P	C	1800	nil	0.00	nill
SJ75060603	94.58	90.32	90.25	S	P	C	1800	nil	0.00	nill
SJ75060604	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060605	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060606	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060607	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060700	93.82	91.90	91.32	F	VC	C	150	nil	0.00	nill
SJ75060701	93.68	91.32	90.84	F	VC	C	150	nil	0.00	nill
SJ75060702	92.68	90.84	90.32	F	VC	C	150	nil	0.00	nill
SJ75060703	94.31	93.04	92.88	F	VC	C	150	nil	0.00	nill
SJ75060704	94.06	92.88	91.90	F	VC	C	150	nil	0.00	nill
SJ75060705	93.88	90.18	90.15	S	P	C	1800	nil	0.00	nill
SJ75060706	93.72	90.15	90.10	S	P	C	1800	nil	0.00	nill
SJ75060707	92.85	90.10	nil	S	P	C	450	nil	0.00	nill
SJ75060708	94.26	90.25	90.22	S	P	C	1800	nil	0.00	nill
SJ75060709	94.10	90.22	90.18	S	P	C	1800	nil	0.00	nill
SJ75060710	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060711	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060712	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060713	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060714	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060715	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75060716	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060717	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060718	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060719	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060720	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060721	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75060800	91.37	90.32	89.60	F	VC	C	150	nil	0.00	nill
SJ75060801	91.08	89.60	89.41	F	VC	C	150	nil	0.00	nill
SJ75060802	91.07	89.94	89.91	S	P	C	450	nil	0.00	nill
SJ75060803	91.06	89.94	nil	S	P	C	450	nil	0.00	nill
SJ75061700	94.07	92.84	92.62	F	VC	C	150	nil	0.00	nill
SJ75061701	94.07	92.62	92.47	F	VC	C	150	nil	0.00	nill
SJ75061702	94.12	92.47	92.34	F	VC	C	150	nil	0.00	nill
SJ75061703	93.96	92.34	92.26	F	VC	C	150	nil	0.00	nill
SJ75061704	94.04	92.26	91.90	F	VC	C	150	nil	0.00	nill
SJ75061705	93.93	92.02	91.96	S	VC	C	300	nil	0.00	nill
SJ75061706	94.11	90.46	90.39	S	P	C	1800	nil	0.00	nill
SJ75061707	94.06	90.39	90.34	S	P	C	1800	nil	0.00	nill
SJ75061708	94.12	90.34	90.29	S	P	C	1800	nil	0.00	nill
SJ75061709	93.99	90.29	90.18	S	P	C	1800	nil	0.00	nill
SJ75061710	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75061711	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75061712	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75061713	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75061714	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75061715	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75061716	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75061717	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75061718	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75061719	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75062700	nil	nil	nil	S	nil	nil	nil	nil	0.00	nill
SJ75062701	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill
SJ75072019	nil	nil	nil	F	nil	nil	nil	nil	0.00	nill

- Abandoned Sewer
- Private Combined Gravity Sewer
- Private Foul Gravity Sewer
- Private Surface Water Gravity Sewer
- Public Combined Gravity Sewer
- Public Foul Gravity Sewer
- Public Surface Water Gravity Sewer
- Trunk Combined Gravity Sewer
- Trunk Foul Use Gravity Sewer
- Trunk Surface Water Gravity Sewer
- Combined Use Pressurised Sewer
- Foul Use Pressurised Sewer
- Surface Water Pressurised Sewer
- Highway Drain
- Combined Lateral Drain (SS)
- Foul Lateral Drain (SS)
- Surface Water Lateral Drain (SS)
- Cable, Earthing
- Cable Junction
- Cable, Optical Fibre/Instrumentation
- Cable, Low Voltage
- Cable, High Voltage
- Cable, Other
- Housing, Building
- Housing, Kiosk
- Disposal Site
- Sewage Treatment Works
- Housing, Other
- Pipe Support Structure
- Sewage Pumping Facility
- Sewer Facility Connection Inlet / Outlet
- Blind Shaft
- Combined Use Manhole
- Flushing Chamber
- Foul Use Manhole
- Grease Trap
- Head Node
- Hydrobrake
- Lamphole
- Outfall
- Overflow
- Penstock
- Petrol Interceptor
- Sewer Blockage
- Sewer Collapse
- Sewer Chemical Injection Point
- Sewer Junction
- Sewerage Air Valve
- Sewerage Hatch Box Point
- Sewerage Isolation Valve
- Soakaway
- Surface Water Manhole
- Vent Column
- Waste Water Storage
- Culverted Watercourse
- Pre-1937 Properties

MATERIALS

AC	- ASBESTOS CEMENT
BR	- BRICK
CC	- CONCRETE BOX CULVERT
CI	- CAST IRON
CO	- CONCRETE
CSB	- CONCRETE SEGMENTS (BOLTED)
CSU	- CONCRETE SEGMENTS (UNBOLTED)
DI	- DUCTILE IRON
GRC	- GLASS REINFORCED CONCRETE
MAC	- MASONRY IN REGULAR COURSES
MAR	- MASONRY RANDOMLY COURSED
PE	- POLYETHLENE
PF	- PITCH
PP	- POLYPROPYLENE
PSC	- PLASTIC STEEL COMPOSITE
PVC	- POLYVINYL CHLORIDE
RPM	- REINFORCED PLASTIC MATRIX
SI	- SPUN (GREY) IRON
XXX	- OTHER

CATEGORIES

W	- WEIR
C	- CASCADE
DB	- DAMBOARD
SE	- SIDE ENTRY
FV	- FLAP VALVE
BD	- BACK DROP
S	- SIPHON
HD	- HIGHWAY DRAIN
S104	- SECTION 104

SHAPE

C	- CIRCULAR
E	- EGG SHAPED
O	- OTHER
R	- RECTANGLE
S	- SQUARE
T	- TRAPEZOIDAL
U	- UNKNOWN

TABULAR KEY

A. Sewer pipe data refers to downstream sewer pipe.

B. Where the node bifurcates (splits) X and Y indicates downstream sewer pipe.

C. Gradient is stated a 1 in...

PURPOSE

C	- COMBINED
E	- FINAL EFFLUENT
F	- FOUL
L	- SLUDGE
S	- SURFACE WATER

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O/S Map scale: 1:1250
Date of issue: 29.03.19
Sheet No. 1 of 1

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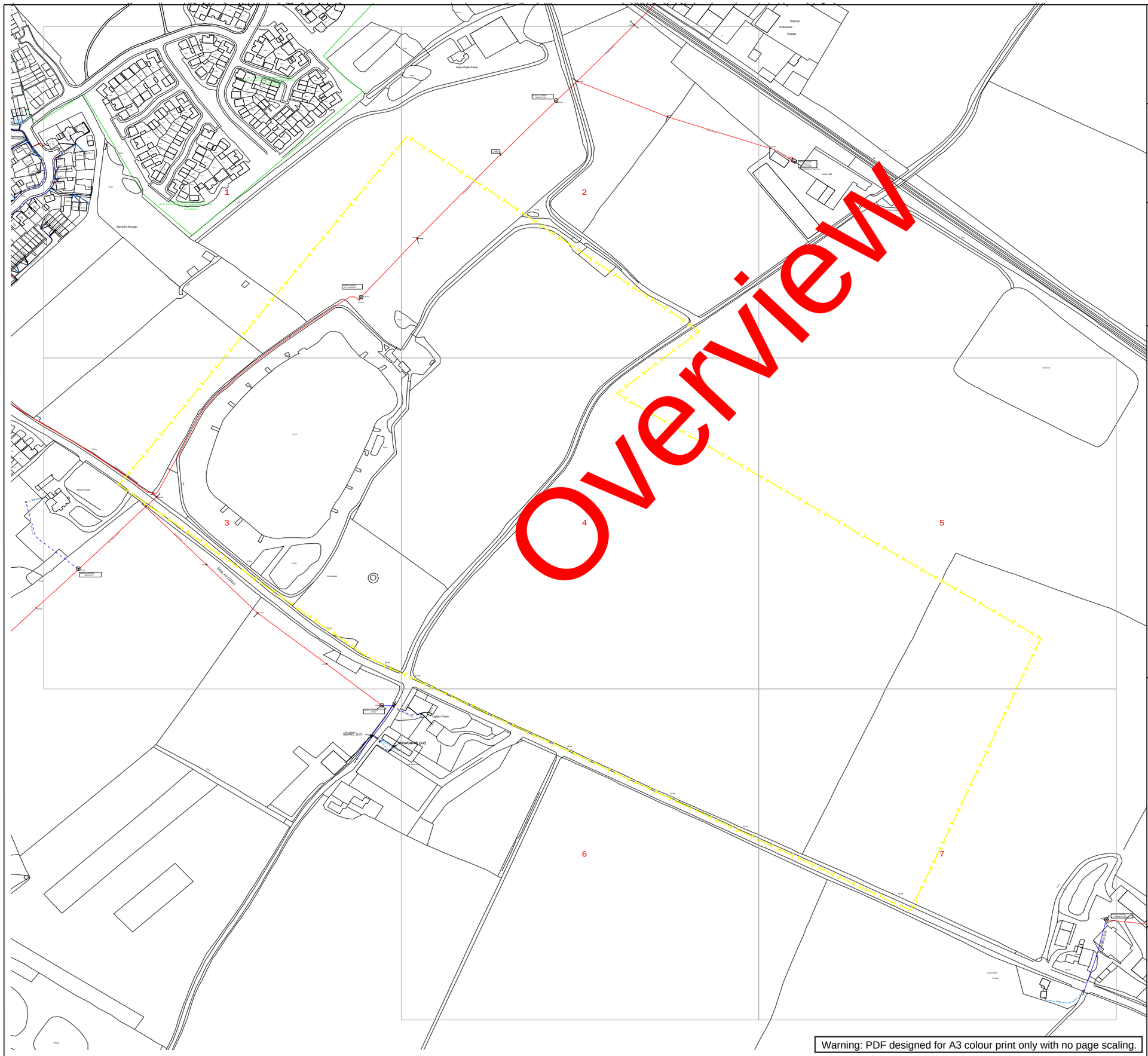
Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX D



