Robson Liddle

consulting engineers

JANUARY 2013 UTILITY SERVICES AVAILABILITY ASSESSEMENT REPORT

TIVERTON EAST URBAN EXTENSION DEVON

FOR WADDETON PARK



CONTENTS

1.	INTRODUCTION	. 1						
1.1	Instruction							
1.2	Objectives							
1.3	Illustrative Masterplan							
1.4	Report Layout	. 2						
1.5	Limitations							
2.0	UTILITY SOURCES	-						
_	One of the original of the ori							
2.1	Gas	٠.						
2.2	Electricity	. :						
2.3	Water Supply	. 3						
2.4	Surface Water Sewerage	. 3						
2.5	Foul Water Sewerage	. 4						
2.6	Highway Drainage							
2.7	Telecommunications	. 4						
3.0	CONCLUSIONS	į						
APPENDICES								

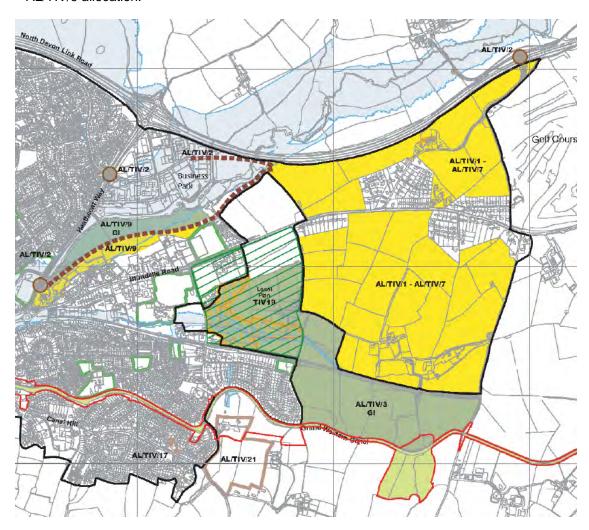
1. INTRODUCTION

1.1 Instruction

Robson Liddle Limited was commissioned by Waddeton Park to obtain copies of the existing Drainage and Utility Services for the allocation site known as Tiverton East Urban Extension. The site of 153ha is being promoted for the following:

Between 1550 and 2000 dwellings
Between 95,000 and 130,000m² of employment
1.9ha primary school site
2.0ha Shopping and community use
47ha Green infrastructure
Improved Transport links to the A361 and Heathcoat Way

The site lies east of Tiverton between the A361 North Devon Link in the north, the Grand Western Canal in the south and Hartnoll Cross in the east. The map below shows the AL/TIV/1 - AL/TIV/9 allocation:



1.2 Objectives

The objectives of the investigation were to:

 Determine points of connection on the public sewer systems and to determine the location of other utility services. This included enquiries for water, gas, electricity and British Telecom supply;

1.3 Illustrative Masterplan

To get formal responses from the utility companies in relation to potential development rates and layouts a copy of one of the suggested layouts at the Examination in Public was used to create an illustrative masterplan. Parcels for Residential, Employment, School, Open Space and Community use were allocated based on the original suggested layout. This is included as 12092-600-SK2 in Appendix A.

From this layout a development density spreadsheet based on 37.5 dwellings/ha and an employment density ratio was used to show how the development could be built over the 2013 – 2026 period. The spreadsheet is included in Appendix A.

1.4 Report Layout

Section 2 of this report provides a record of the service searches that were carried out using public record information.

1.5 Limitations

The service enquiries are based on current day map records. Further development in the Tiverton area may change the level of service available from any particular company. Similarly, this assessment has been based to a large extent on third party data acquired from service providers. This data has been taken at face value and has not been subjected to any third party validation.

Unless specifically noted to the contrary, it should be assumed that this report has not been submitted to any regulatory authorities for approval.

2.0 UTILITY SOURCES

2.1 Gas

A request was made to Wales and West Utilities for copies of their records that serve the site.

There are various service pipes in Blundells Road and roads to the north serving the existing residential area. There is an Intermediate and Low Pressure system locally.

They confirmed that they could serve approximately 50% of the overall development. Beyond this there would need to be a 30km new gas main of Medium and Intermediate pressure to reinforce the network

A copy of the gas main asset records and the final correspondence with WWU are included in Appendix B.

2.2 Electricity

A request was made to Western Power Distribution for copies of their electricity records. These records show underground and over ground cables of various voltages High and Low.

The site will require new on site substation to service the development initially at a cost of £50-£70,000 per substation and then a new primary substation costing in excess of £2m once a load of 3MVA is exceeded.

WPD have also stated they would seek to underground any existing services as part of the build out of the allocation.

A copy of the electricity asset records and the final correspondence with WPD are included in Appendix B.

2.3 Water Supply

A request was made to South West Water (SWW) for information held on their mapping system and capacity of their sewer and water mains to serve the development.

Discussions were held with SWW and they have confirmed that there is capacity to provide mains water to the proposed development for up to 535 residential units and 3.2ha of employment without the need for any offsite reinforcement works. Beyond this SWW would need to review the balance of the development provision within the allocation.

A copy of the water main asset records and the final correspondence with SWW are included in Appendix B.

2.4 Surface Water Sewerage

There are very few surface water public sewers in the area. There are several ditches, open drains, highway drainage systems and surface water conveyance features which can be used to outfall any surface water to the two main watercourses the Alsa Brook and River Lowman within the study area. A series of soakaway tests has been undertaken which shows there is some potential in the north of the study area to use soakaways with high level overflows.

There is a policy within the Tiverton EUE which requires the use of SUDS to serve the site. There are no reasons that have been found to date that would mean that SUDS could not be implemented in any part of the scheme providing they are investigated early in the master planning of any site layouts.

2.5 Foul Water Sewerage

SWW have several foul sewers in the area and have confirmed that there is capacity to accept flows from the proposed development for up to 535 residential units and 3.2ha of employment without the need for any offsite reinforcement works. Beyond this SWW would need to review the balance of the development provision within the allocation.

The Tiverton Waste Water Treatment works also has capacity to accept the whole development without further investigation or improvement works being undertaken.

A copy of the public sewer records and the final correspondence with SWW are included in Appendix B.

2.6 Highway Drainage

An enquiry has been submitted to DCC Highways to obtain copies of their highway drainage records, to date we have not had a response. Copies of the A361 North Devon Link Road drainage to the north have been obtained from the maintenance team at South Molton which show the locations of cut off ditches and culverts which currently convey surface water runoff from south to north toward the River Lowman. These drawings are too poor to reproduce in this report but will be used in developing the surface water drainage strategy for any development parcels that come forward north of Blundells Road.

In the future DCC will adopt highway drainage such as gully connections serving the access roads and will enter into an agreement with SWW to convey the highway drainage to a suitable outfall on a watercourse.

2.7 Telecommunications

A request was made to British Telecommunications for copies of their records.

These records show various overhead and underground cables within the study area and no capacity issues serving the new development have been identified based on the various locations of this plant.

A copy of the BT service records is included in Appendix B.

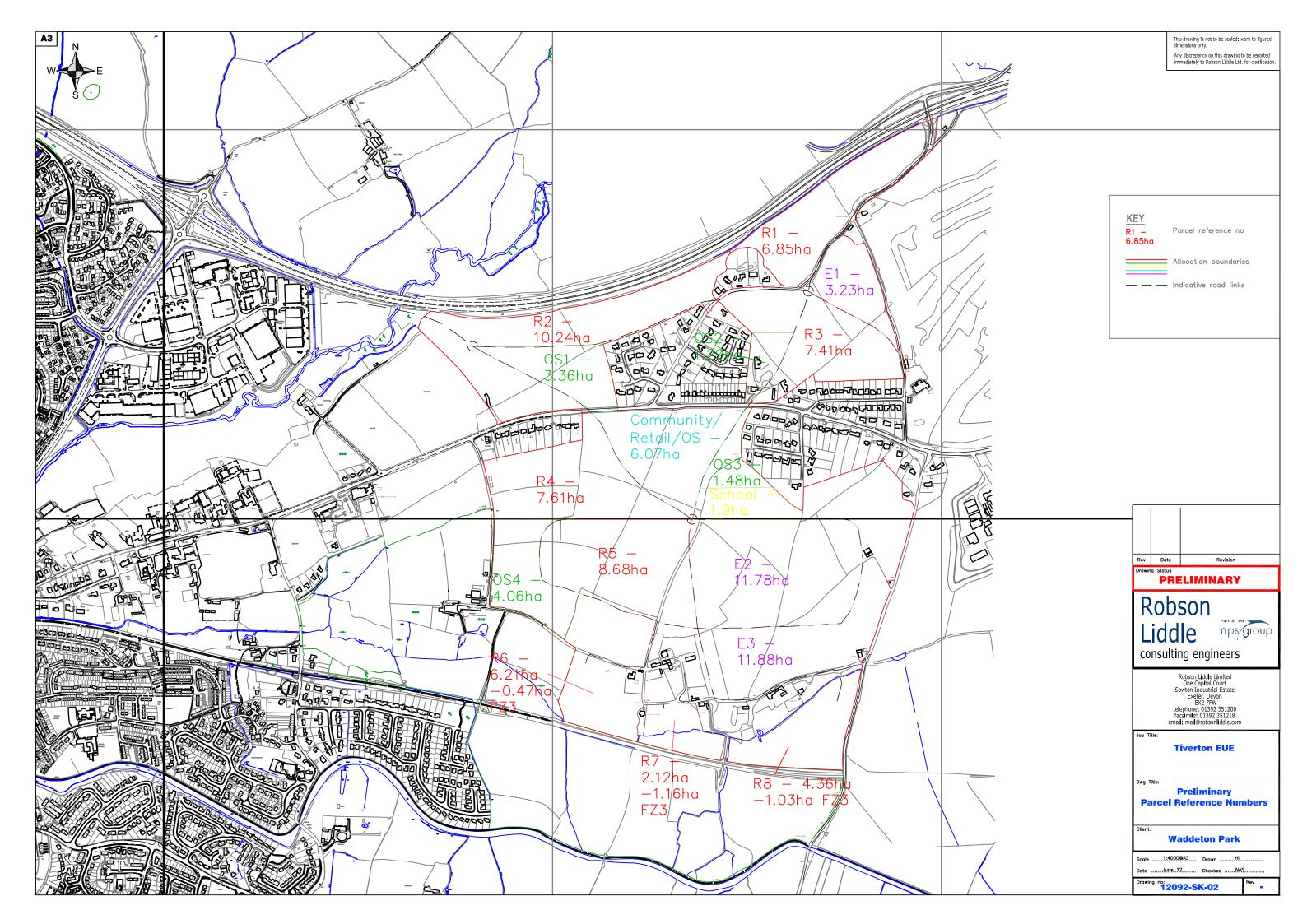
3.0 CONCLUSIONS

Following receipt of all of the services plans and assessment of the required utility service extensions to feed the site there are some off site connections required associated with connecting gas and electricity supplies once the development reaches 50% of the total build out.

South West Water will need to look at their ability to serve the development at approximately 25% of the total build out.

All other utility services, surface water outfalls and telephone exist within or immediately adjacent to the site boundary.





TIVERTON EAST URBAN EXTENSION June 2012

Development Density														
AL/TIV/1 - 7	Min	Max	Av								Based on	Total areas		
											Housing denisty	50.82	37.5	dwelling / ha
Residential allocation (No)	1550	2000	1775		Av Build rate	2013-2016	150	per yea	er year		Employment	26.89		m² / ha
Employment allocation (m ²)	95000	130000	112500		Av Build rate	2013-2017	1.5	ha / pei	ryear		School	1.90		Pupils
											Retail / Community	0.00	2.00	ha
Parcel	Build period	Gross area	No Dwellings	Employment		Community	Commercial	School	Open Space	Flood Zones				
	years	ha		ha	m²		ha	ha	ha	ha				
R1	2013-2015	6.85	257											
R2	2016-2018	10.24	384											
R3	2013-2015	7.41	278											
R4	2018-2020	7.61	285											
R5	2020-2022	8.68	326											
R6	2022-2024	5.74	215							0.47				
R7	2025-2026	0.96	36							1.16				
R8	2024-2026	3.33	125							1.03				
E1	2013-2015			3.23	11305									
E2	2015-2026			11.78	41230									
E3	2020-2026			11.88	41580									
Community	2015-2016					1.75			4.07					
Retail	2015-2016						0.25							
School	2015-2016							1.90						
OS1	2016-2018								3.36					
OS2	2013-2014								1.29					
OS3									1.48					
OS4									4.06					
Totals		50.82	1906	26.89	94115	1.75	0.25	1.90	14.26	2.66				

APPENDICES

- **Utility Company Records**
 - (i)

 - Gas Electricity South West Water British Telecom (ii) (iii) (iv)





Mr Nigel Smith
Robson Liddle Ltd
Venture House
One Capital Court
Sowton Industrial Estate
Exeter
Devon
EX2 7FW

Wales & West House Spooner Close Celtic Springs Coedkernew Newport NP10 8FZ Tŷ Wales & West Spooner Close Celtic Springs Coedcernyw Casnewydd NP10 8FZ

T. 029 2027 8500 F. 0870 1450076 www.wwutilities.co.uk

22nd August 2012

Dear Mr Smith

RE: Proposed Development @ Blundells Road, Tiverton, EX16 4NB.

WWU Ref: 35011101

Thank you for giving us the opportunity to be involved in the consultation of the Blundells Road Development proposals.

Having looked at the site plans available there appears to be two gas mains running through the site, one operating at Low Pressure (LP) and the other at Intermediate Pressure (IP).

Based on the gas loadings provided (peak demand of 5705scmh), WWU have carried out an analysis for feeding the development from the IP network. Unfortunately, it does not appear that the network is sufficiently sized as this triggers large amounts of specific reinforcement.

In order to maintain minimum operating pressures feeding our Medium Pressure (MP) network, the IP network must maintain a minimum pressure of 3500mbar. To facilitate this, 30,000m x 630mm of specific reinforcement would be required.

In addition to this, the demand would also have a detrimental effect on our High Pressure (HP) network, where the pressures would also drop 1500mbar below the minimum required. Again, large amounts of specific reinforcement would be required to guarantee these pressures.

In summary, the existing mains network is not sufficiently sized to feed a development of this nature. It is recommended that the development's gas demands are re-evaluated or alternative locations for the development are sought.

If you require any further information, please do not hesitate to contact the writer,

Yours Sincerely

Michael Vagg Senior Technical Assistant Tel: 02920 278 829

24 hour gas escape number Rhif 24 awr os bydd nwy yn gollwng

0800 111 999*

Smith, Nigel

From: Michael Vagg [michael.vagg@wwutilities.co.uk]

Sent: 12 September 2012 15:17

To: Smith, Nigel

Subject: WWU In 2012 09 12 - 35011101: Development Tiverton without reinforcement

Good Afternoon Nigel,

Apologies for the delay in responding.

I've discussed the job with our analysis team and I'm afraid the answer is slightly vague – the load would need to be reduced by approximately 50% before the network could support the development.

I hope that this is sufficient but please let me know if you require any further information,

Thanks,

Mike

Michael Vagg

Senior Technical Assistant Wales and West Utilities

Wales & West House Spooner Close Celtic Springs Coedkernew Newport NP10 8FZ

Tel: 02920 278 829 Fax: 08700 600 238

Email: michael.vagg@wwutilities.co.uk

From: Smith, Nigel [mailto:NigelSmith@robsonliddle.com]

Sent: 22 August 2012 13:46

To: Michael Vagg

Subject: WWU 2012 08 22 - 35011101: Development Tiverton far without reinforcement

Mike

And assuming just local LP or service supply pipes are laid.

1) How many residential units could you supply without any network reinforcement?

or

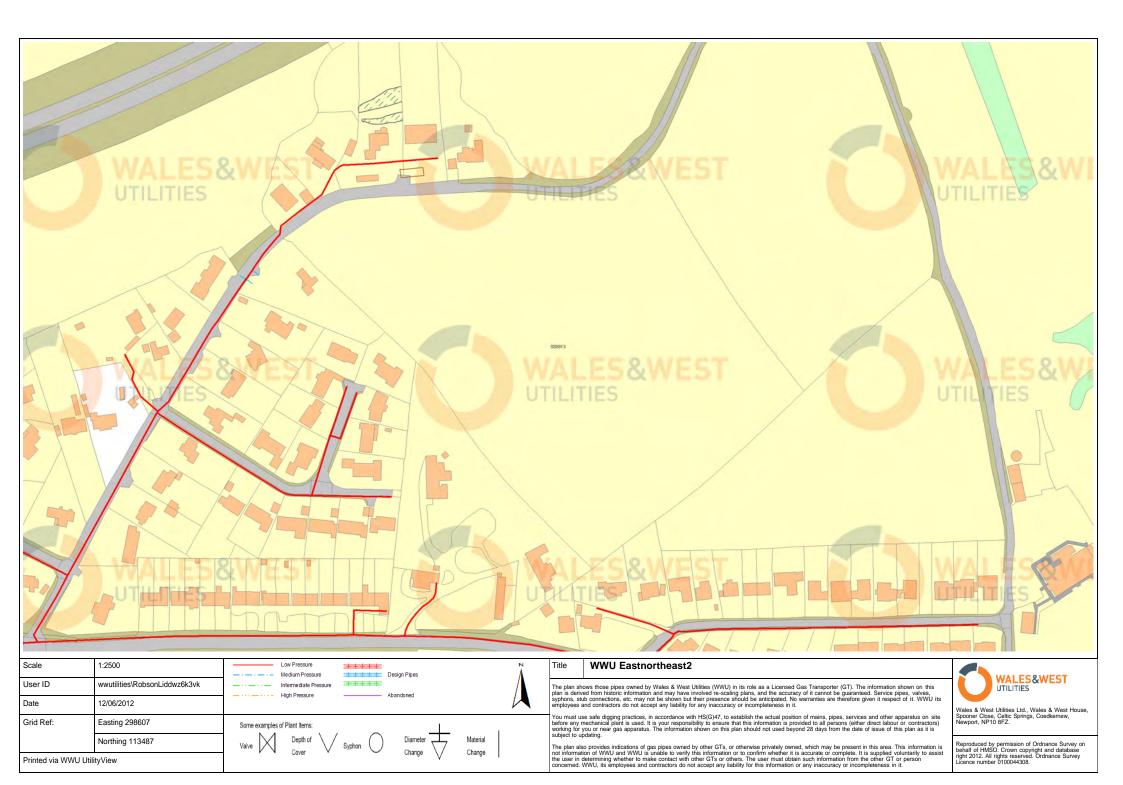
2) Up to what build year could you deliver (housing & employment) without any network reinforcement?