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Serving the Midlands, South West and Wales

Contact Us

Mapping Enquiries:		**General Enquiries:**	
All areas	0121 623 9780	All areas	0800 096 3080

Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

Date Requested: 01/03/2019
Job Reference: 14969575
Site Location: 375816 306728
Requested by: Mr Shepherd Gilmour
Your Scheme/Reference: C1388 Upton Lane

IMPORTANT NOTICES

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Overhead Line

- PL
- Service
- LV
- HV (11kV)
- HV (33kV)
- HV (66kV)
- HV (132kV)

Underground Cable

SURF Telecoms

Pilot Cables

Link Box

PME Earth

Pole Mounted Transformer

Site Location

Line/Area

Underground Earth

Ground Mounted Transformer

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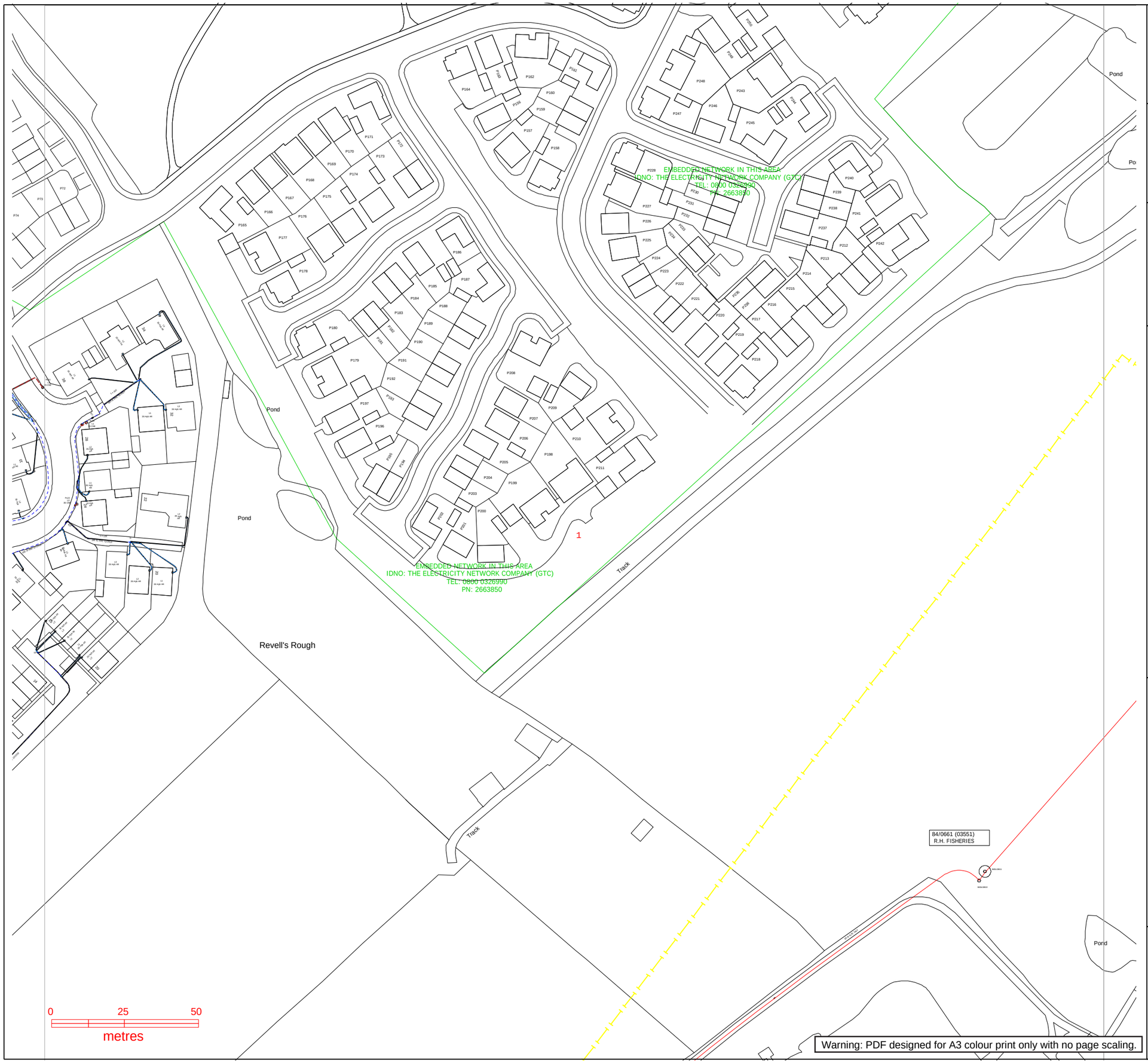

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Exact Scales:
1:1250 Area or Circle dig site
1:500 Line dig site

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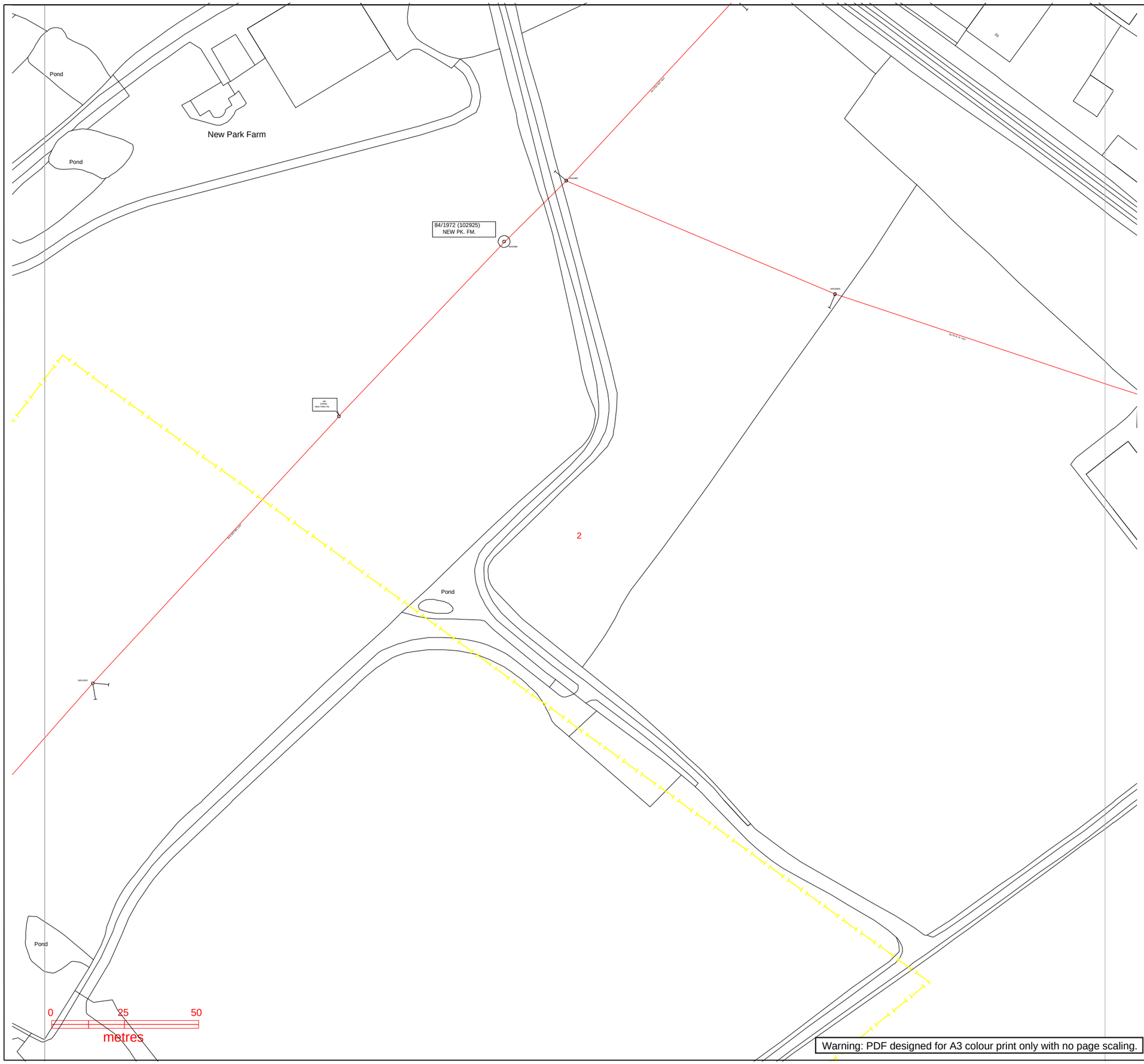

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Site Location

Line/Area

Underground Earth

Ground Mounted Transformer

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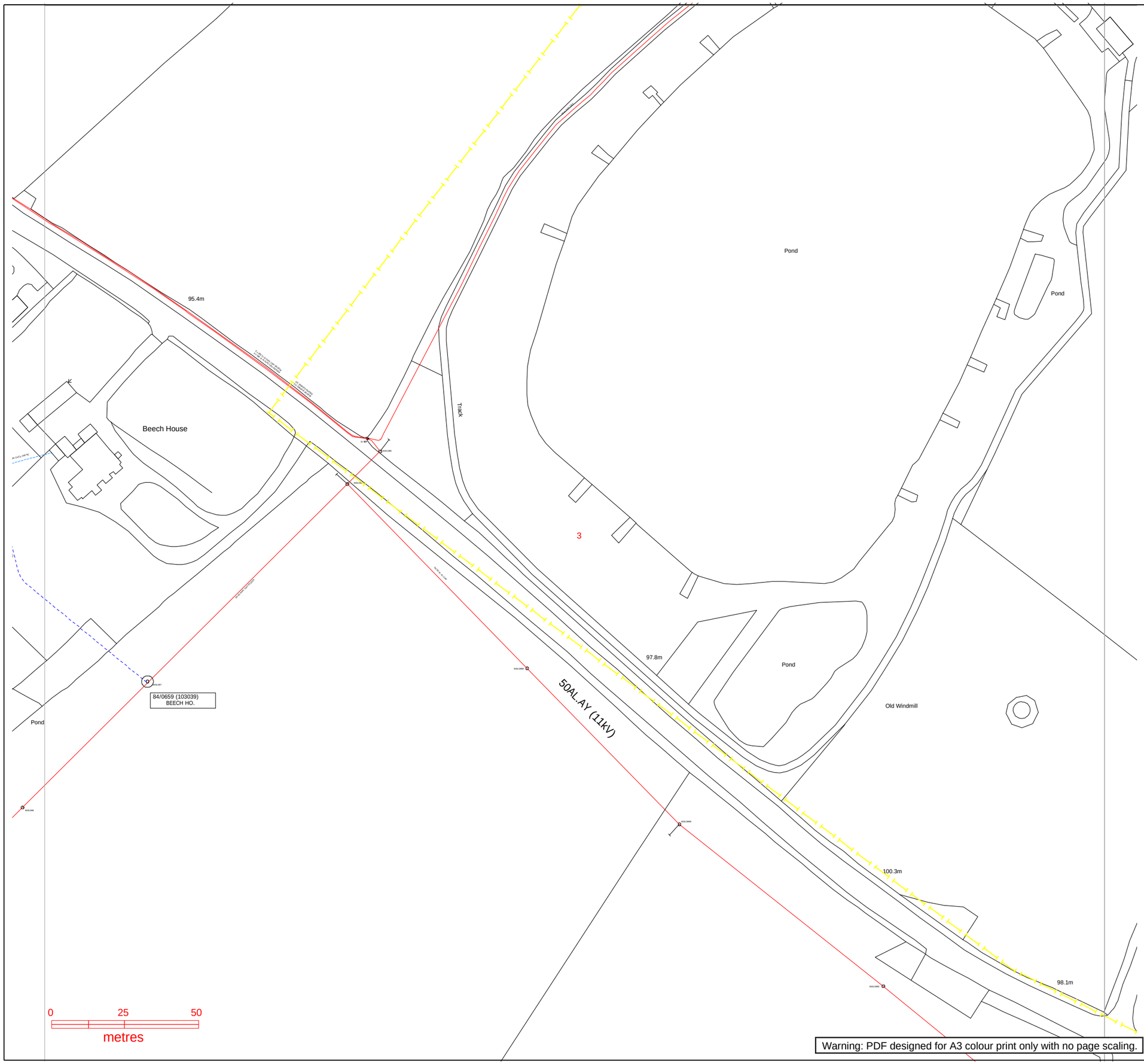

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Underground Cable

SURF Telecoms — S — S

Pilot Cables — P — P

Link Box

PME Earth

Pole Mounted Transformer

Site Location

Line/Area

— E — **Underground Earth**

Ground Mounted Transformer

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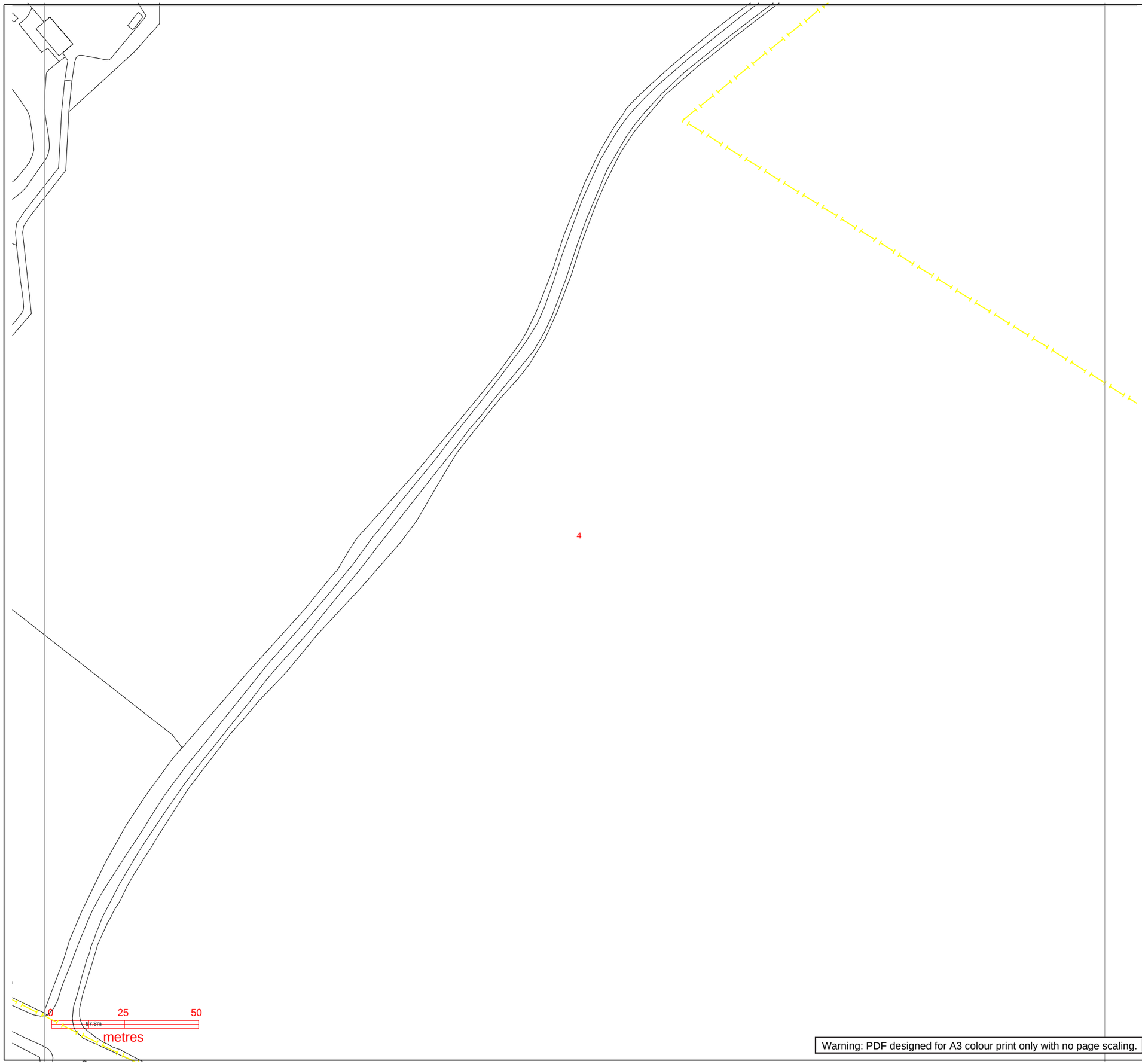