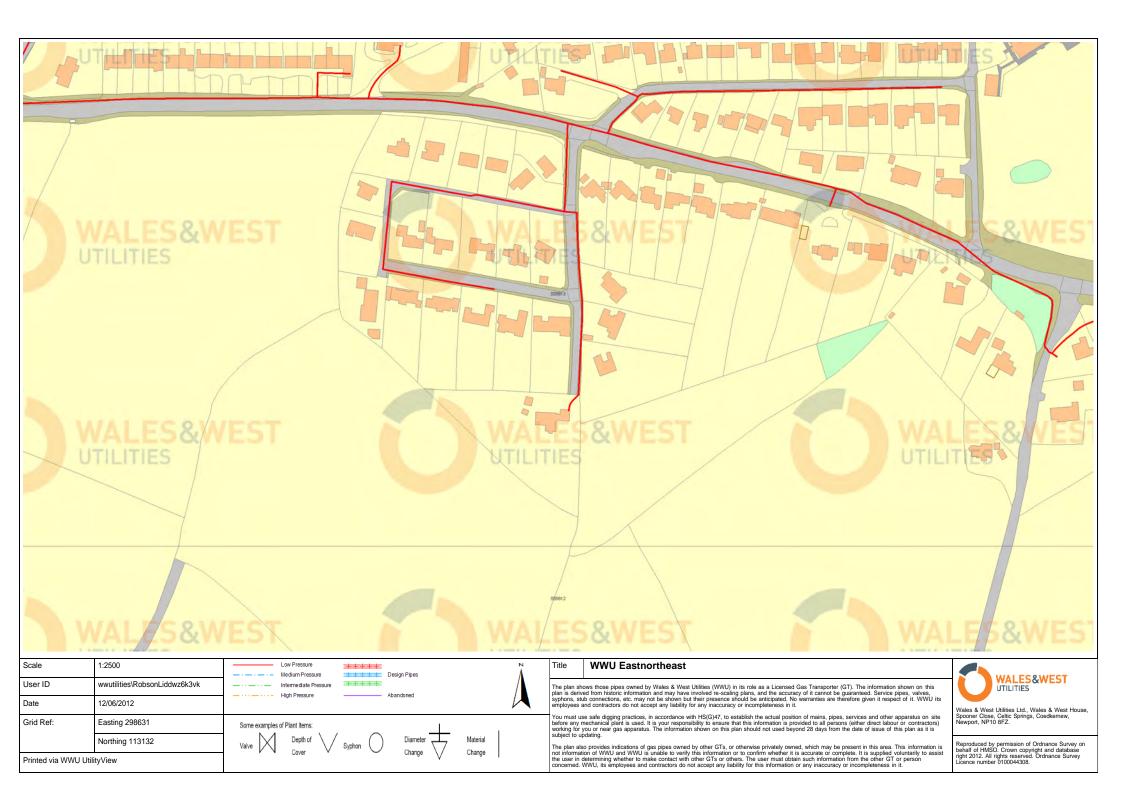
MDDC as the local authority are going to ask all these questions so you might as well cover all eventualities!

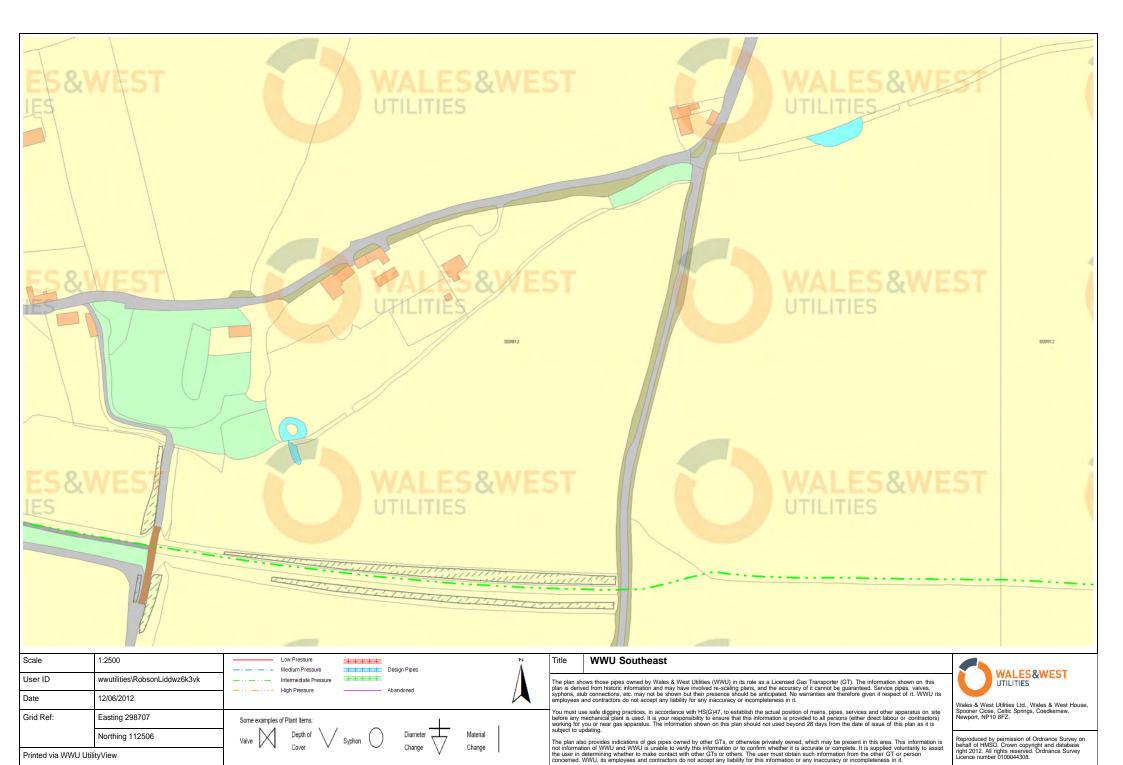
Regards Nigel

Please note change of address below

Nigel Smith
Principal Infrastructure Engineer
One Capital Court
Sowton Industrial Estate
Exeter
EX2 7FW

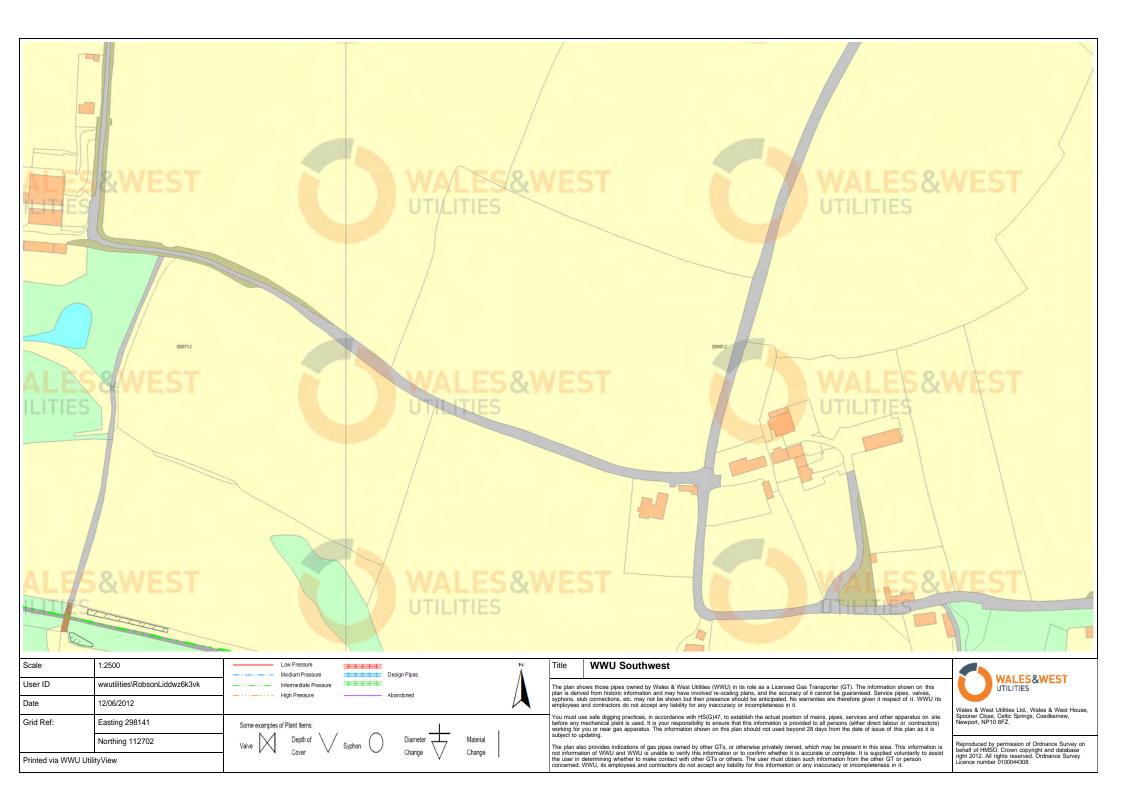


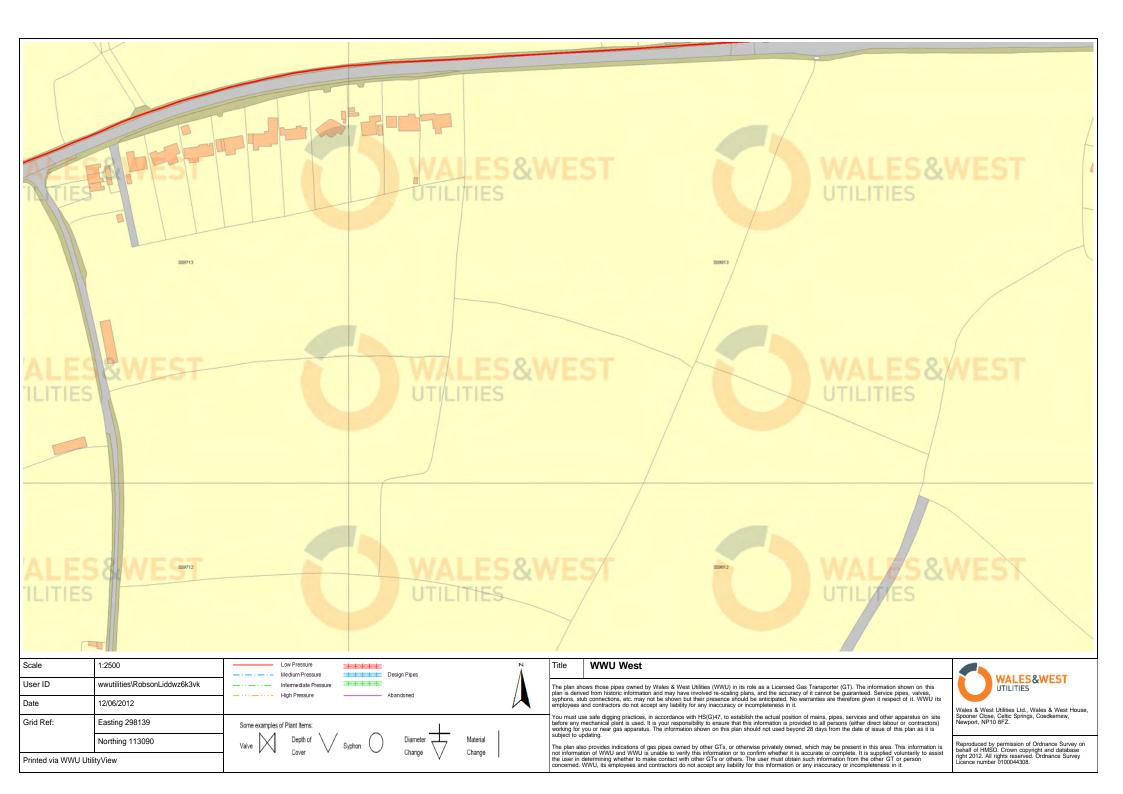


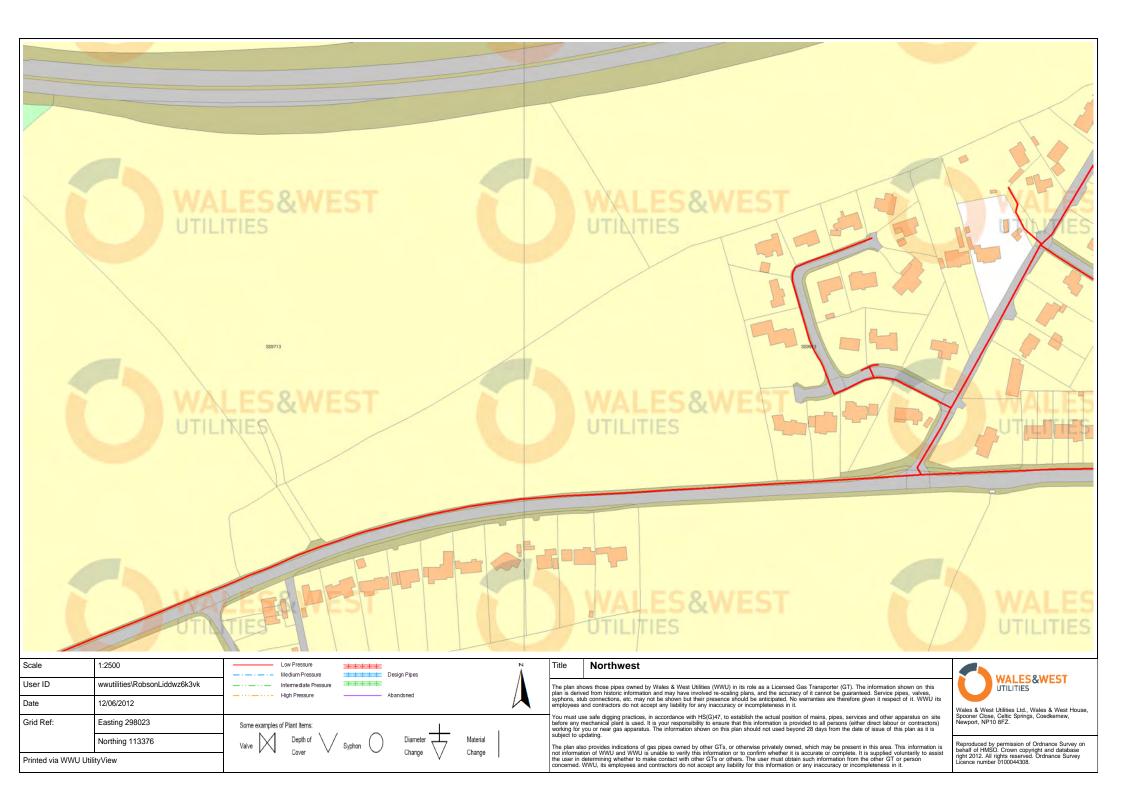


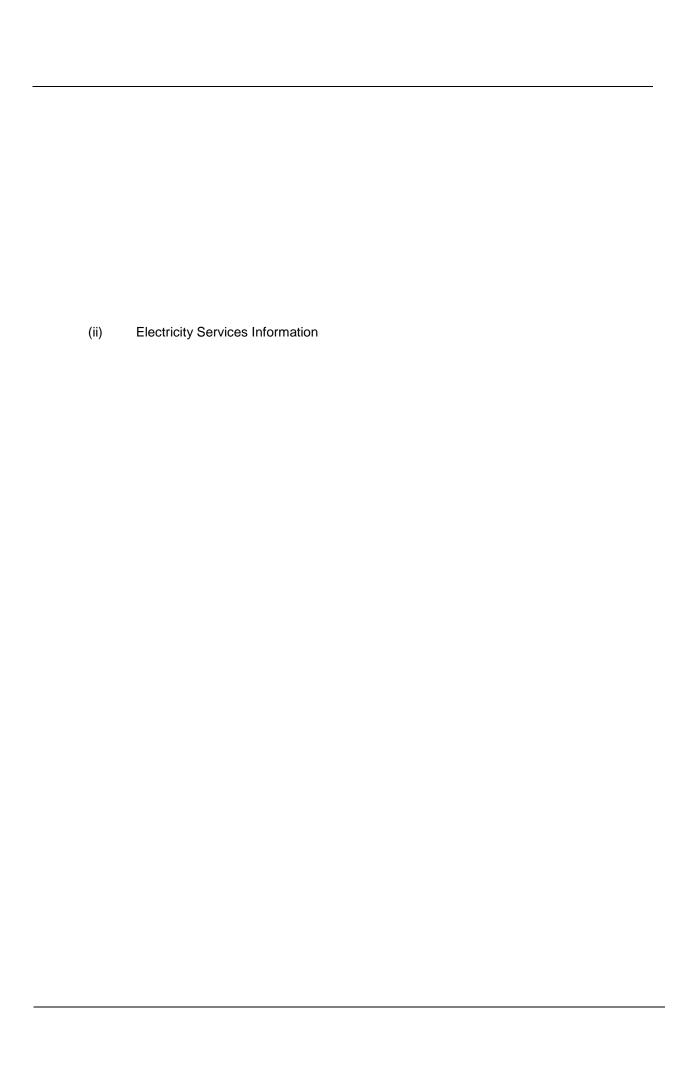
Change

Printed via WWU UtilityView









Smith, Nigel

From: Allen, Dave J. [dallen@westernpower.co.uk]

Sent: 21 December 2012 08:48

To: Smith, Nigel

Subject: WPD In 2012 12 21 Tiverton Area Feasibility Study

Nigel,

I chased Clive on Wednesday and he has now replied with some indicative information which hopefully will be adequate for your immediate requirements.

As I mentioned when we spoke, we do have some 'spare' capacity on the existing 11kV system. By extending the network from the Lower Moor Industrial Estate we could provide up to around 3.0 MVA capacity to the area you are interested in. A very rough estimate of the cost to do this is £140,000 plus V.A.T. This price is only to bring the cables to site, not to provide substations or supplies to buildings. As a guide you would also need to add approx. £50-70,000 per substation for providing on-site supplies.

Once demand on the site exceeds the 3.0 MVA the situation changes. There is limited additional capacity (approx. 2.0 MVA) on the primary substation which feeds the Lower Moor area beyond the 3.0 MVA, but to there is no further capacity in the circuits themselves. We could look at bringing new circuits from the primary to site (the primary is approx. 2km west of the site as the crow flies) but this is likely to be expensive and logistically difficult to achieve. It would also only be a stop-gap solution because, once demand goes above the total of 5.0 MVA which the works mentioned above would provide we would need to establish a new primary substation on the development site and any new circuits installed would become redundant.

It would therefore seem more cost-effective to consider building the new primary substation as the second step once load on site starts to approach the 3.0 MVA mark. The budget cost of providing a new primary is between £2,200,000 and £2,900,000 plus V.A.T. depending on the amount of 33kV overhead line required (which will be determined by the chosen site). There would also be the cost of installing 11kV infrastructure on the site - this will be dependent on site layout. Also further 11kV substations would be required at the costs indicated above.

A primary substation requires an area of land 40m square with good vehicular access (suitable for low-loader lorries etc.) Plant lead times for this type of equipment generally run to around 18 months, so you should work to a lead time of about two years from instigation to completion.

In addition to the above there will no doubt be costs for diversion of existing plant. The site is crossed by several 11kV overhead circuits. It would be our intention to underground these along proposed site roads, but until a full layout is available it is not possible to provide proposed routes or costs.

I trust this information is of use, but if you have any questions please feel free to contact me. Once again, apologies for the time taken to provide a response to your enquiry.

Regards,

Dave Allen



dallen@westernpower.co.uk



01392 352729



01392 352574

From: Smith, Nigel [mailto:NigelSmith@robsonliddle.com]

Sent: 19 December 2012 10:20

To: Allen, Dave J.

Subject: RE: WPD 2012 06 28 Tiverton Area Feasibility Study

Dave

Still not had anything back from you on this and MDDC are getting stroppy about the lack of response from us on services.

Please can you sort this week.

Thanks Nigel

Please note change of address below

Nigel Smith

Principal Infrastructure Engineer

Robson Liddle Ltd
One Capital Court
Sowton Industrial Estate
Exeter
EX2 7FW
http://www.robsonliddle.com

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Please be aware that emails may have to be disclosed under the Freedom of Information Act 2000

From: Smith, Nigel Sent: 28 June 2012 16:43

To: 'Allen, Dave J.'

Subject: WPD 2012 06 28 Tiverton Area Feasibility Study

Dave

Further to you e-mail.

This is a feasibility study at present so no detailed parcel layouts are available.

We have a preliminary Masterplan with each parcel based on ownership, end use and phasing together with densities for each parcel.

Attached are our drawing 12092-600-sk02 which sows each of the 8 residential areas, 3 employment areas and 3 other uses, school, retail & community.

We have calculated out each parcel / per build year and given you a kVA for each year in the attached spreadsheet extract (& enclosed spreadsheet if you need to extract / manipulate data).