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Pilot Cables — P — P

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PME Earth

Pole Mounted Transformer

Site Location

Line/Area

— E — **Underground Earth**

Ground Mounted Transformer

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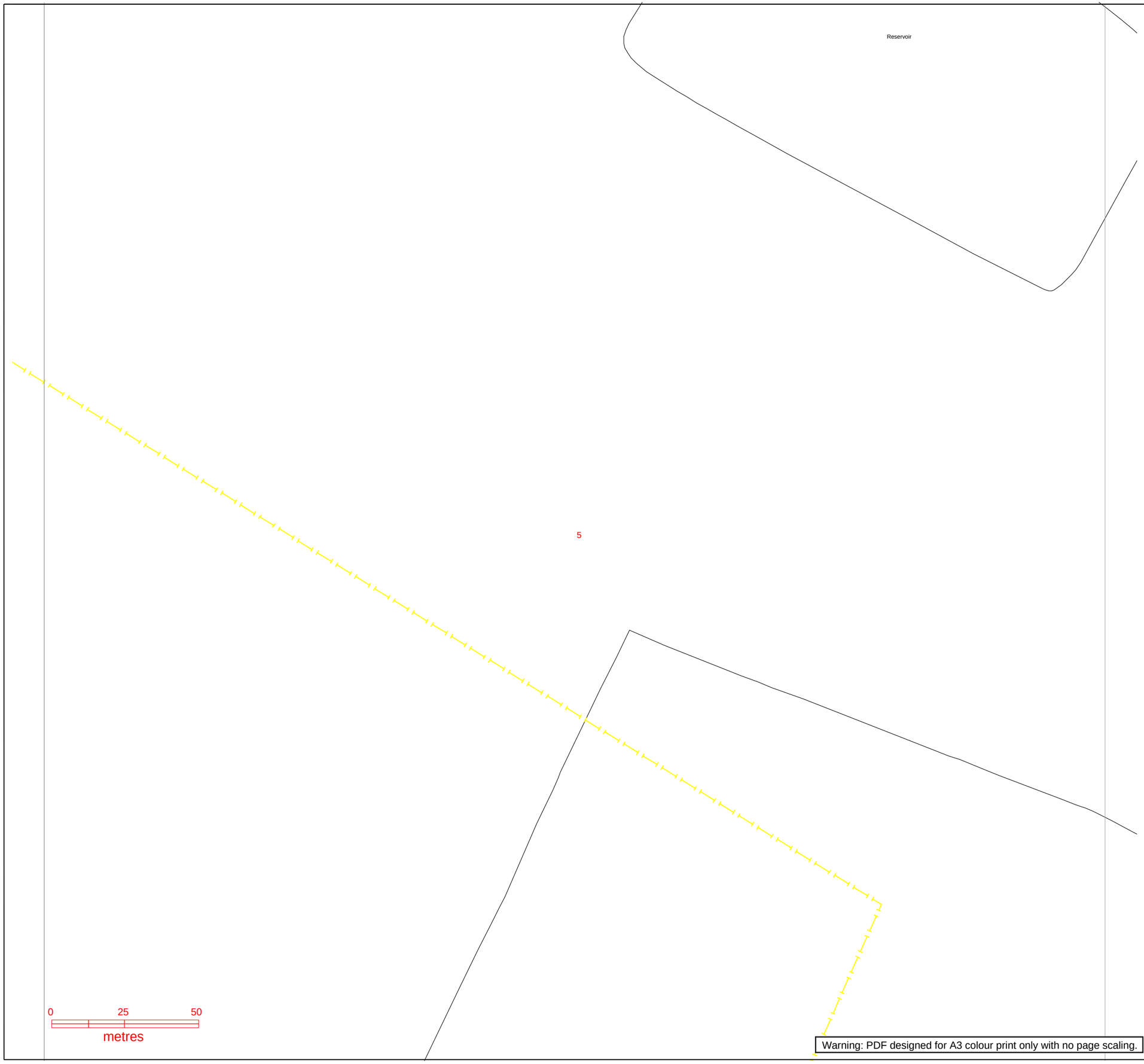

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Report damage immediately – KEEP EVERYONE AWAY FROM THE AREA
0800 6783 105

Date Requested: 01/03/2019
Job Reference: 14969575
Site Location: 375816 306728
Requested by: Mr Shepherd Gilmour
Your Scheme/Reference: C1388 Upton Lane
Exact Scales:
1:1250 Area or Circle dig site
1:500 Line dig site

IMPORTANT NOTICES

- This information is given as a guide only and its accuracy cannot be guaranteed. Services or recent additions to the network may not be shown.
- Cables, overhead lines & substations owned by other electricity network owners or private companies may be present and may not be shown.
- You should always verify exact locations of cables using a cable locator and by careful use of hand tools in accordance with HSE guidance note HSG47.
- When working within 10m of any overhead electric line you should follow the requirements of HSE Guidance Note GS6.
- For further advice on working near our electricity cables or lines, call our Contact Centre on 0800 096 3080.
- Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 66kV or 132kV underground cables and 66kV 132kV overhead lines – 0800 096 3080

Overhead Line

- PL
- Service
- LV
- HV (11kV)
- HV (33kV)
- HV (66kV)
- HV (132kV)