As some different parcels are likely to be developed in parallel you may wish to split out the kVA loads.

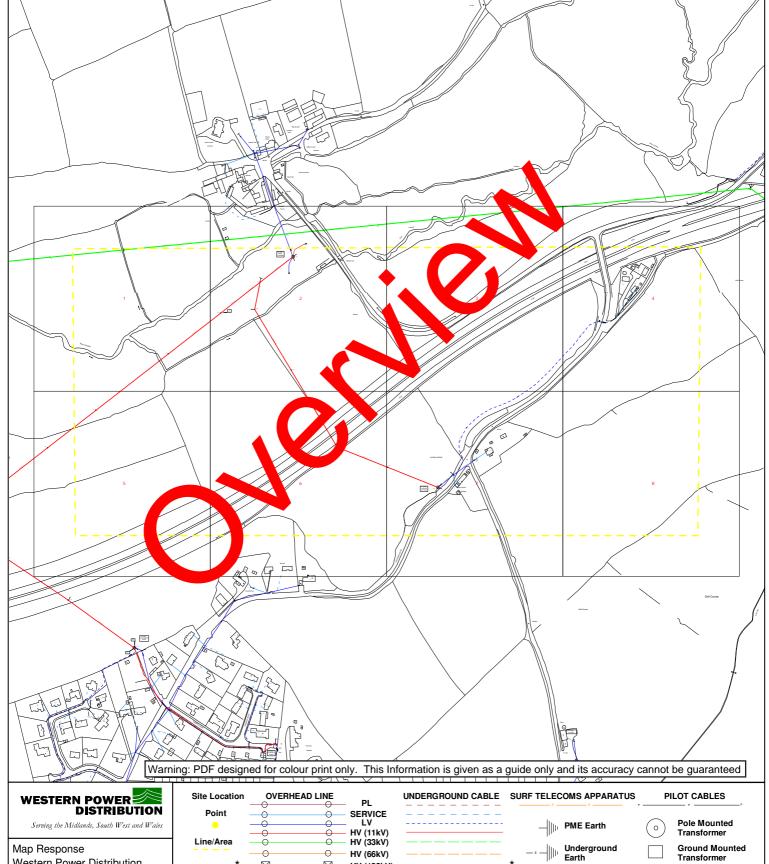
We are seeking information on:

- 1) what loads can your existing network take without any reinforcement improvements, just new cable supply number of houses or employment (no heavy users assumed at present).
- 2) Then a budget cost to lay into each parcel based on the phasing identified. The cost of laying within each parcel is presumed to be a normal cost.
- 3) No of substations or per/no of houses / employment provision.

If you want to clarify anything then please let me know or I am happy to meet up if it helps.

Regards

Nigel



Western Power Distribution Toll End Road Tipton DY4 0HH Phone 0121 623 9780

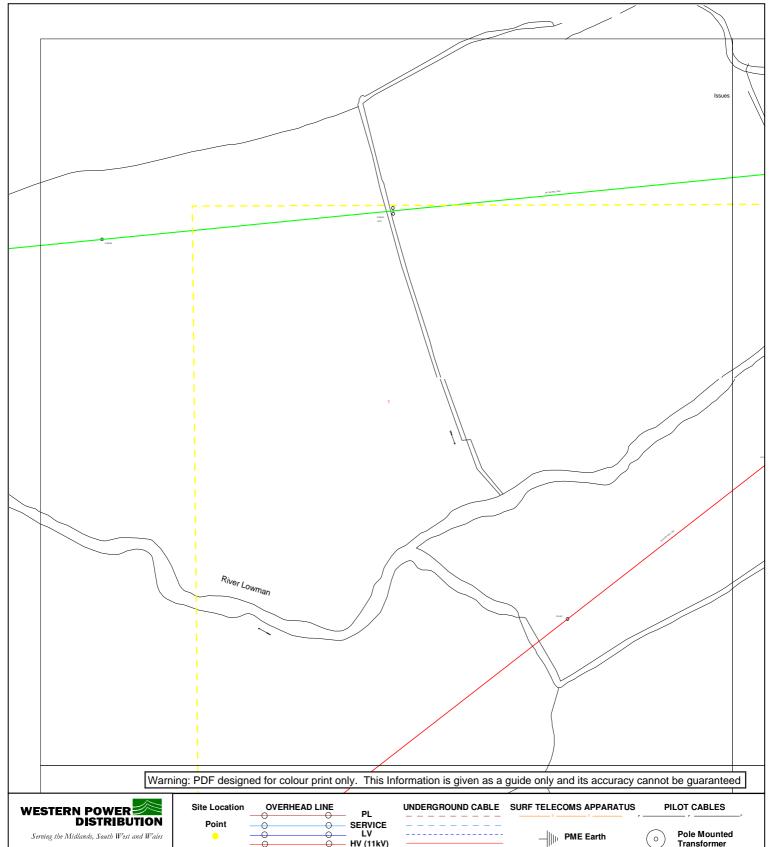
Date Requested: 15/01/2013 Job Reference: 507039 Site Location: 298658 113867 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

HV (132kV)

Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines - 0800 096 3080

IMPORTANT NOTICES

- These plans are provided as a general guide only. 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 but
- 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 0845 601 2989.
- Report damage to 0800 365 900 immediately KEEP EVERYONE AWAY FROM THE AREA



Map Response Western Power Distribution Toll End Road Tipton DY4 0HH Phone 0121 623 9780

Date Requested: 15/01/2013 Job Reference: 507039 Site Location: 298658 113867 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

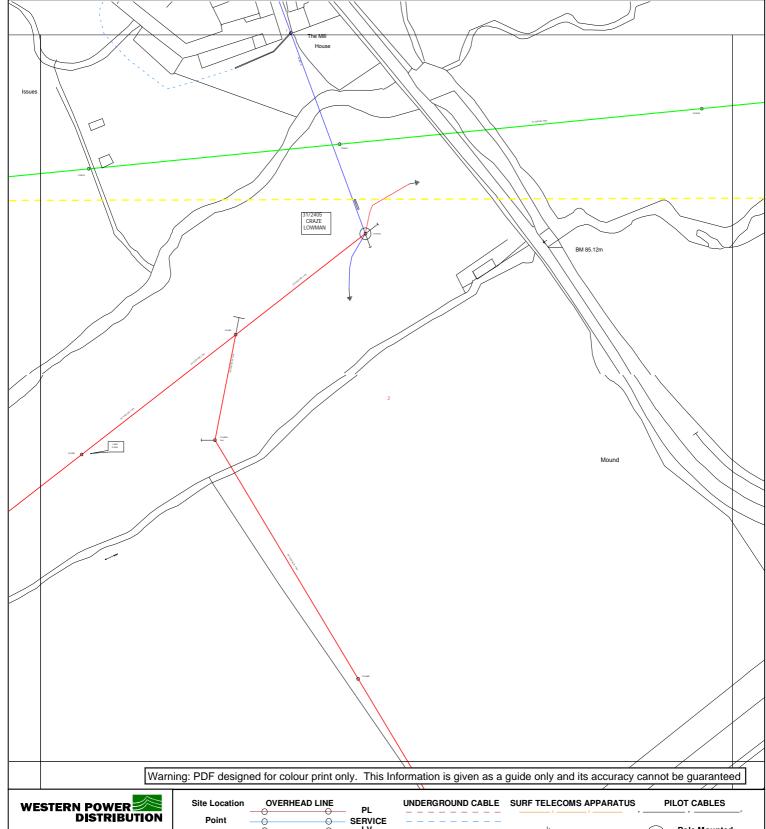
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site

HV (11kV) Transforme Line/Area HV (33kV) **Ground Mounted** Underground HV (66kV) HV (132kV)

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Serving the Midlands, South West and Wales

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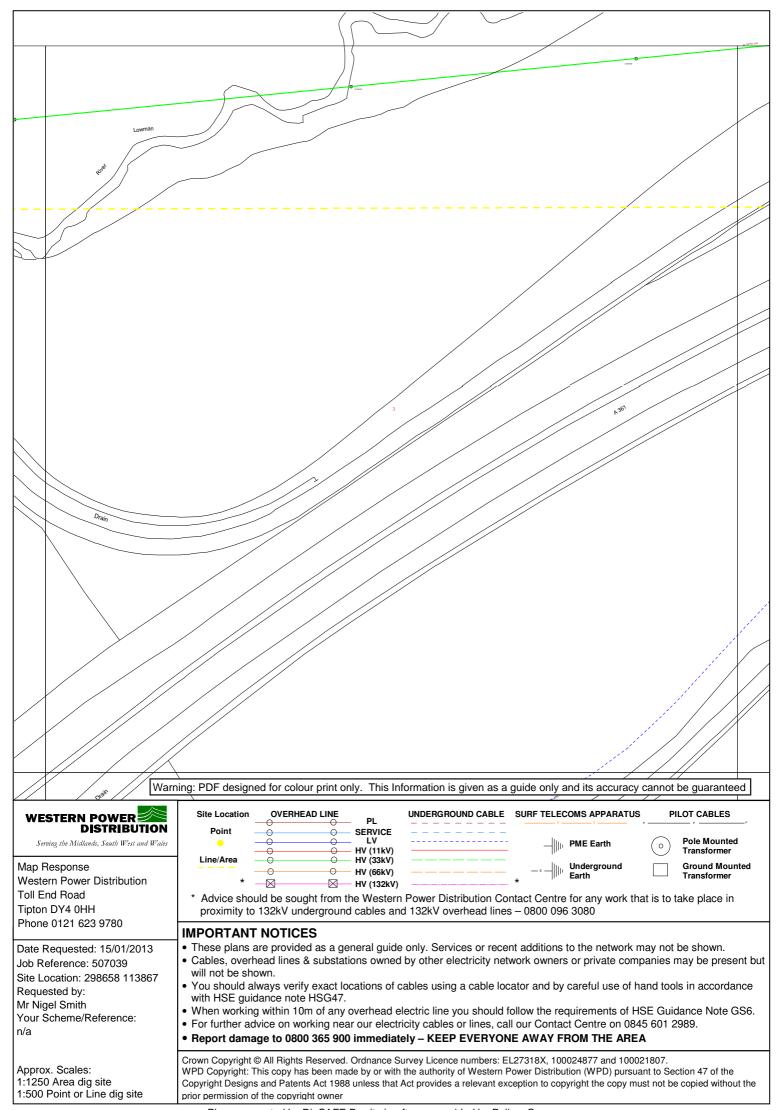
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site

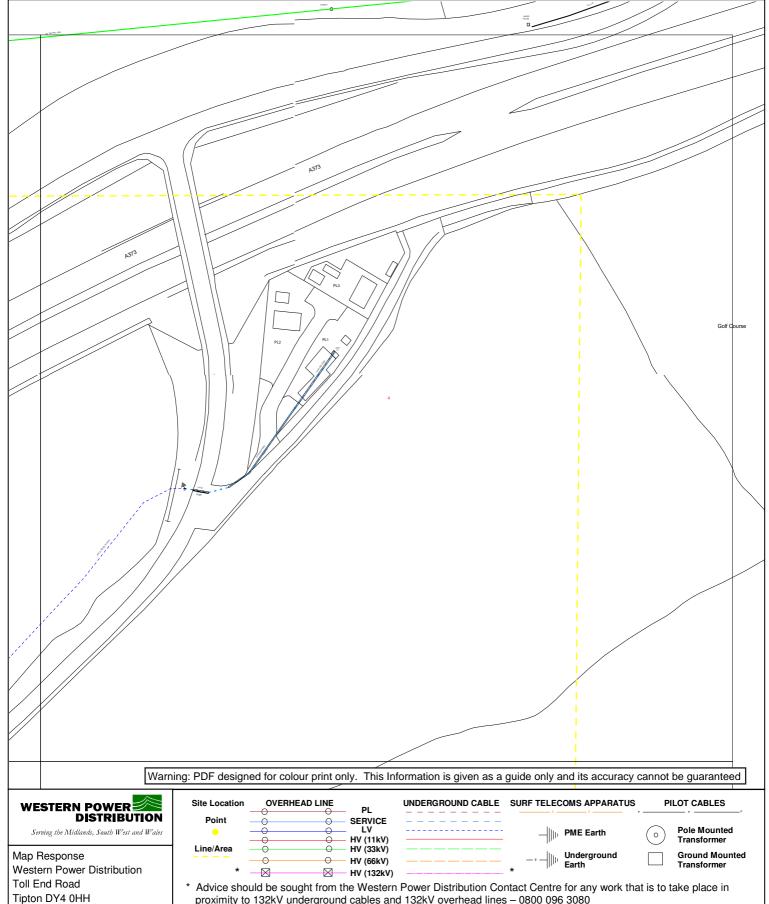
Pole Mounted PME Earth HV (11kV) Transforme Line/Area HV (33kV) **Ground Mounted** Underground HV (66kV) HV (132kV)

Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines - 0800 096 3080

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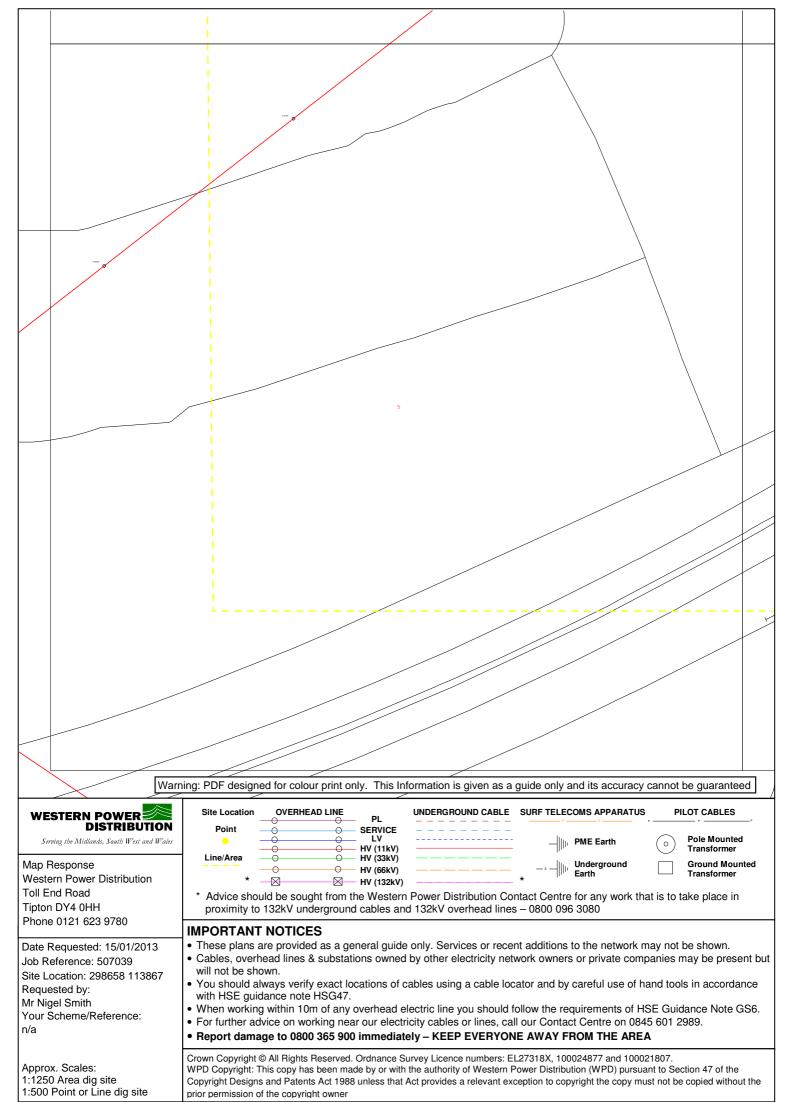
Phone 0121 623 9780

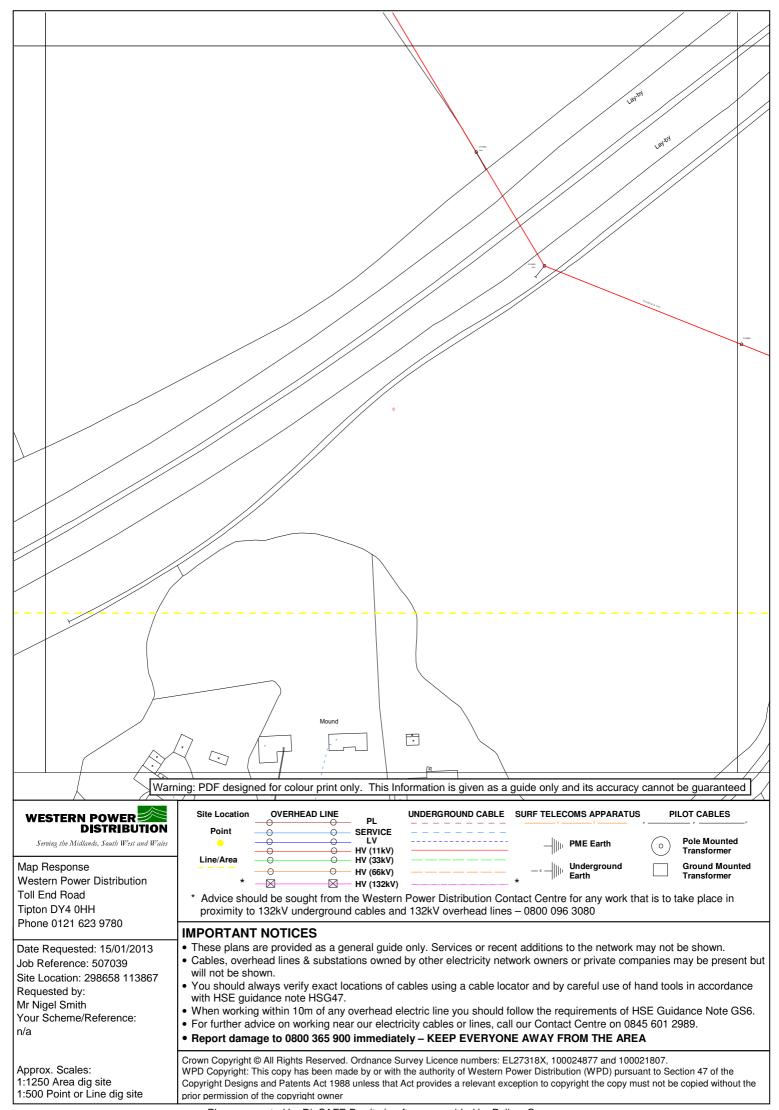
Date Requested: 15/01/2013 Job Reference: 507039 Site Location: 298658 113867 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

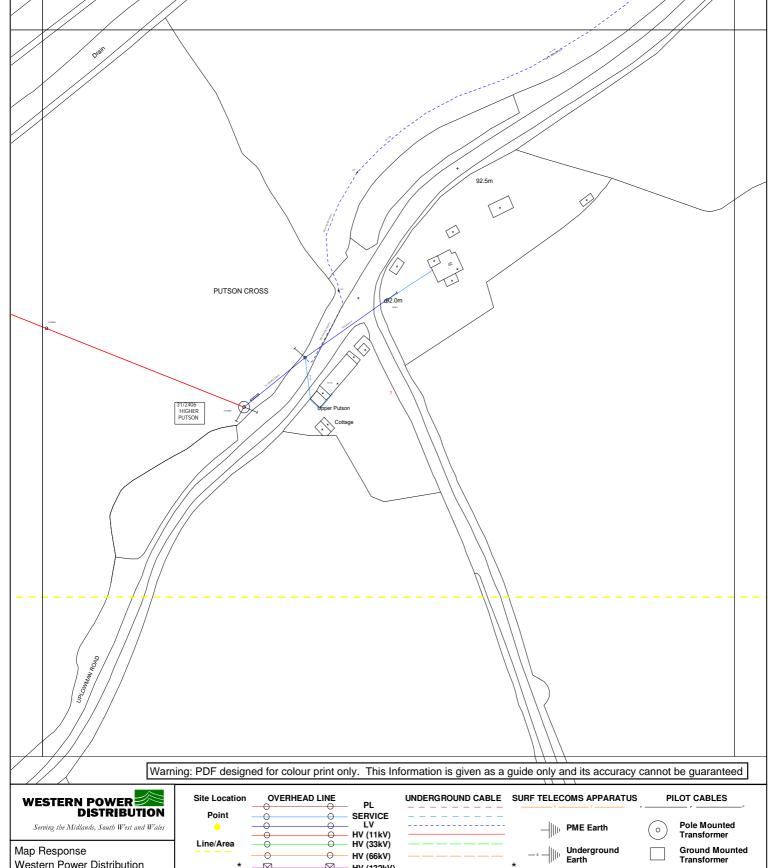
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site proximity to 132kV underground cables and 132kV overhead lines - 0800 096 3080