Underground Cable

SURF Telecoms

Pilot Cables

Link Box

PME Earth

Pole Mounted Transformer

Site Location

Line/Area

Underground Earth

Ground Mounted Transformer

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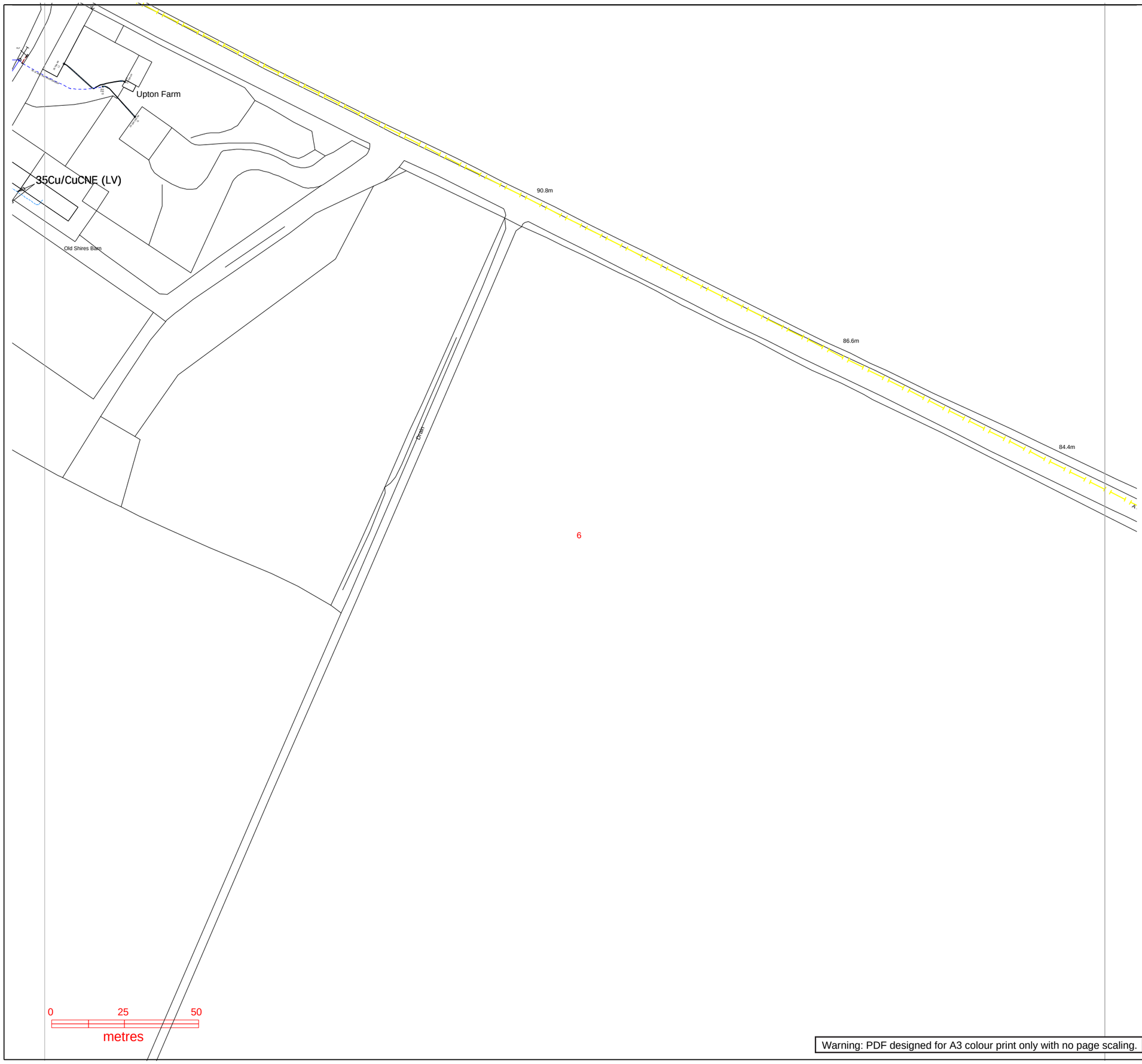

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WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contact Us

Mapping Enquiries:		**General Enquiries:**	
All areas	0121 623 9780	All areas	0800 096 3080

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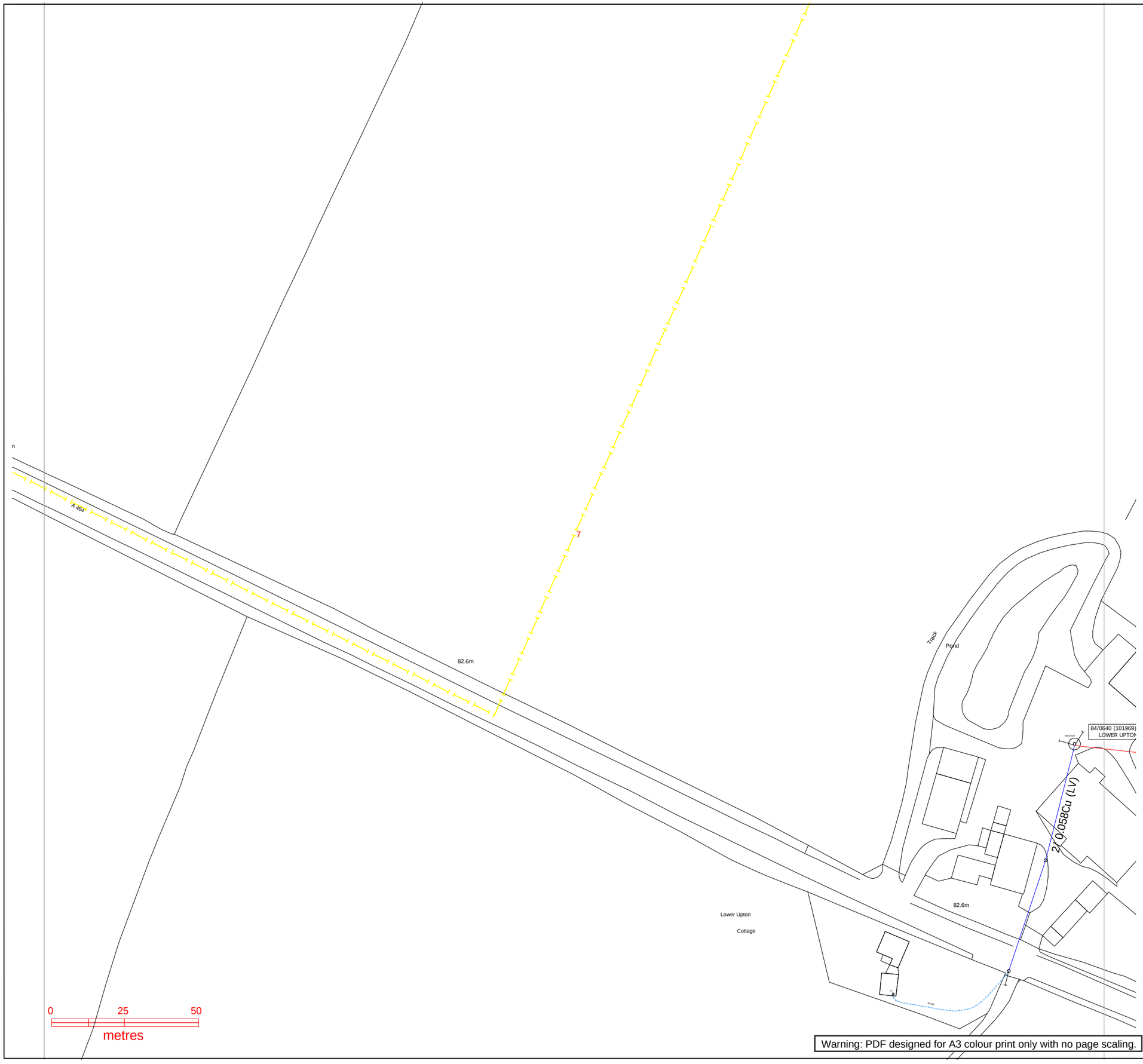

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Shepherd Gilmour
Consulting Engineers

Colchester House, 40 Peter Street, Manchester M2 5GP

(44)0161 837 1500

www.shepherd-gilmour.co.uk

APPENDIX E

Maps by email Plant Information Reply

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.
It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08.00 to 17.00)
www.openreach.co.uk/cbyd

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KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+	Hatchings	
Split Coupling	×	Built	
Duct Tee	▲	Planned	
Building		Inferred	
Kiosk	K	Duct	

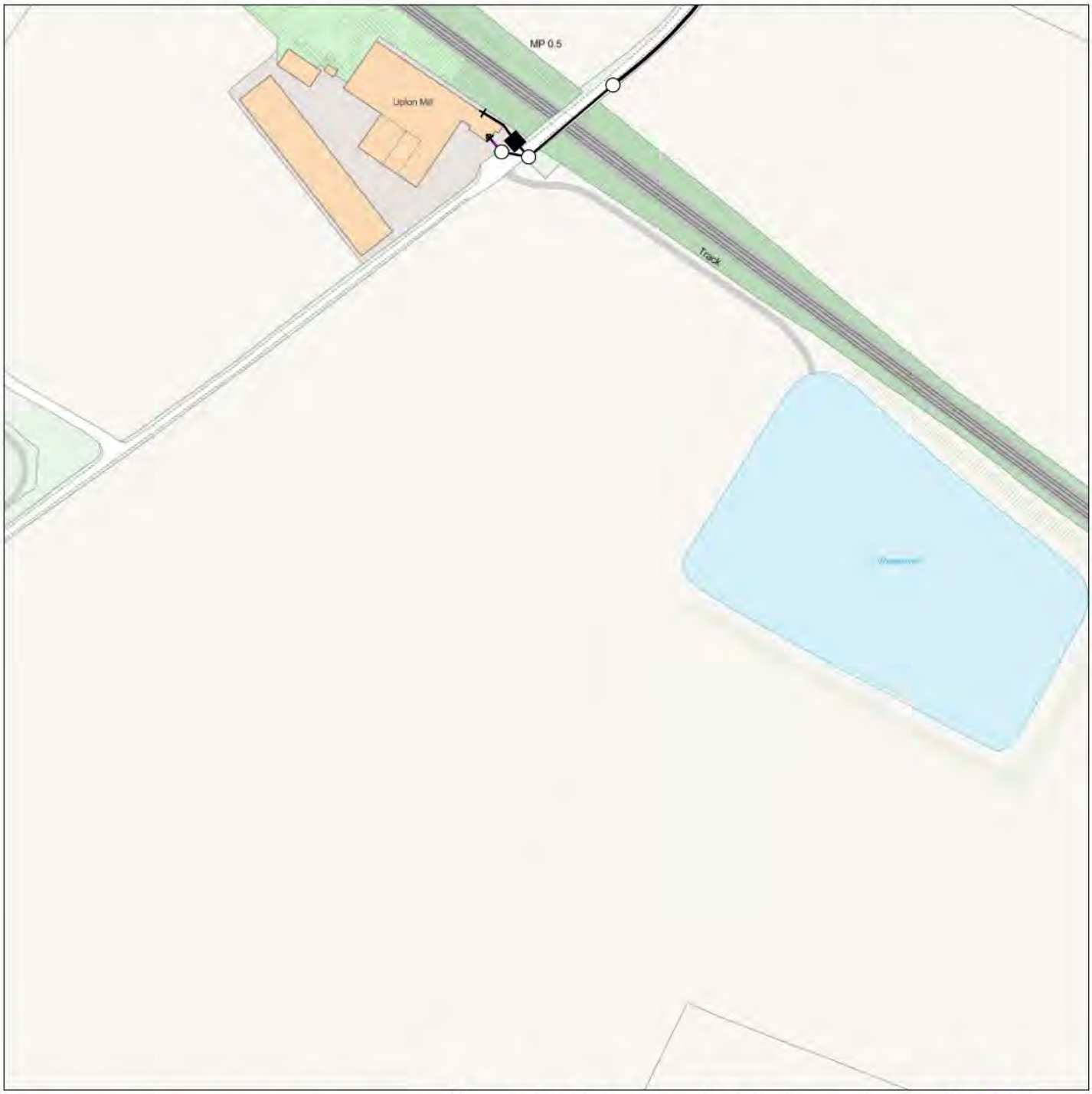
Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : CFA05011P
Map Reference : (centre) SJ7564506709
Easting/Northing : (centre) 375645,306709
Issued : 18/03/2019 17:01:44

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+	Hatchings	
Split Coupling	×	Built	
Duct Tee	▲	Planned	
Building		Inferred	
Kiosk	K	Duct	

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	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : JZS05029B
Map Reference : (centre) SJ7613206905
Easting/Northing : (centre) 376132,306905
Issued : 18/03/2019 17:02:22

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Maps by email Plant Information Reply

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KEY TO BT SYMBOLS

	Planned	Live
PCP		
Pole		
Box		
Manhole		
Cabinet		

Change Of State	+	Hatchings	
Split Coupling	×	Built	
Duct Tee	▲	Planned	
Building		Inferred	
Kiosk	K	Duct	

Other proposed plant is shown using dashed lines. BT Symbols not listed above may be disregarded. Existing BT Plant may not be recorded. Information valid at time of preparation. Maps are only valid for 90 days after the date of publication.

	Pending Add	In Place	Pending Remove	Not In Use
Power Cable				
Power Duct				N/A

BT Ref : PUU05024J
Map Reference : (centre) SJ7591806629
Easting/Northing : (centre) 375918,306629
Issued : 18/03/2019 17:02:49

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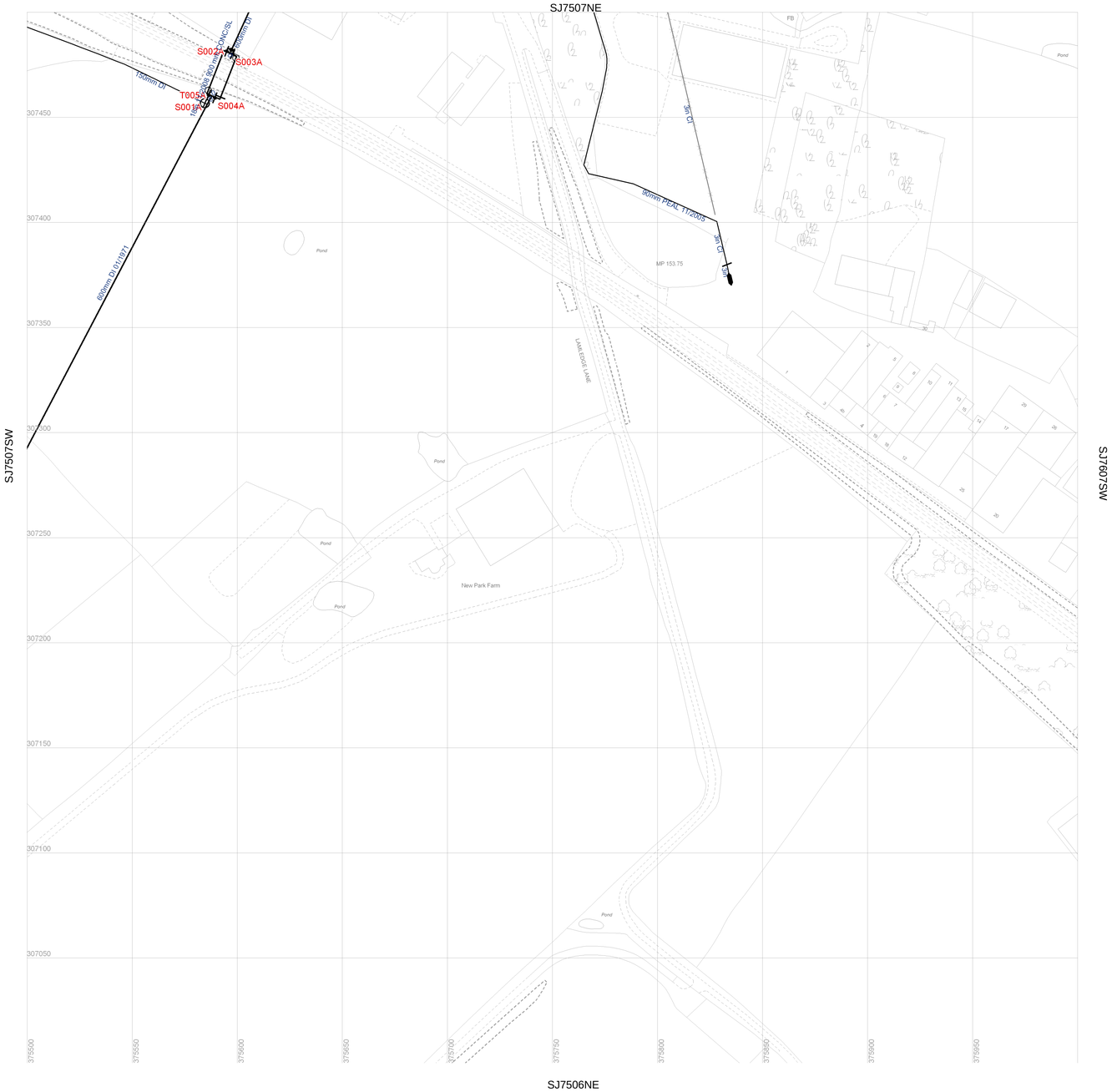
APPENDIX F



Distribution Main
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Fire Main
Non-Domestic Customer Service Pipe
Domestic Customer Service Pipe
Abandoned Main
Elevated Main
Aqueduct
Duct
Cable, Earthing
Cable, Optical Fibre/Instrumentation
Cable, Low Voltage
Cable, High Voltage
Cable, Other