IMPORTANT NOTICES

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Western Power Distribution Toll End Road Tipton DY4 0HH Phone 0121 623 9780

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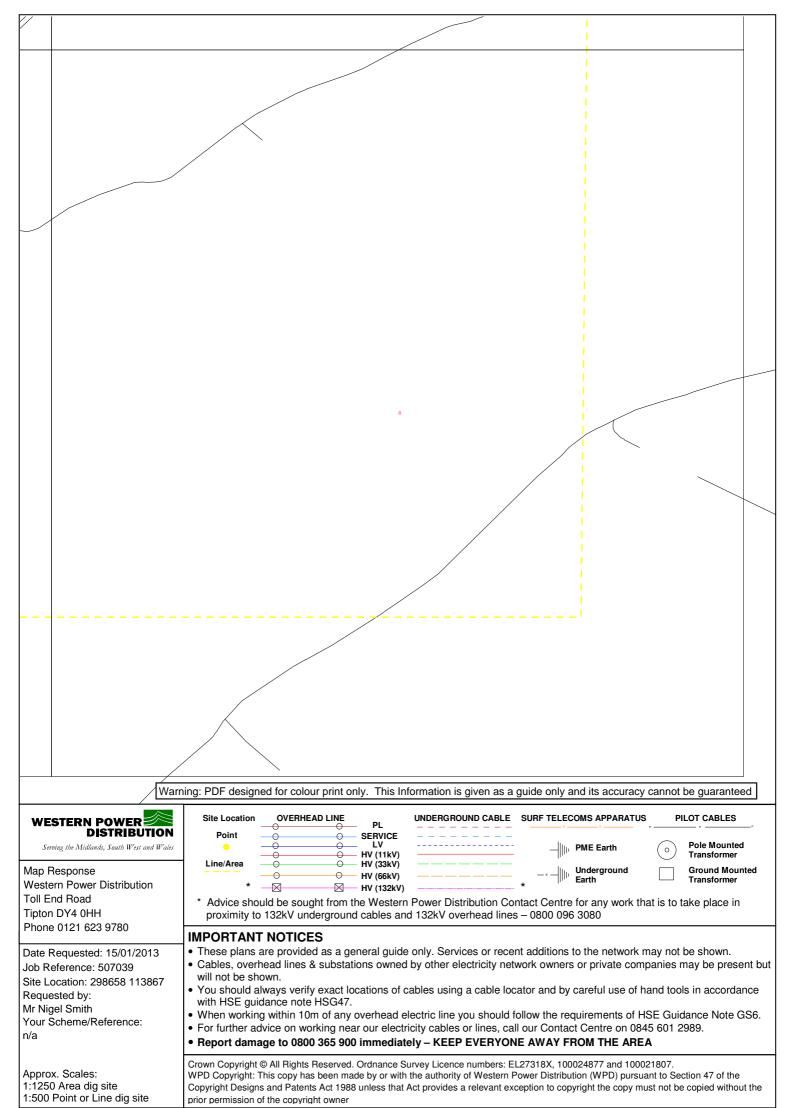
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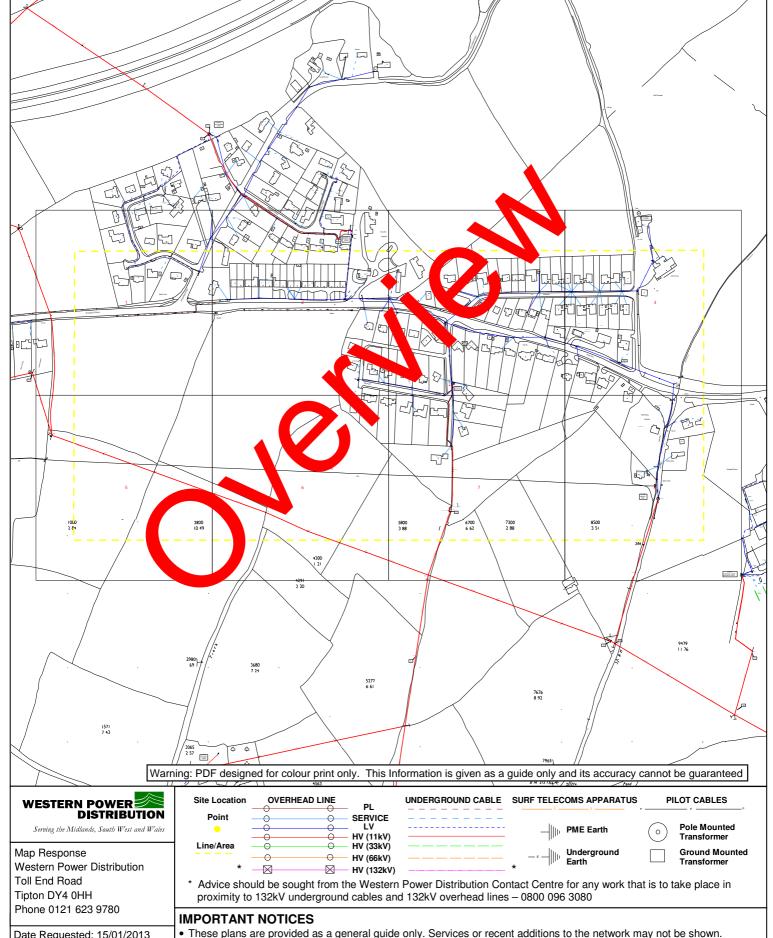
HV (132kV)

Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines - 0800 096 3080

IMPORTANT NOTICES

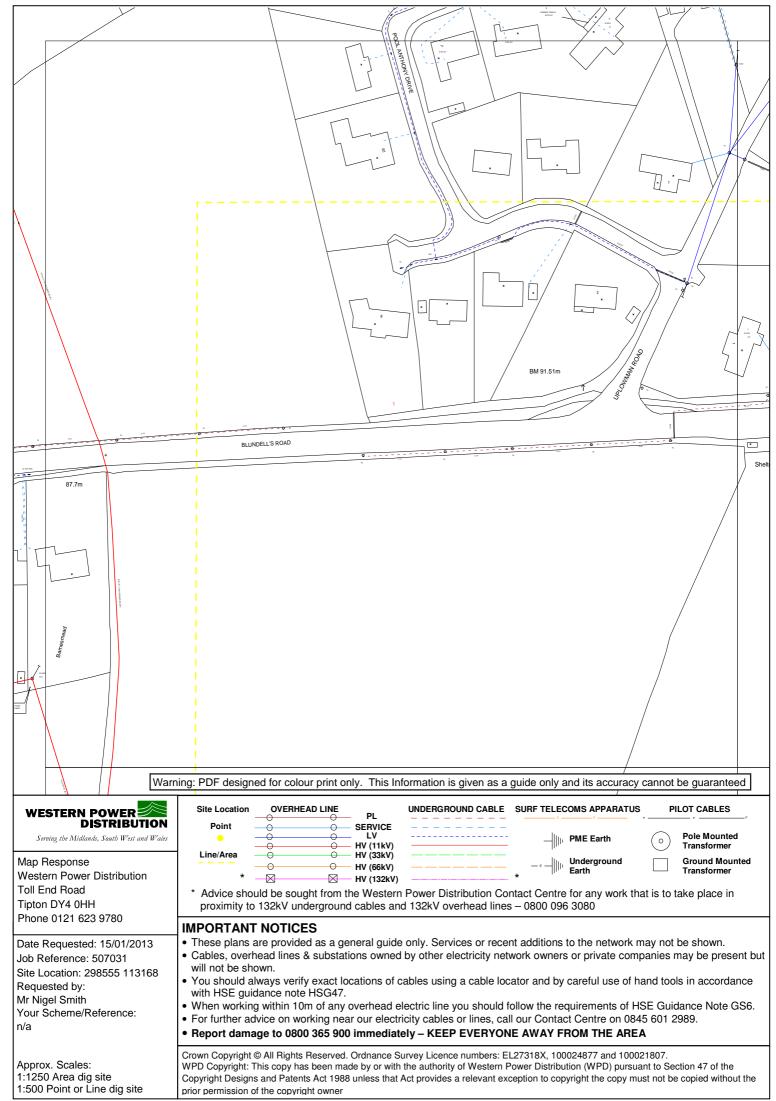
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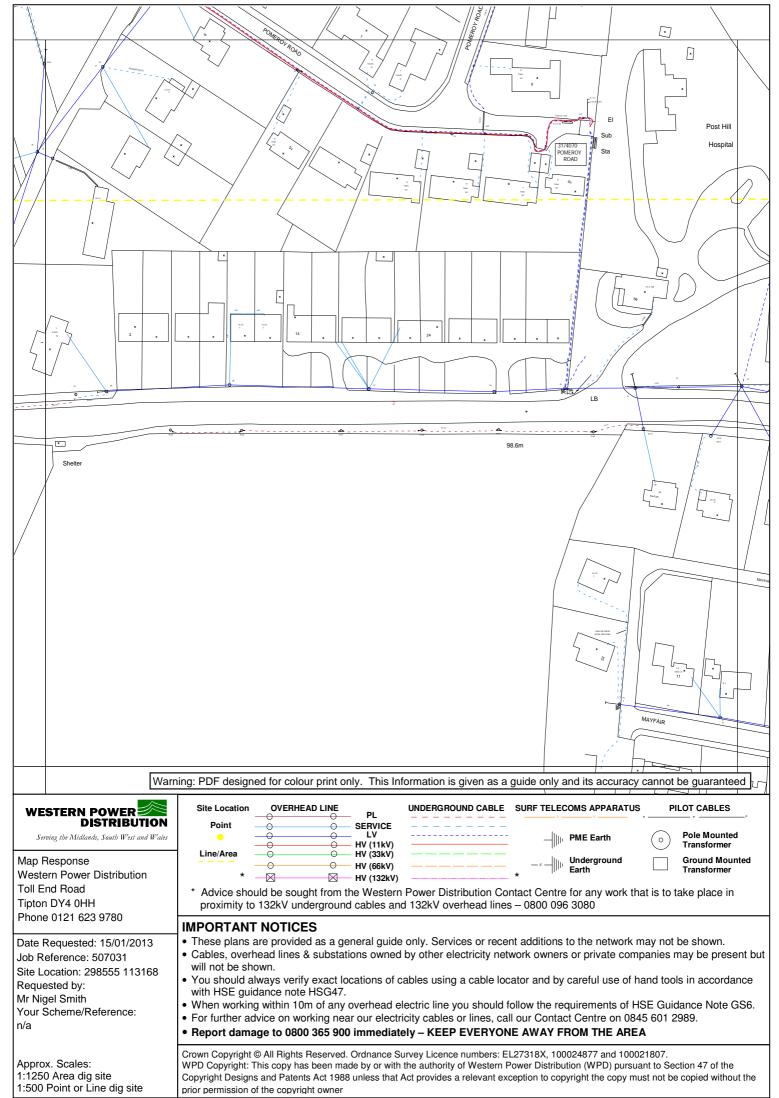


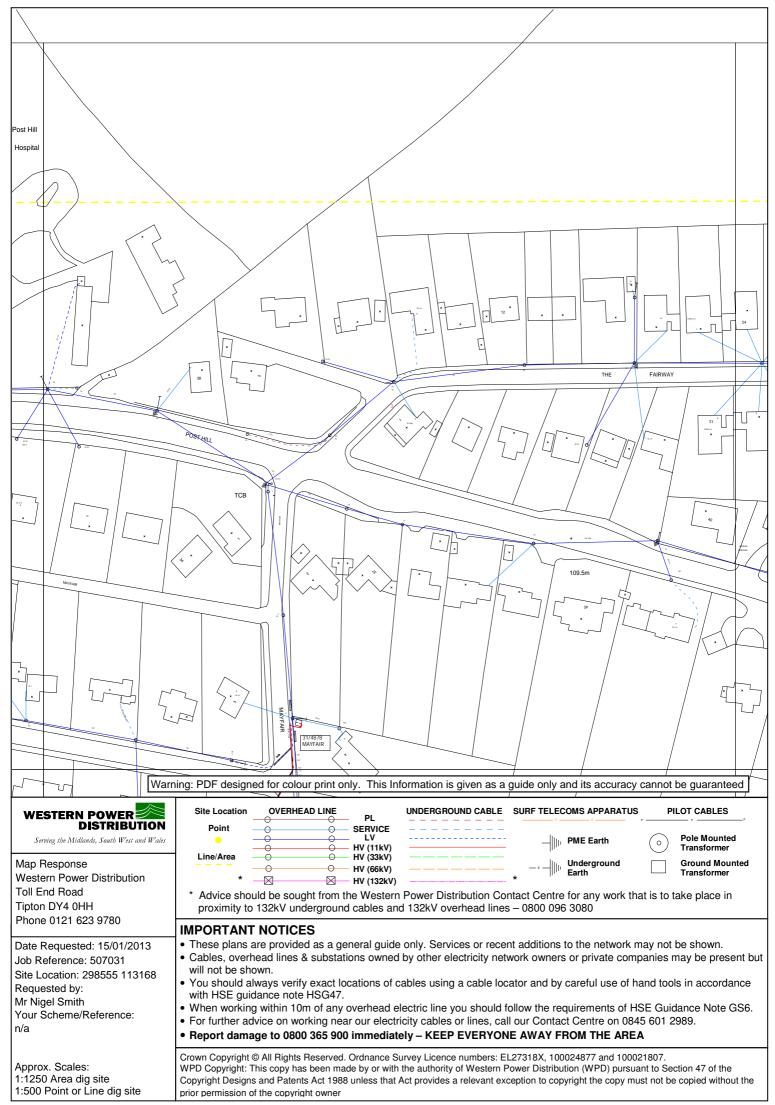


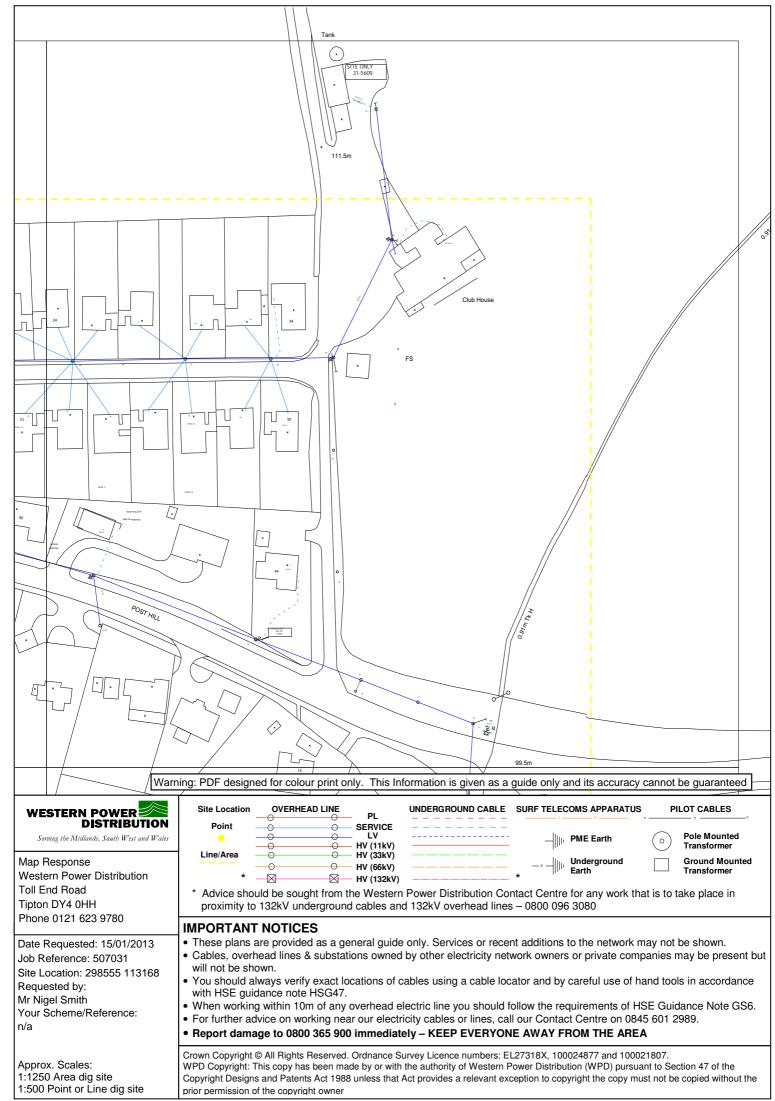
Date Requested: 15/01/2013 Job Reference: 507031 Site Location: 298555 113168 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