Pumping Facility
Booster Facility
Potable Water Storage
Water Tower
Well / Borehole
Intake
Water Treatment Works / Chamber
Draw-off Tower
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Pressure Reducing Valve
Pressure Sustaining Valve
Non-Return Valve
Float Valve
Hydrant (Single/Double)
Washout (Single/Double)
Bulk Meter
Water Hatch Box
Pressure Tapping
Insertion Flow Meter Point

Water Chemical Injection Point
Motive Water Point
Quality Sample Point
Change In Characteristic
Marker Post
Cable Junction
Anode
Boundary Box
Stop tap
Cross Piece
Strainer
Listening Post
Revenue Meter

Housing, Building
Housing, Kiosk
Housing, Other
Pipe Support Structure
Open Pipe
Discharge
End Cap

SSSI Area
Access Right
Pre-1937 Properties

MATERIALS

AC	- ASBESTOS CEMENT
AK	- ALKATHENE
C	- CONCRETE
CI	- CAST IRON
CU	- COPPER
GF	- GLASS FIBRE
GRC	- GLASS REINFORCED CONCRETE
GRP	- GLASS REINFORCED PLASTIC
HDPE	- HIGH DENSITY POLY
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LEAD	- LEAD
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UPVC	- UNPLASTICISED PVC

LINING

BI	- BITUMEN
CL	- CEMENT
PL	- PLASTIC
RL	- RESIN
O	- OTHER

N
W E
S

SEVERN TRENT WATER

Severn Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0845 601 6616

WATER MAINS RECORD (TILE)

O/S Map scale: 1:1250

Date of issue: 29.03.19

This map is centred upon:
O / S Tile reference:

SJ7507SE

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Distribution Main
Trunk Main (local/primary)
Strategic Main
Fire Supply Main
Fire Main
Non-Domestic Customer Service Pipe
Domestic Customer Service Pipe
Abandoned Main
Elevated Main
Aqueduct
Duct
Cable, Earthing
Cable, Optical Fibre/Instrumentation
Cable, Low Voltage
Cable, High Voltage
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Pumping Facility
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Intake
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Water Isolation Valve (Closed)
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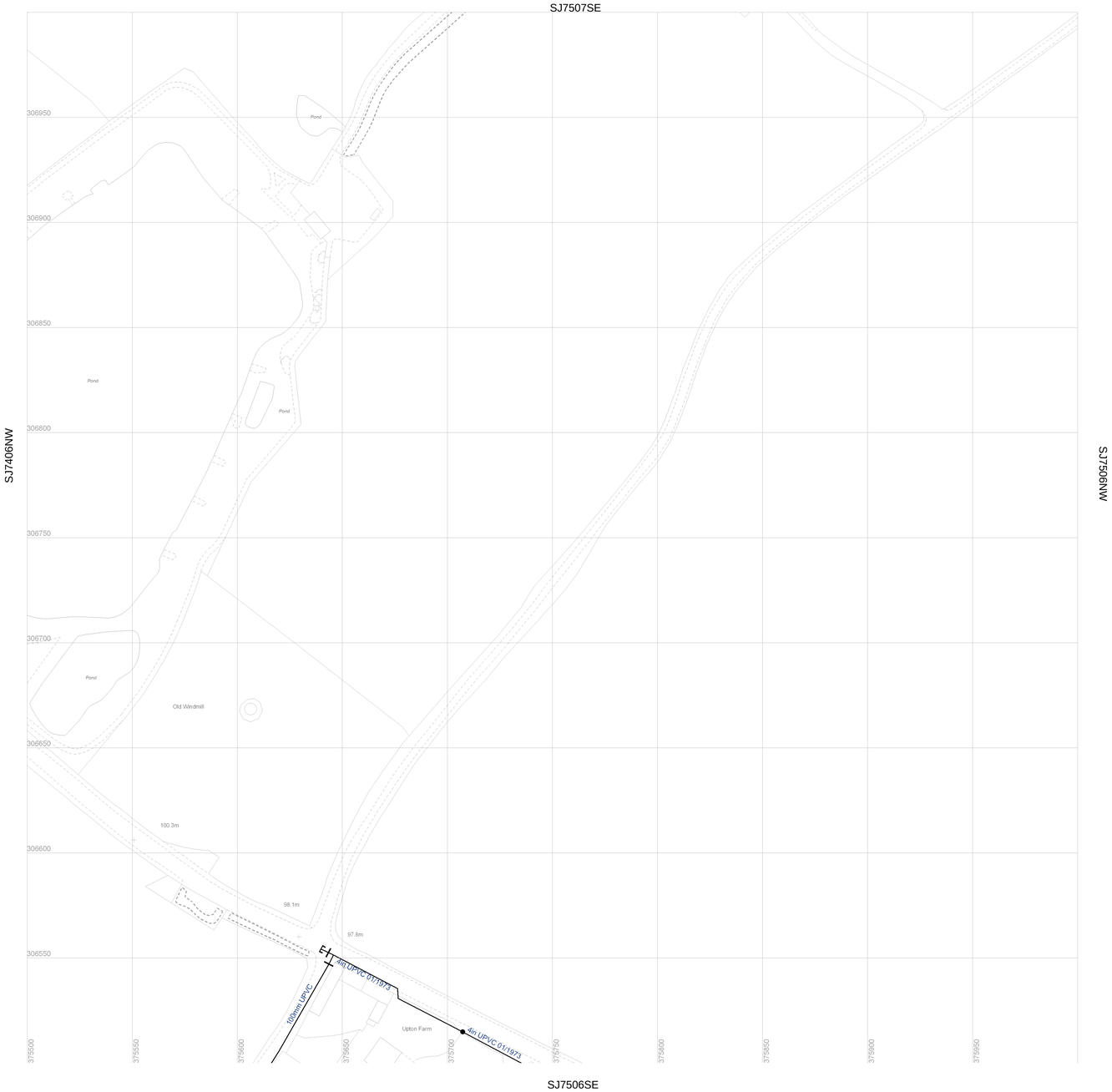

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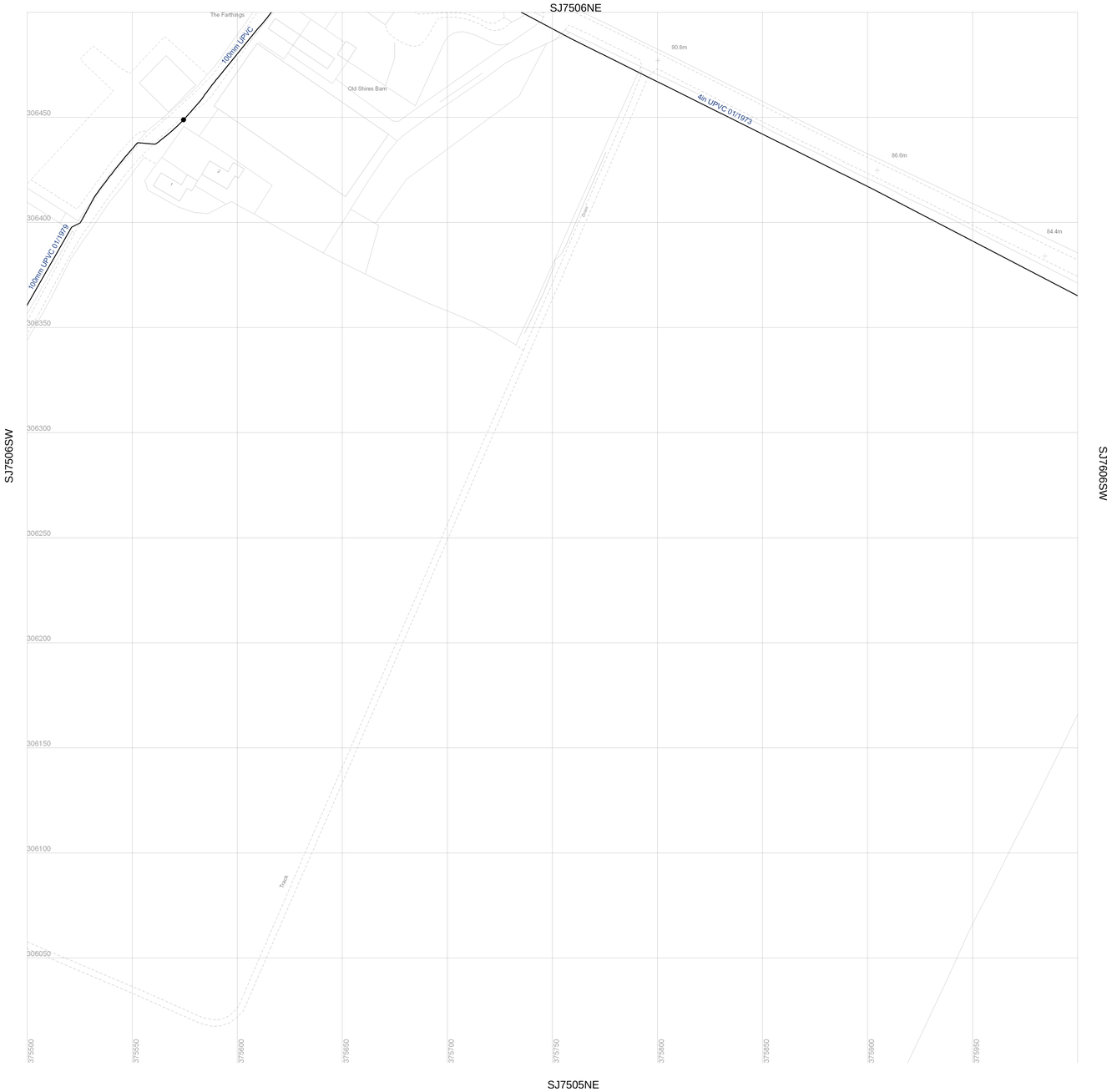

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SSSI Area
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PL	- PLASTIC
RL	- RESIN
O	- OTHER

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W E
S

SEVERN TRENT WATER

Severn Trent Water Limited
Asset Data Management
PO Box 5344
Coventry
CV3 9FT
Telephone: 0845 601 6616

WATER MAINS RECORD (TILE)

O/S Map scale: 1:1250

Date of issue: 29.03.19

This map is centred upon:
O / S Tile reference:

SJ7506SE

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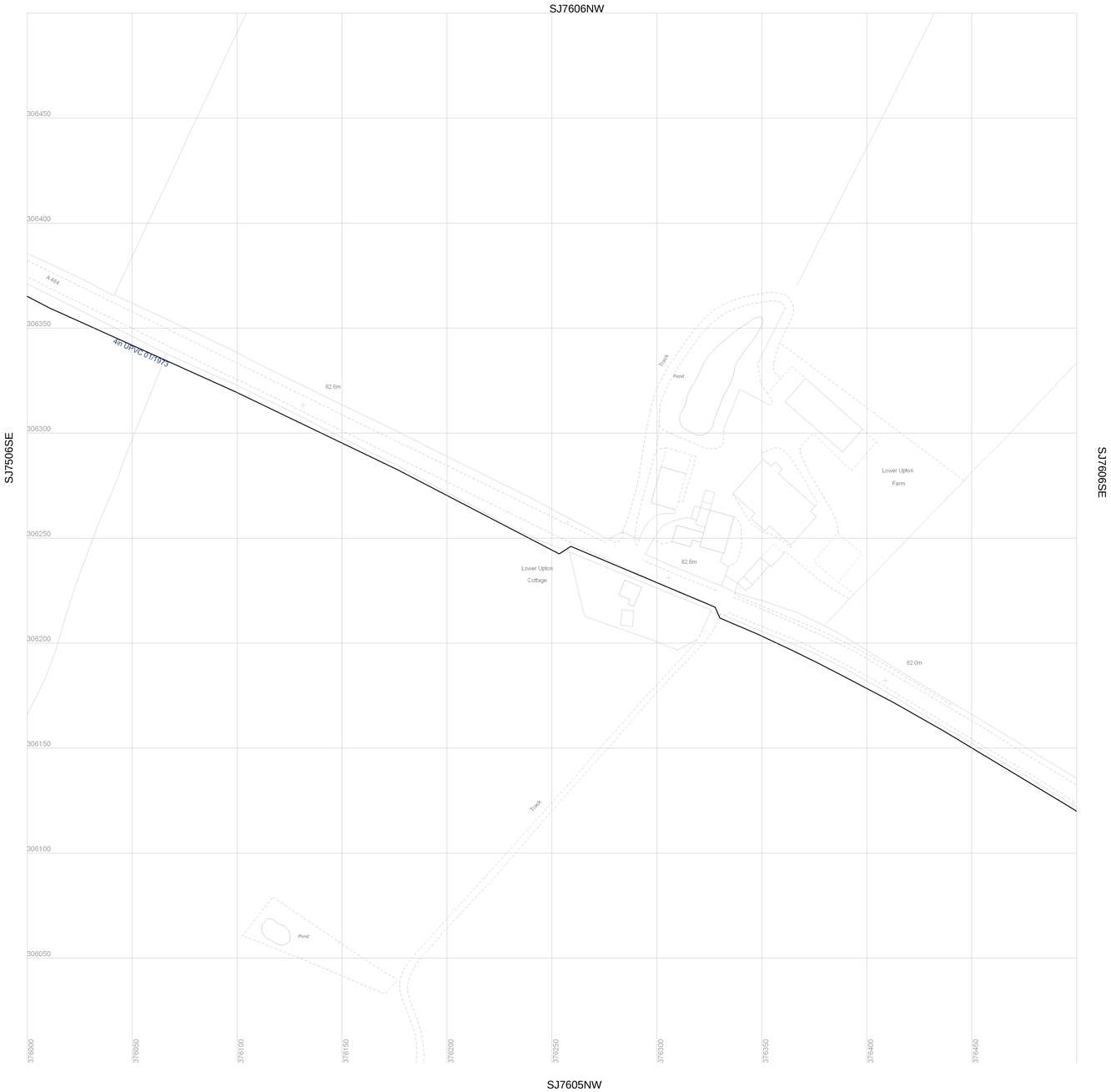

- Distribution Main
- Trunk Main (local/primary)
- Strategic Main
- Fire Supply Main
- Fire Main
- Non-Domestic Customer Service Pipe
- Domestic Customer Service Pipe
- Abandoned Main
- Elevated Main
- Aqueduct
- Duct
- Cable, Earthing
- Cable, Optical Fibre/Instrumentation
- Cable, Low Voltage
- Cable, High Voltage
- Cable, Other

- Pumping Facility
- Booster Facility
- Potable Water Storage
- Water Tower
- Well / Borehole
- Intake
- Water Treatment Works / Chamber
- Draw-off Tower
- Bowser Point
- Water Facility Connection

- Water Isolation Valve (Closed)
- Water Isolation Valve (Open)
- Water Isolation Valve (Partially Open)
- Water Air Valve
- Pressure Reducing Valve
- Pressure Sustaining Valve
- Non-Return Valve
- Float Valve
- Hydrant (Single/Double)
- Washout (Single/Double)
- Bulk Meter
- Water Hatch Box
- Pressure Tapping
- Insertion Flow Meter Point

- Water Chemical Injection Point
- Motive Water Point
- Quality Sample Point
- Change In Characteristic
- Marker Post
- Cable Junction
- Anode
- Boundary Box
- Stop tap
- Cross Piece
- Strainer
- Listening Post
- Revenue Meter

- Housing, Building
- Housing, Kiosk
- Housing, Other
- Pipe Support Structure
- Open Pipe
- Discharge
- End Cap

- SSSI Area
- Access Right
- Pre-1937 Properties

MATERIALS

AC	- ASBESTOS CEMENT
AK	- ALKATHENE
C	- CONCRETE
CI	- CAST IRON
CU	- COPPER
GF	- GLASS FIBRE
GRC	- GLASS REINFORCED CONCRETE
GRP	- GLASS REINFORCED PLASTIC
HDPE	- HIGH DENSITY POLY
HPPE	- HIGH PERFORMANCE POLY
LDPE	- LOW DENSITY POLY
LEAD	- LEAD
MDPE	- MEDIUM DENSITY POLY
O	- OTHER
PC	- PRE-STRESSED CONCRETE
PF	- PITCH FIBRE
PP	- POLY PROPYLENE
PSC	- PLASTIC STEEL COMPOSITE
PVC	- POLY VINYL CHLORIDE
RPM	- REINFORCED PLASTIC MATRIX
SI	- SPUN IRON
SST	- STAINLESS STEEL
ST	- STEEL
UPVC	- UNPLASTICISED PVC

LINING

BI	- BITUMEN
CL	- CEMENT
PL	- PLASTIC
RL	- RESIN
O	- OTHER

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