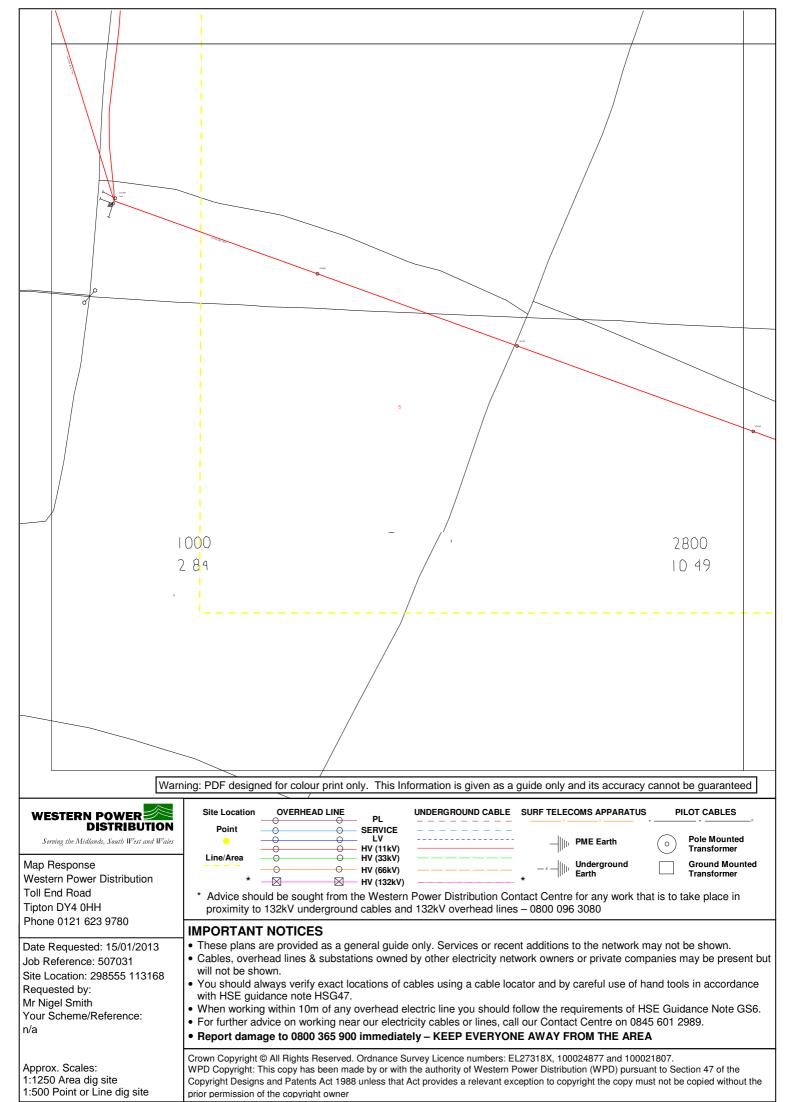
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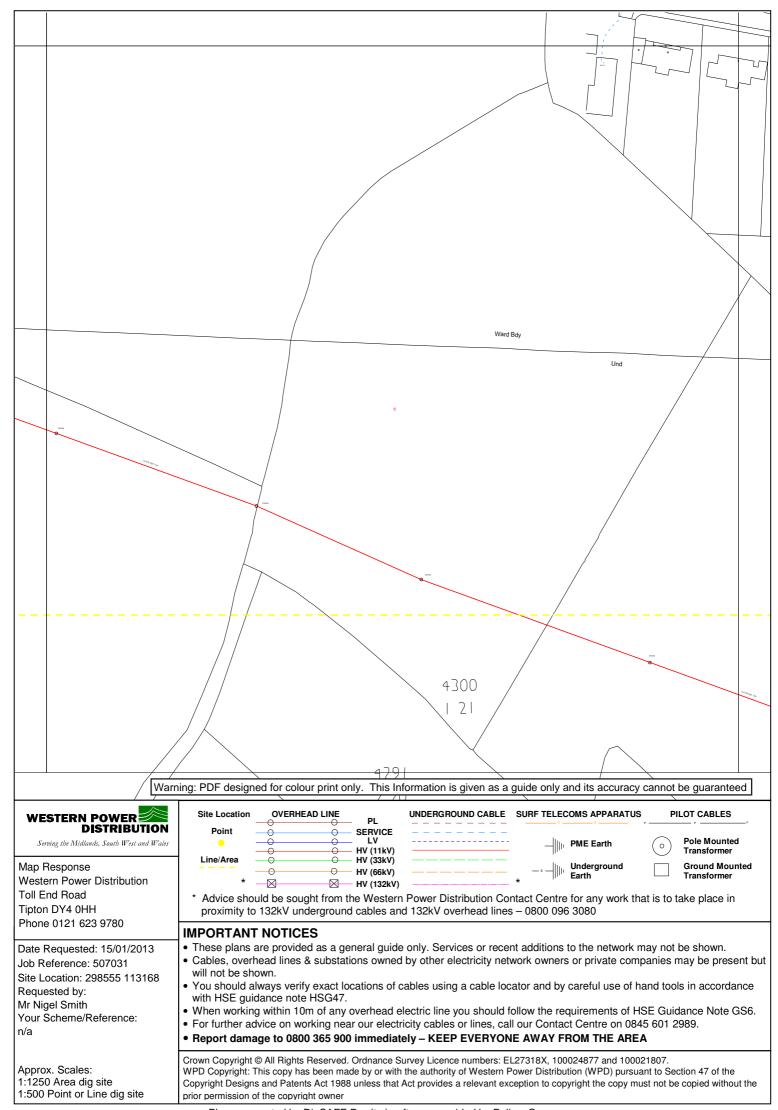


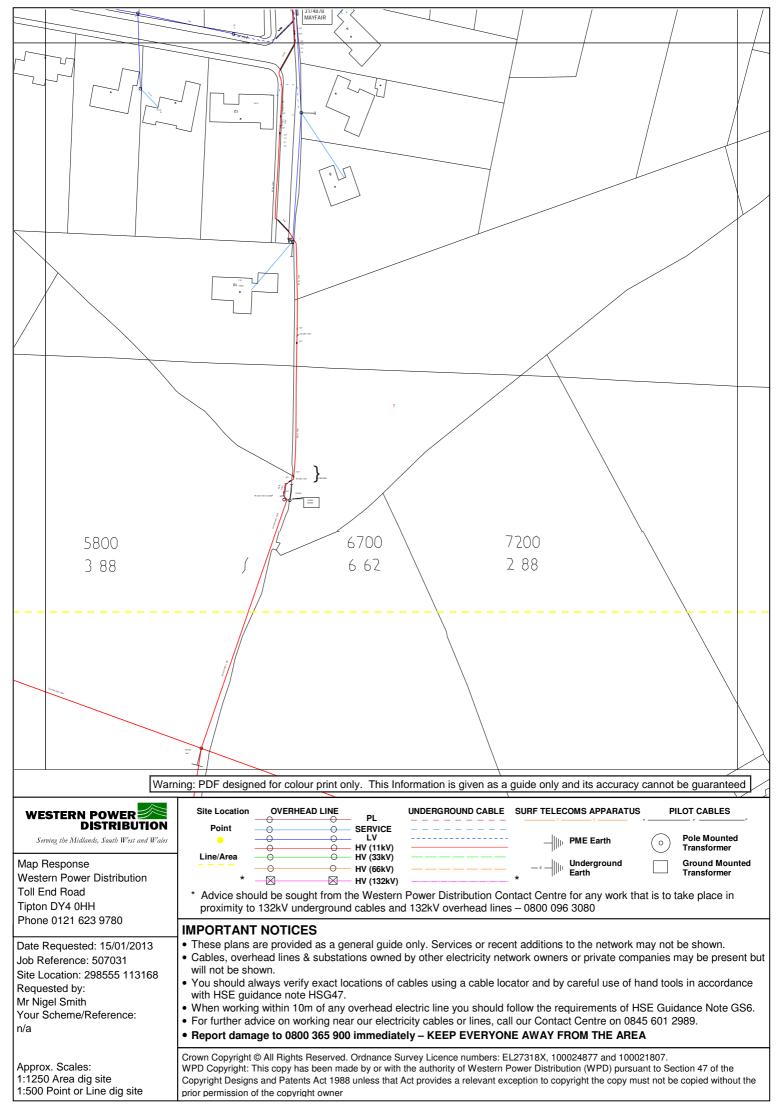


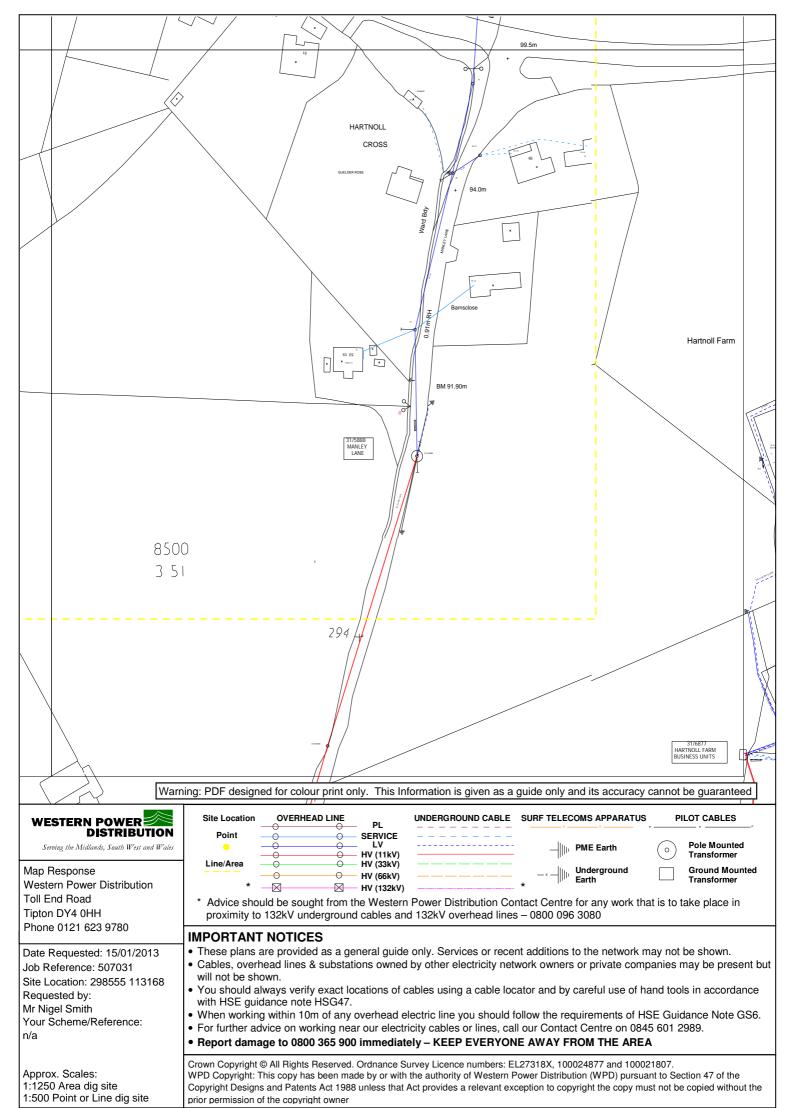


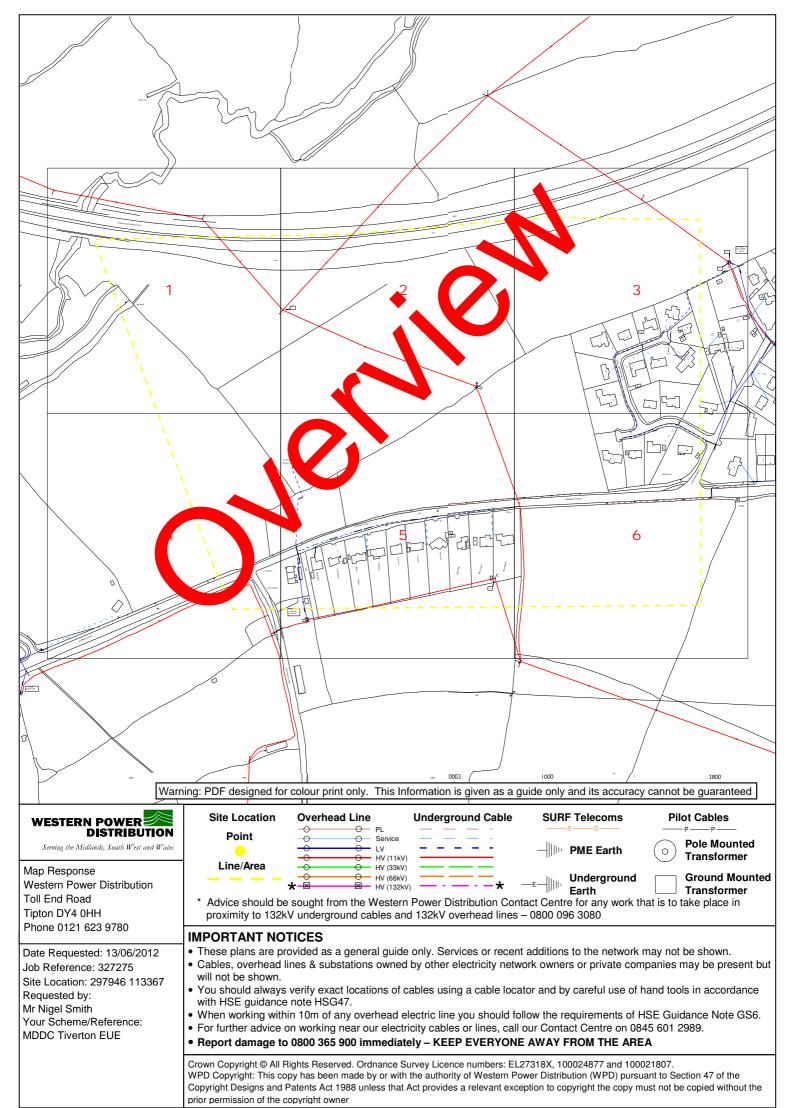


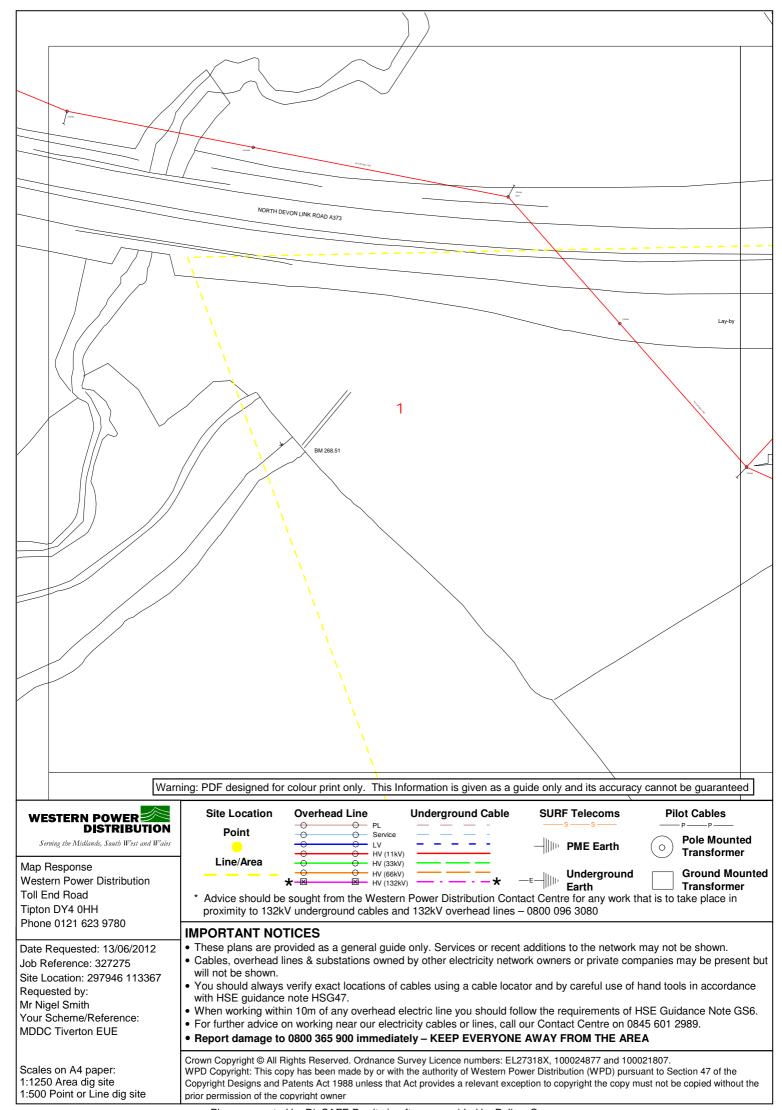


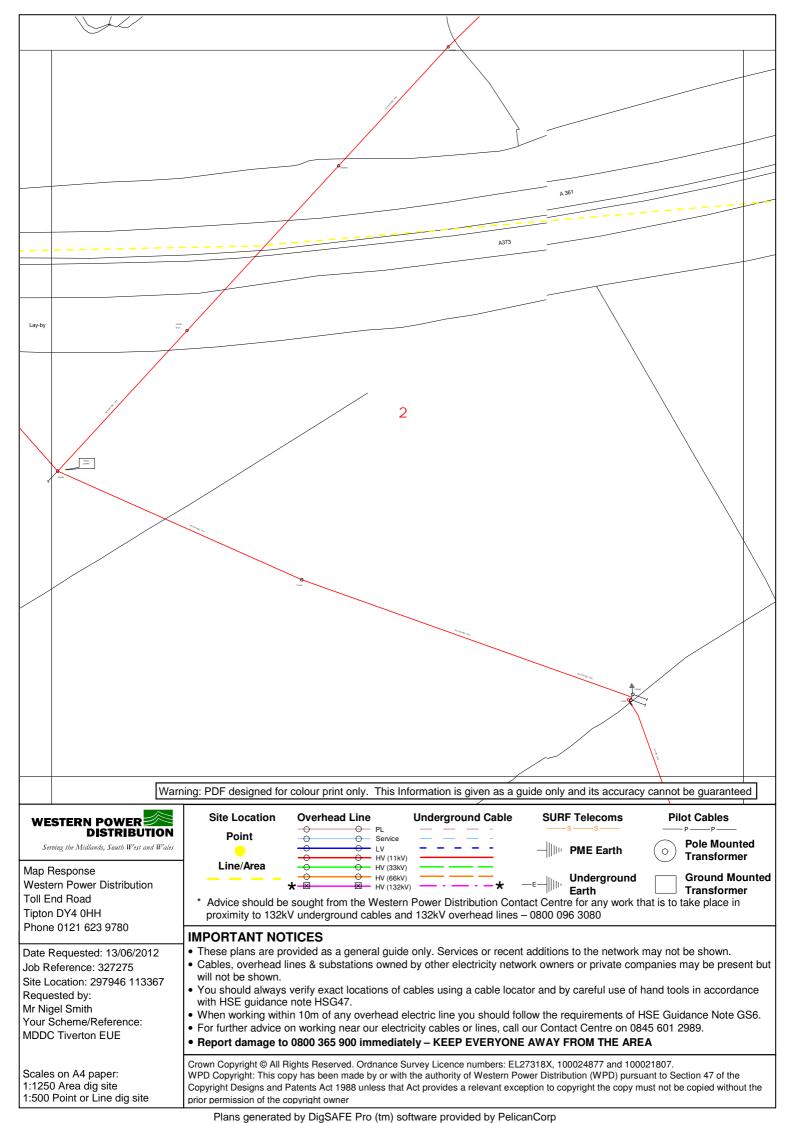


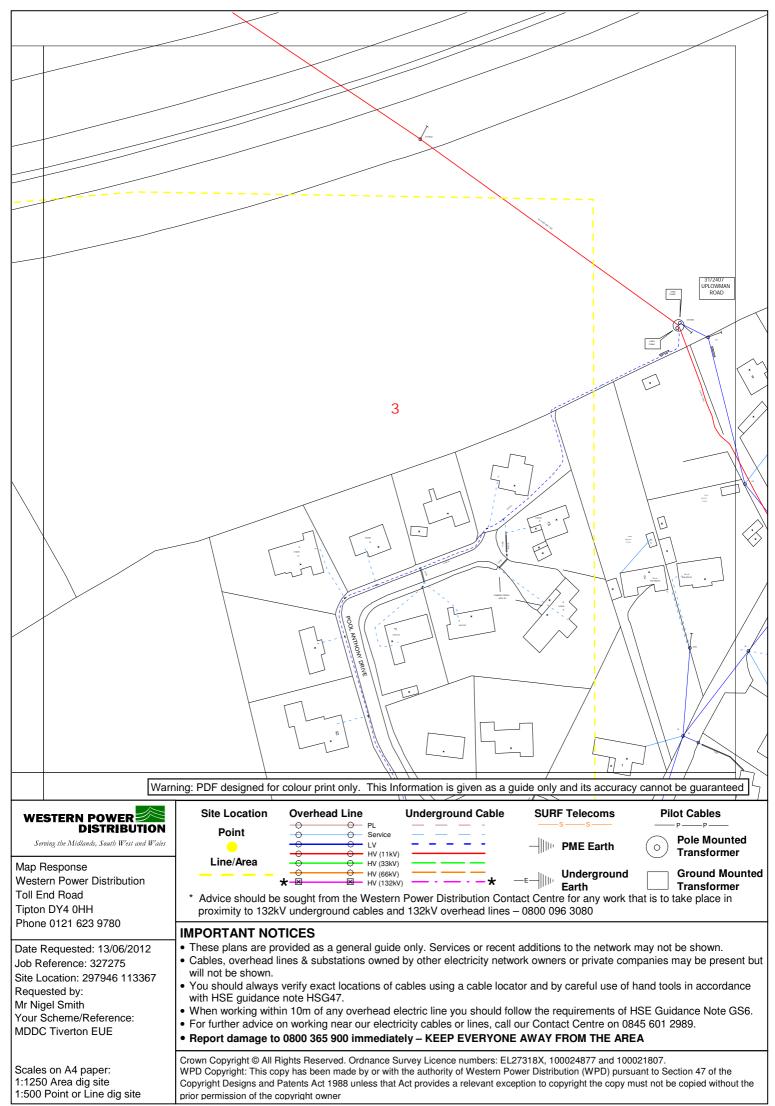


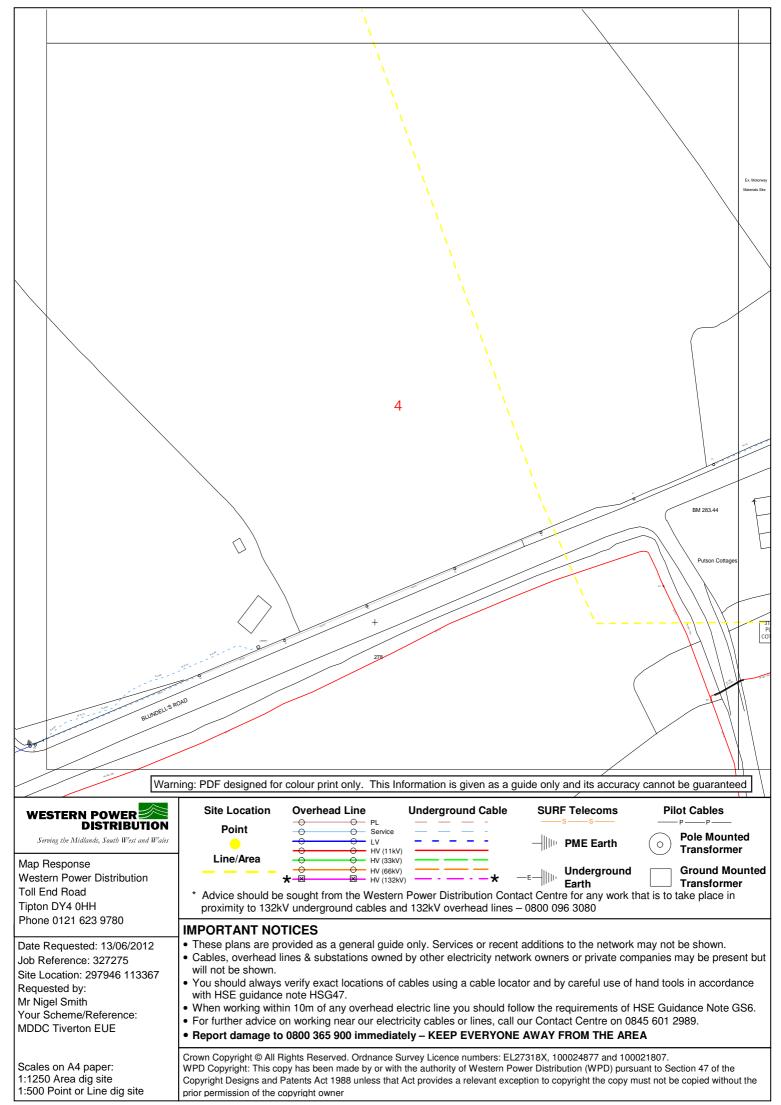


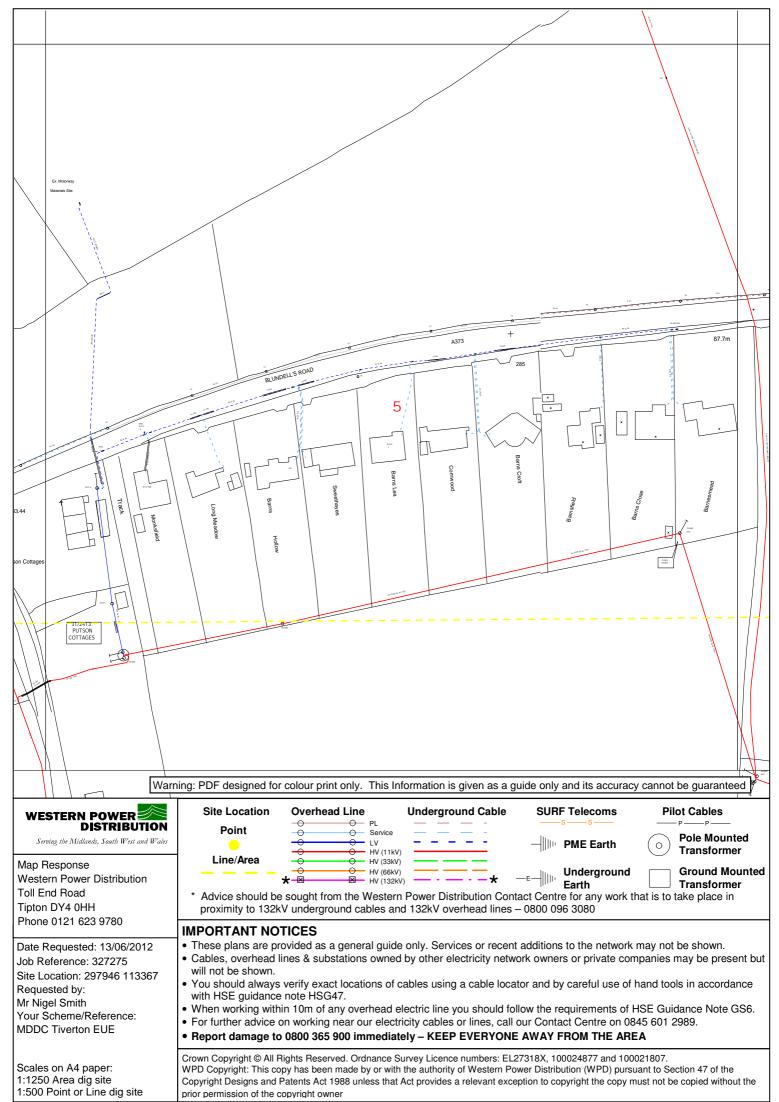


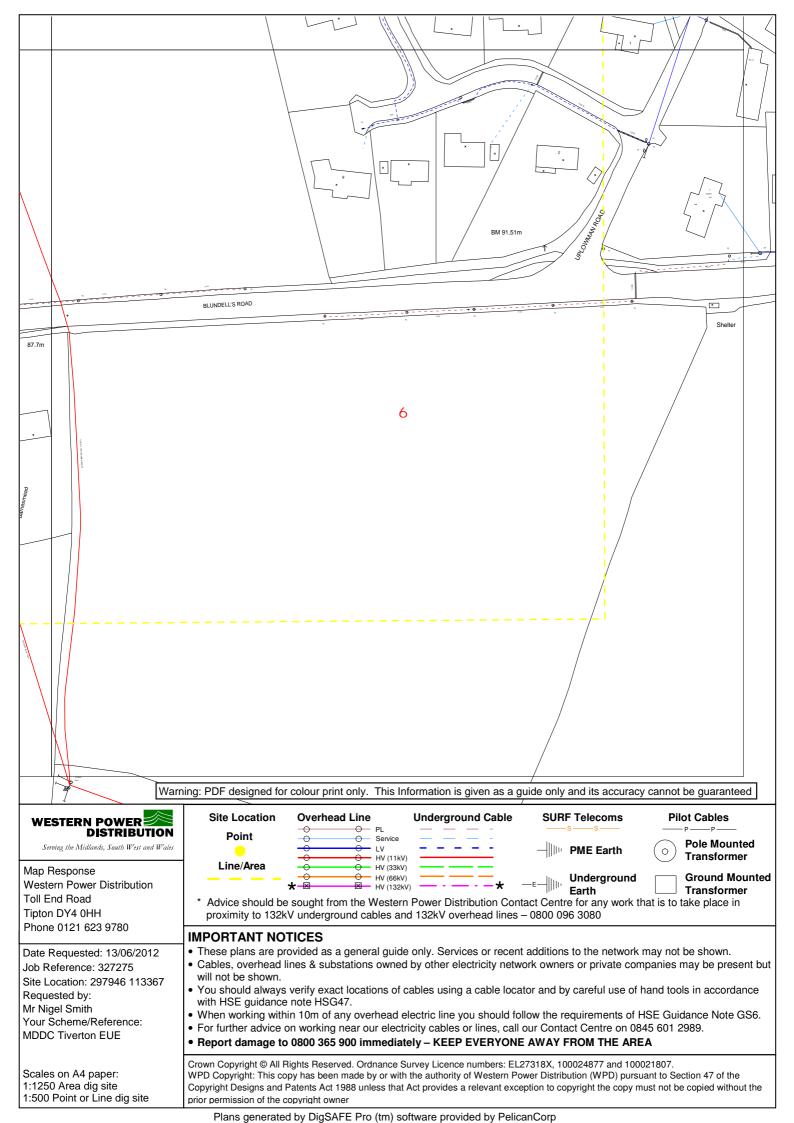


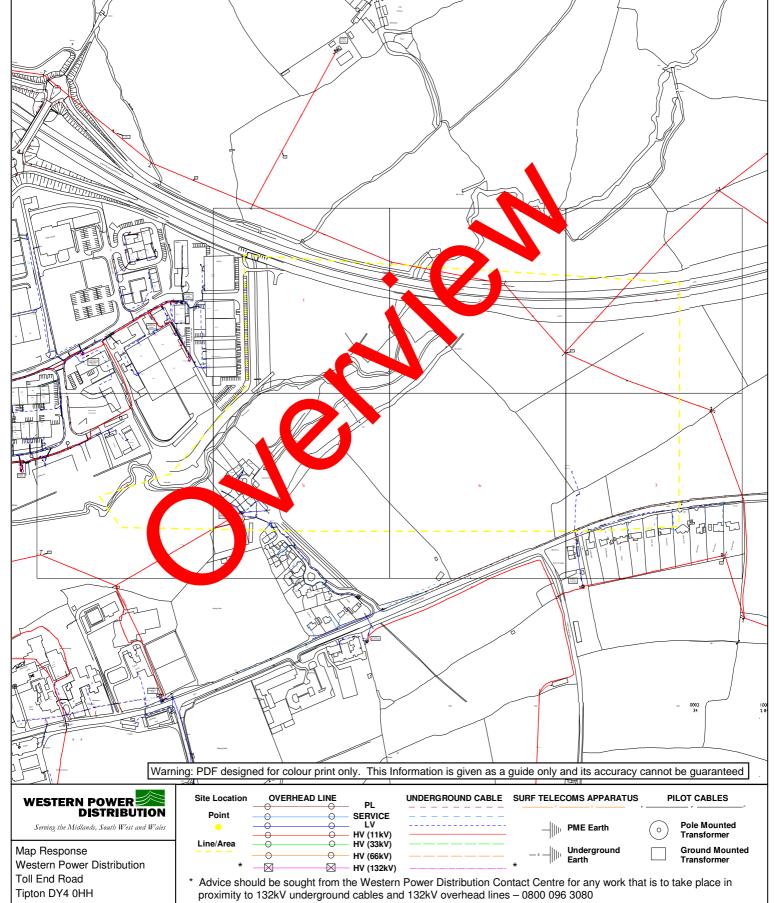










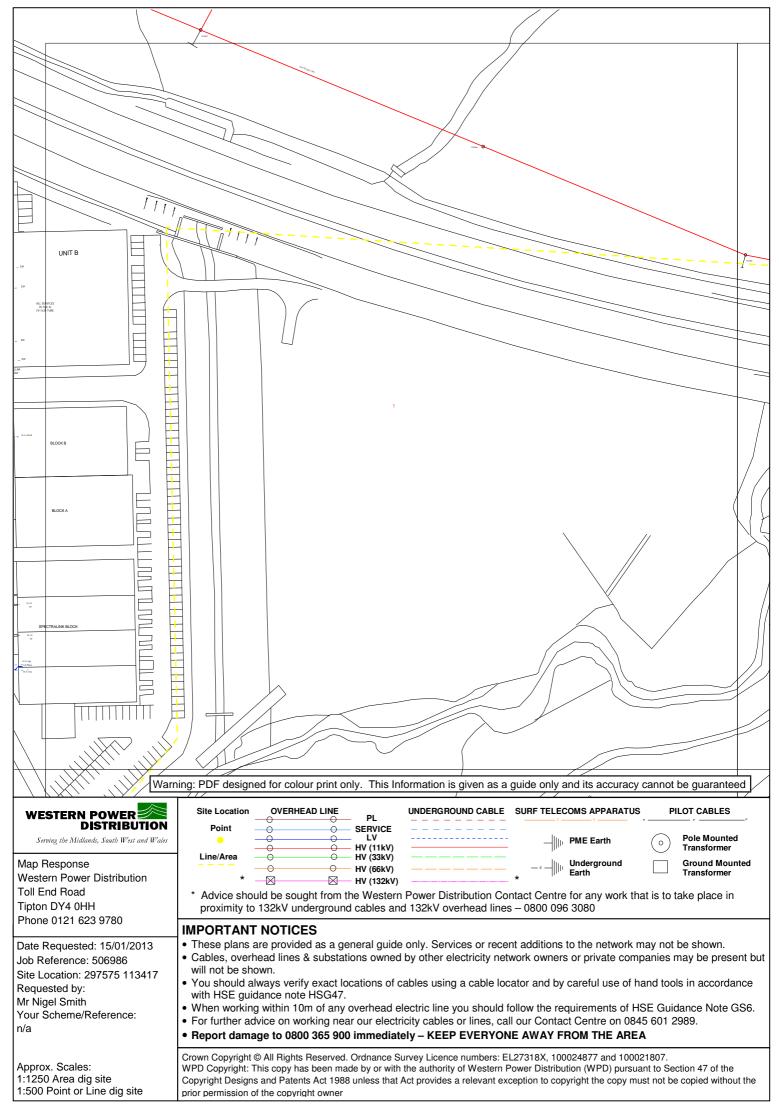


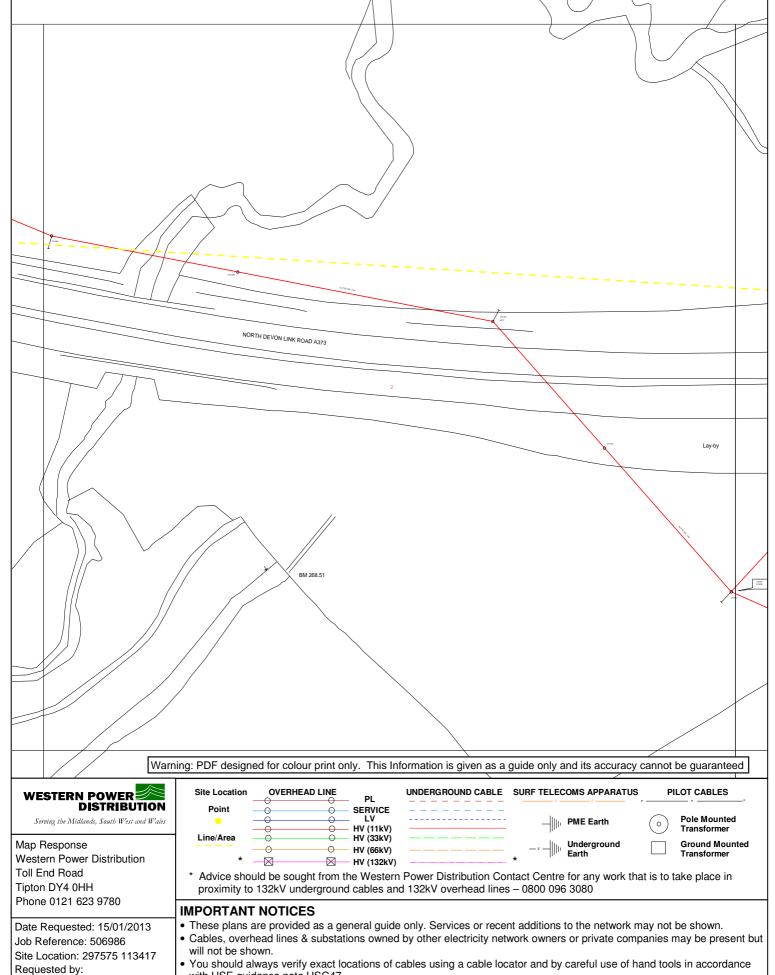
Phone 0121 623 9780

Date Requested: 15/01/2013 Job Reference: 506986 Site Location: 297575 113417 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

IMPORTANT NOTICES

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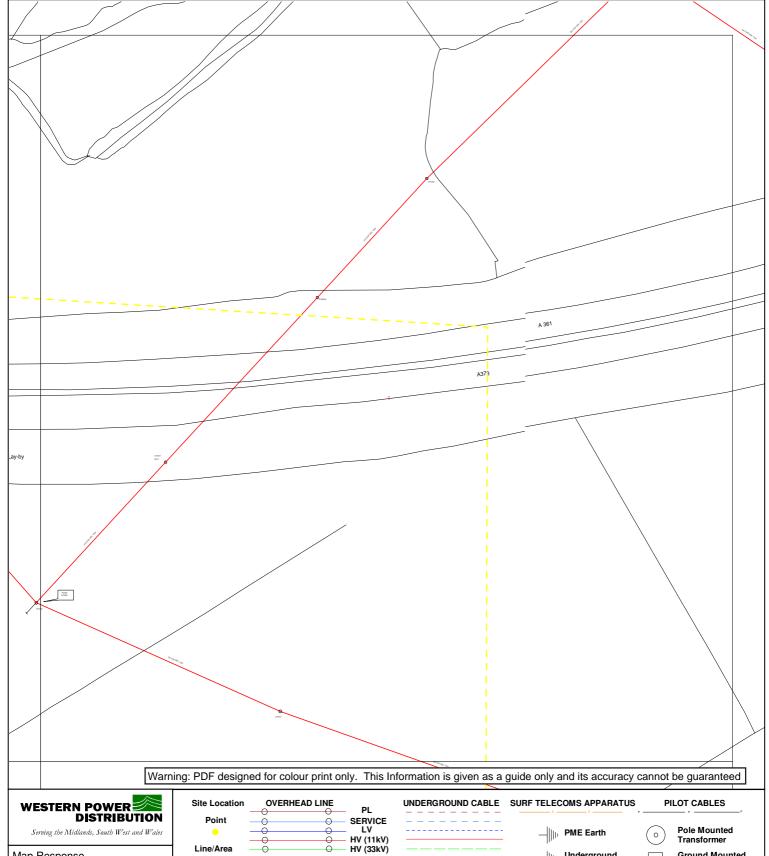
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site

Your Scheme/Reference:

Mr Nigel Smith

n/a

- with HSE guidance note HSG47.
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Map Response Western Power Distribution Toll End Road Tipton DY4 0HH Phone 0121 623 9780

Date Requested: 15/01/2013 Job Reference: 506986 Site Location: 297575 113417 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

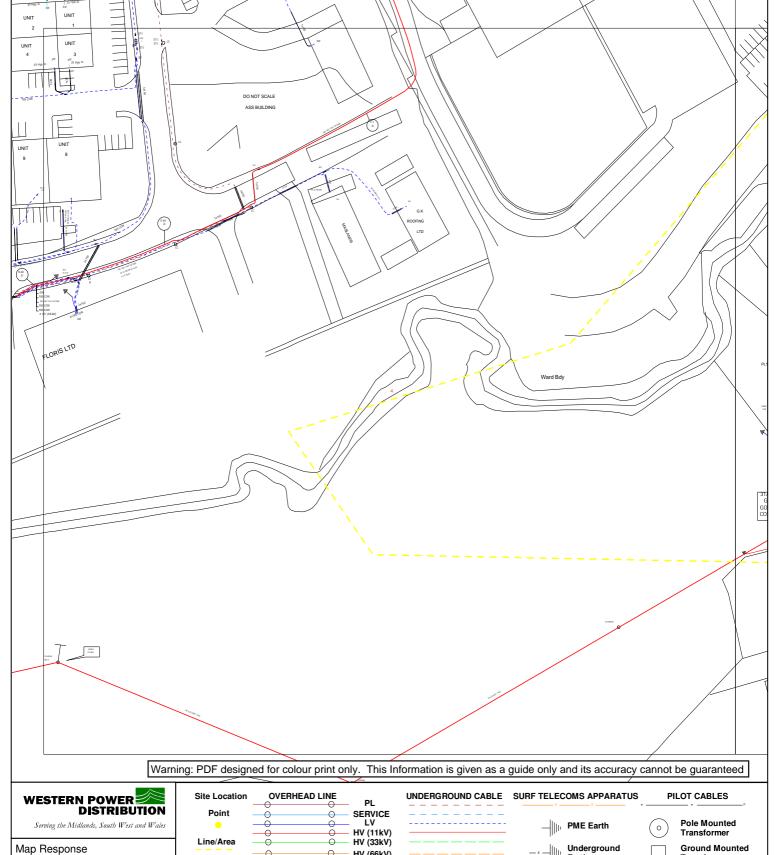
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site



Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines - 0800 096 3080

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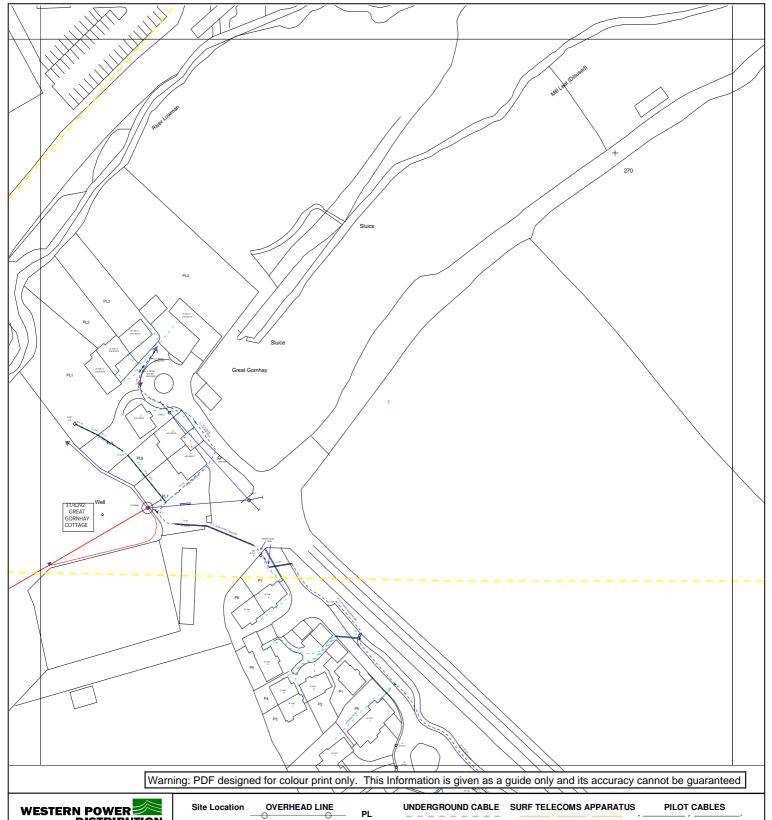
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site

HV (66kV) X HV (132kV)

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Date Requested: 15/01/2013 Job Reference: 506986 Site Location: 297575 113417 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

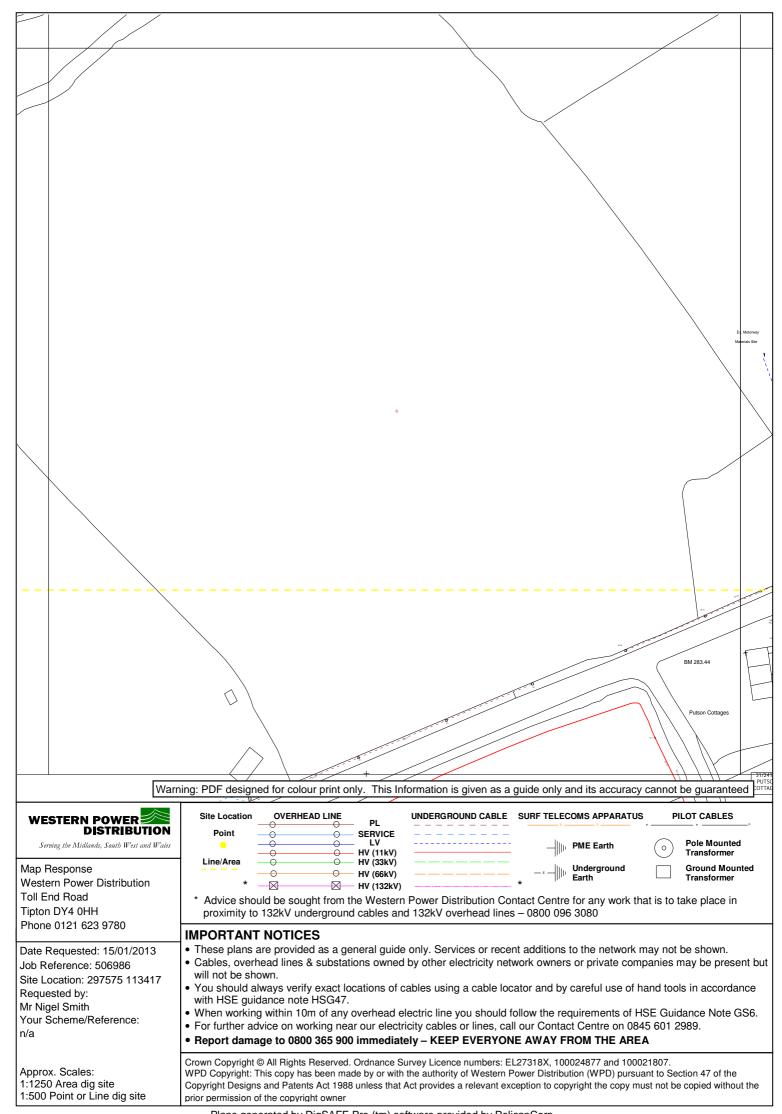
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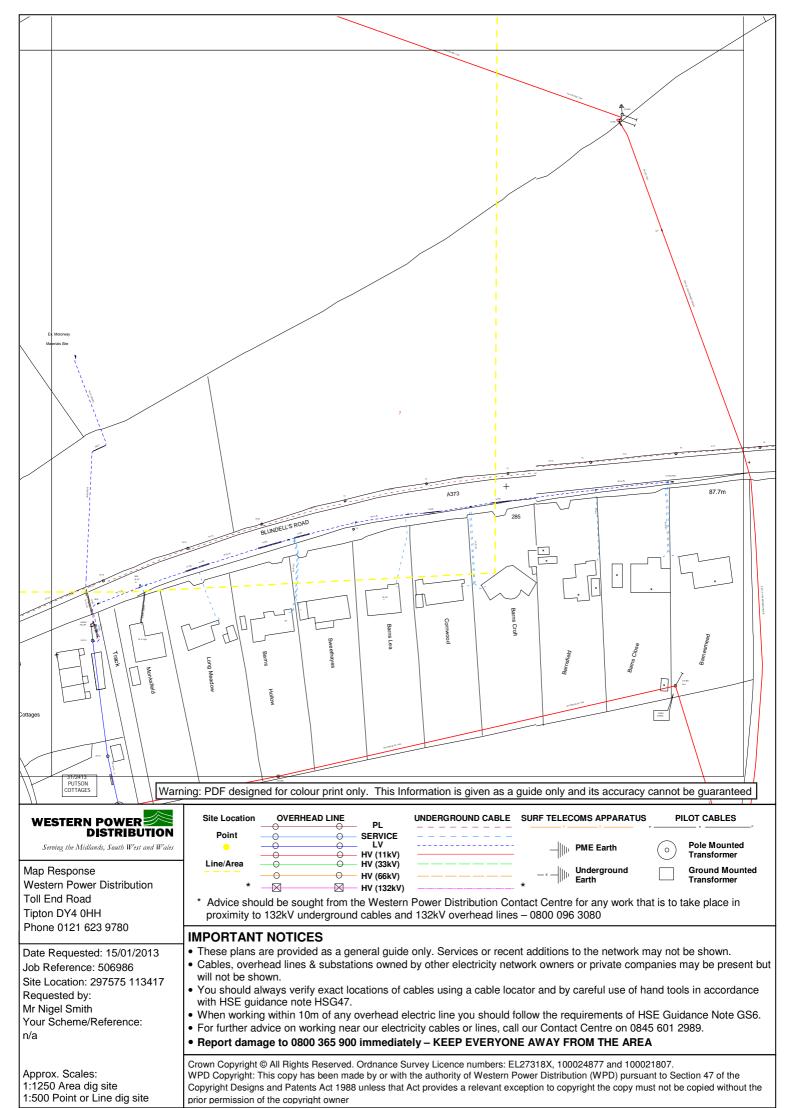
Point SERVICE **Pole Mounted** HV (11kV) Transforme Line/Area HV (33kV) **Ground Mounted** Underground HV (66kV) HV (132kV)

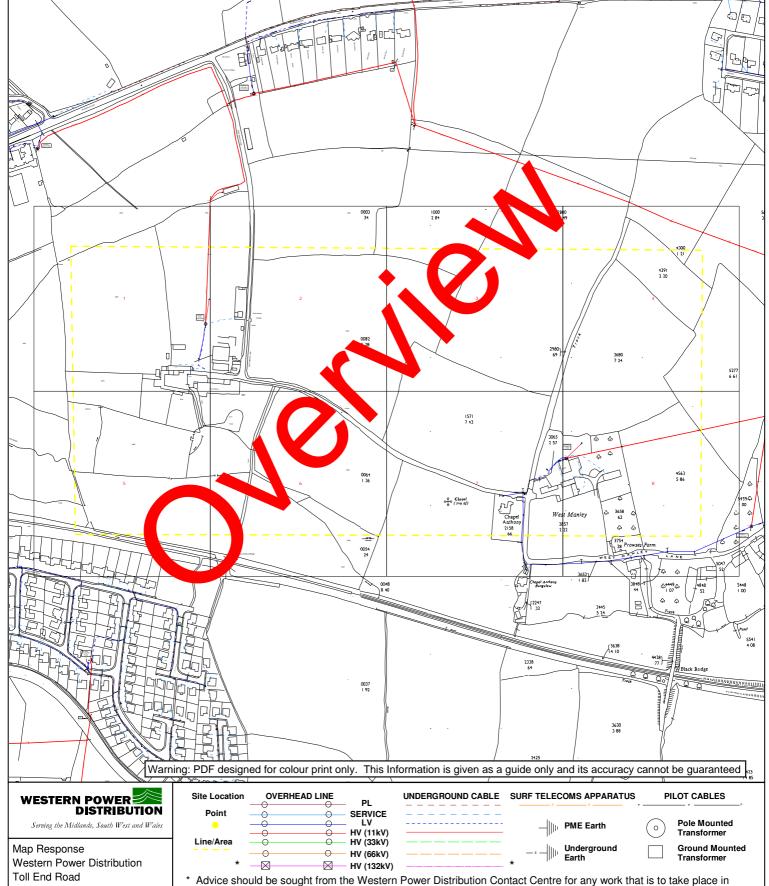
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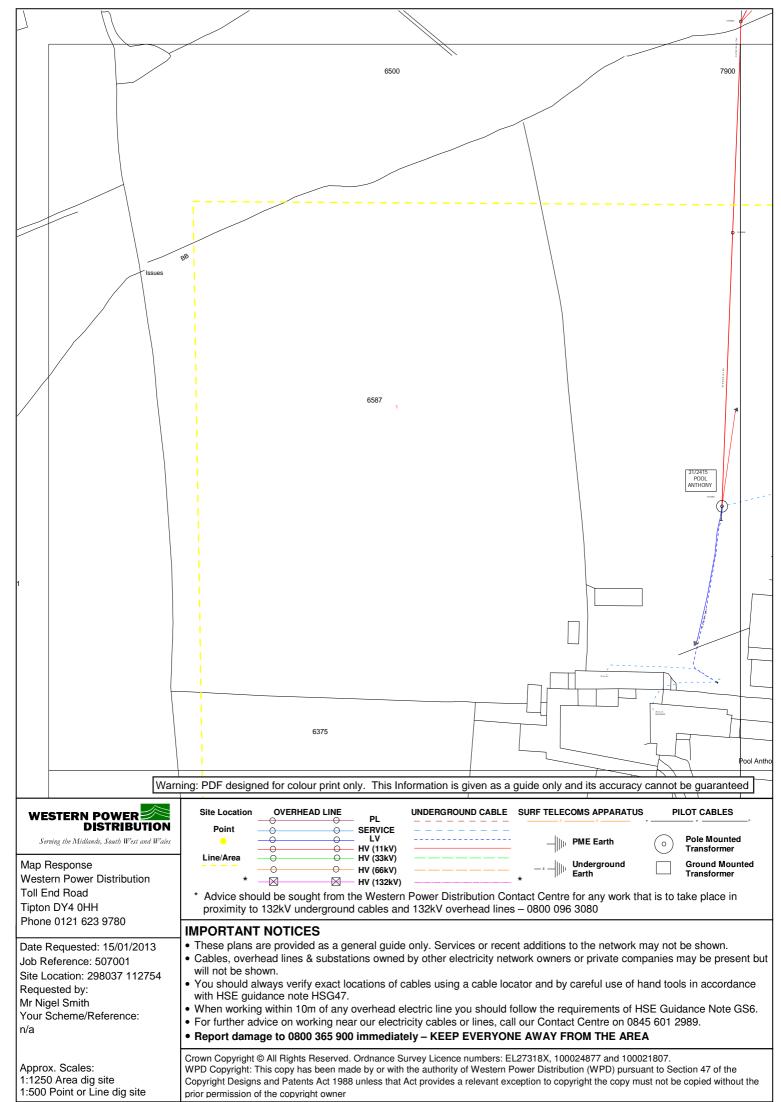


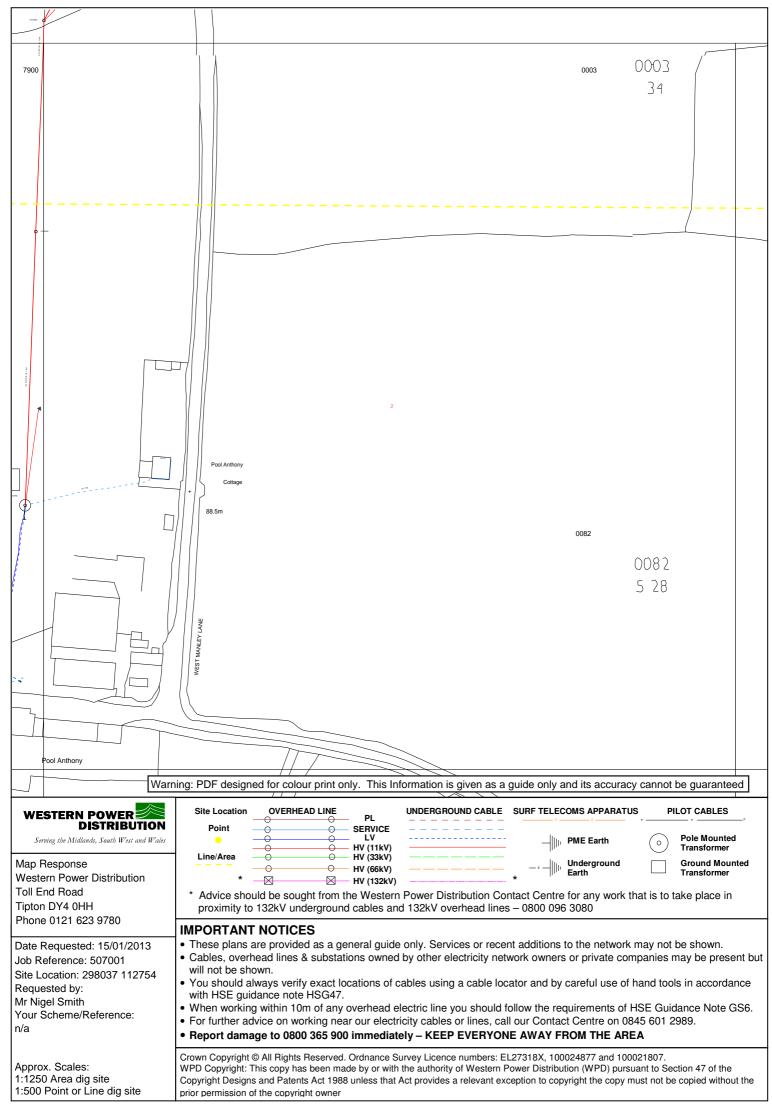
Tipton DY4 0HH Phone 0121 623 9780

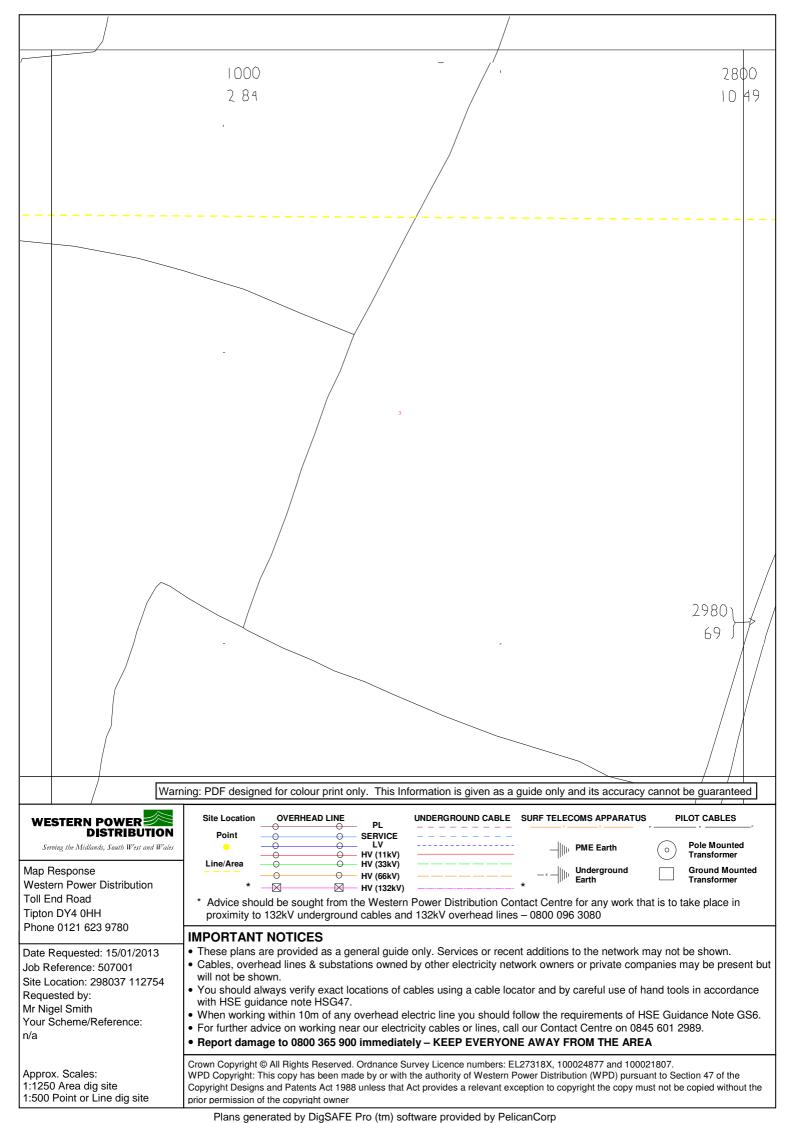
Date Requested: 15/01/2013 Job Reference: 507001 Site Location: 298037 112754 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a * Advice should be sought from the Western Power Distribution Contact Centre for any work that is to take place in proximity to 132kV underground cables and 132kV overhead lines – 0800 096 3080

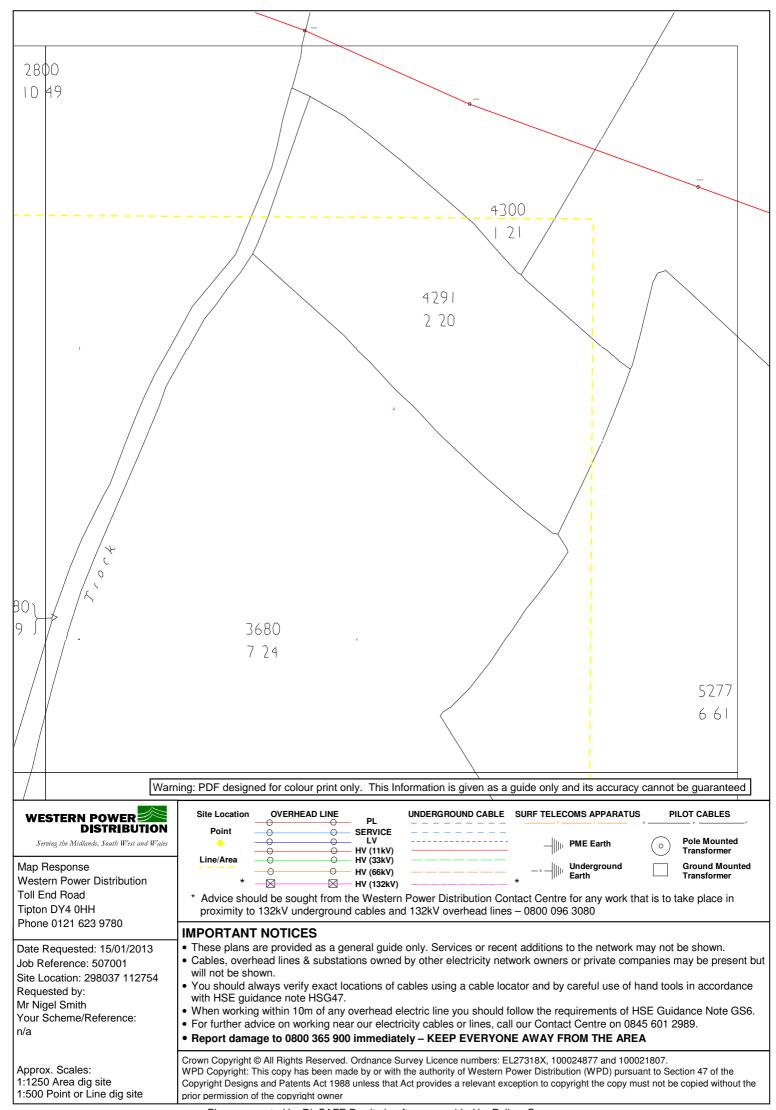
IMPORTANT NOTICES

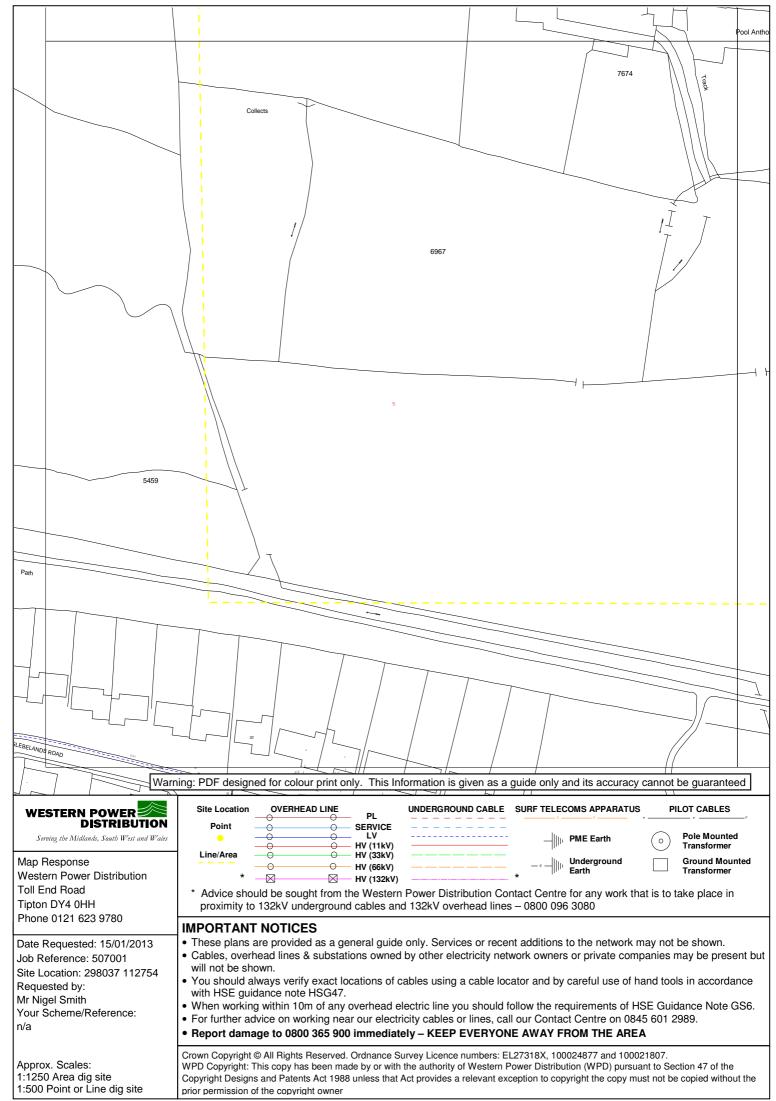
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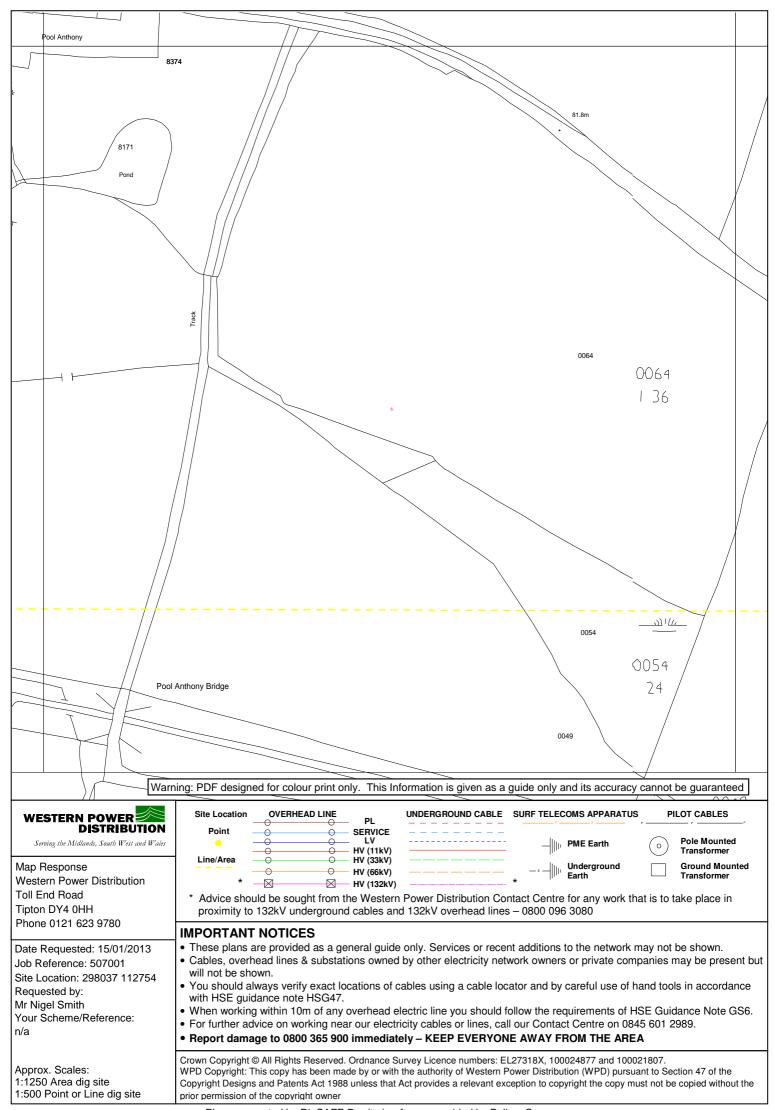


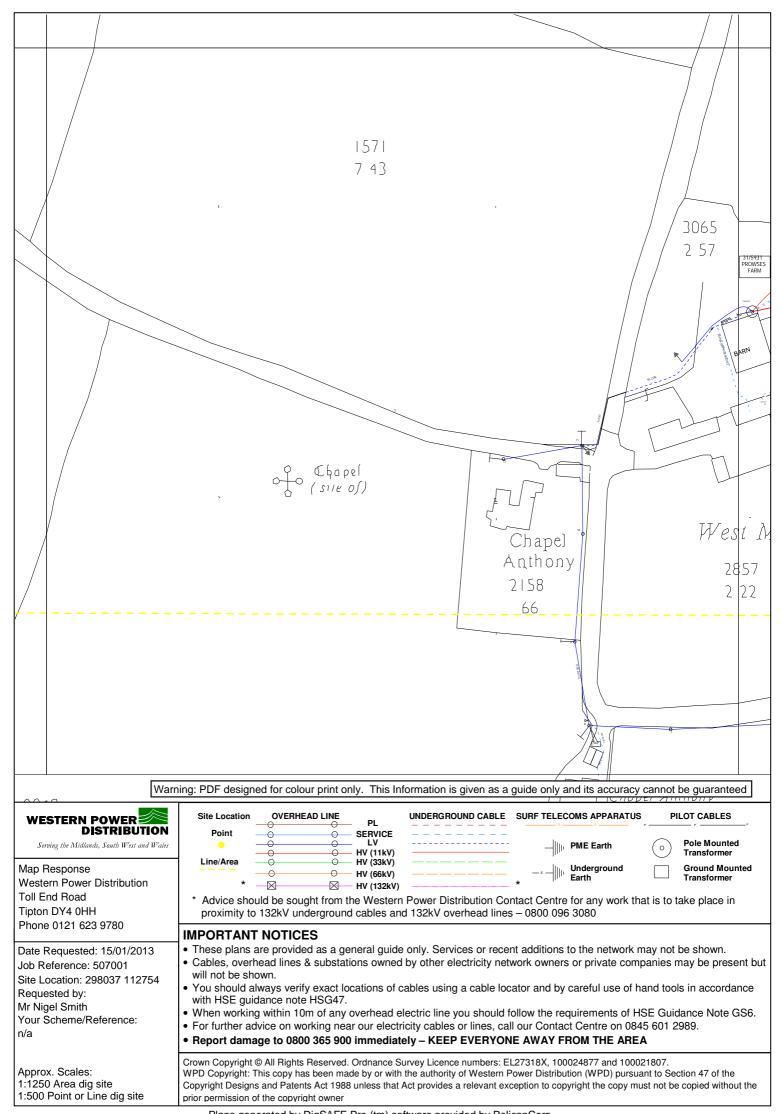


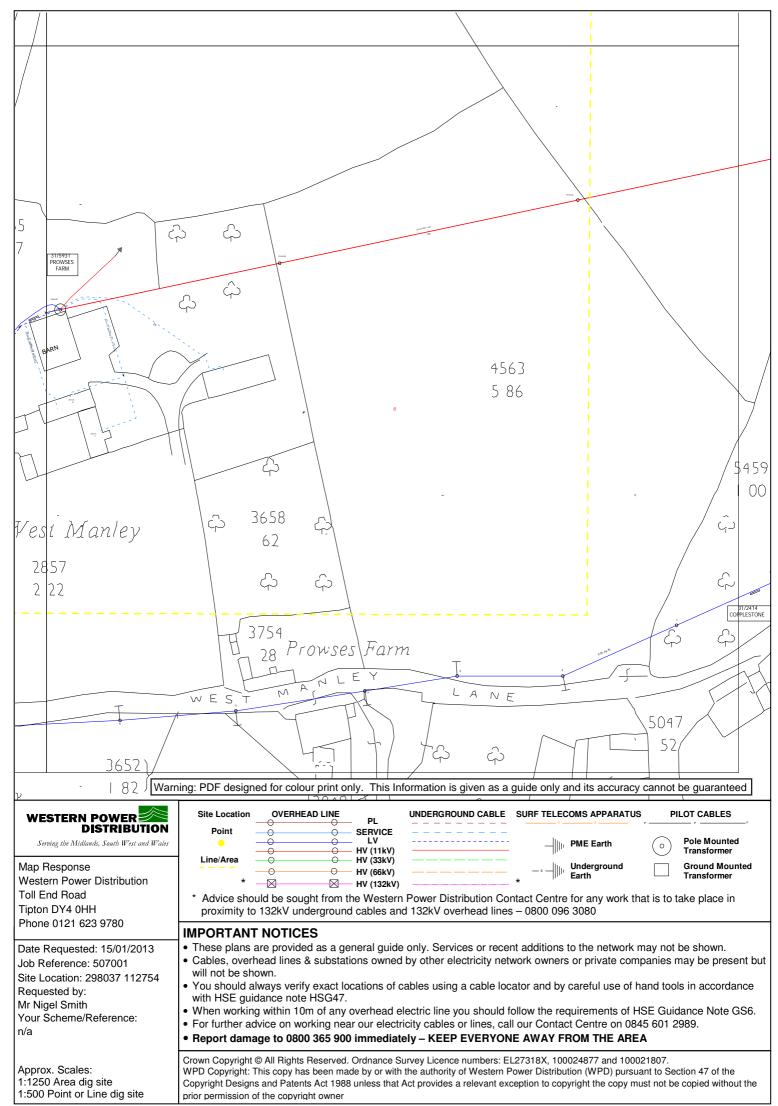


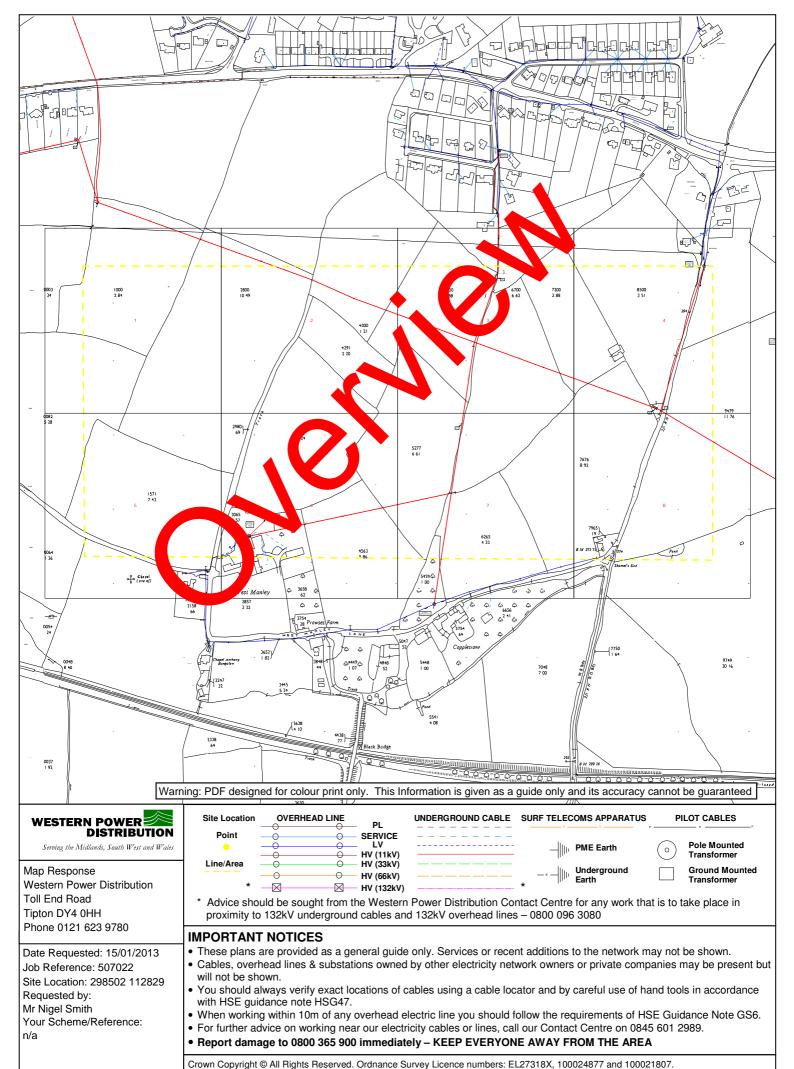




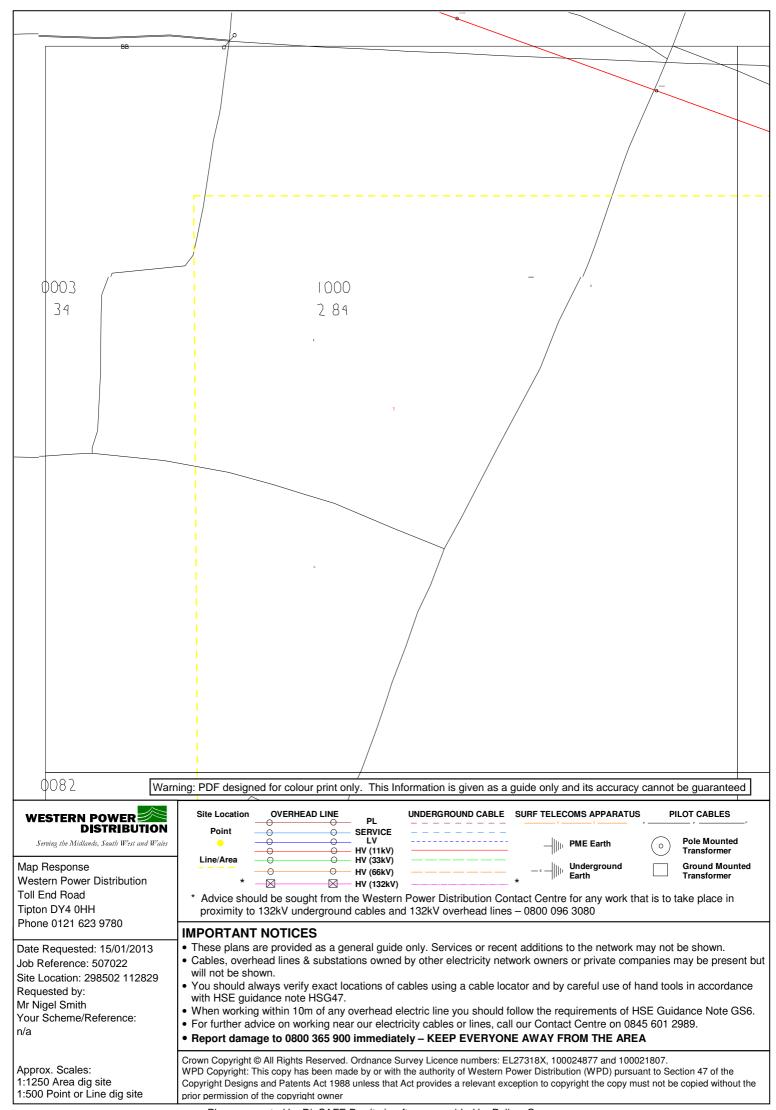


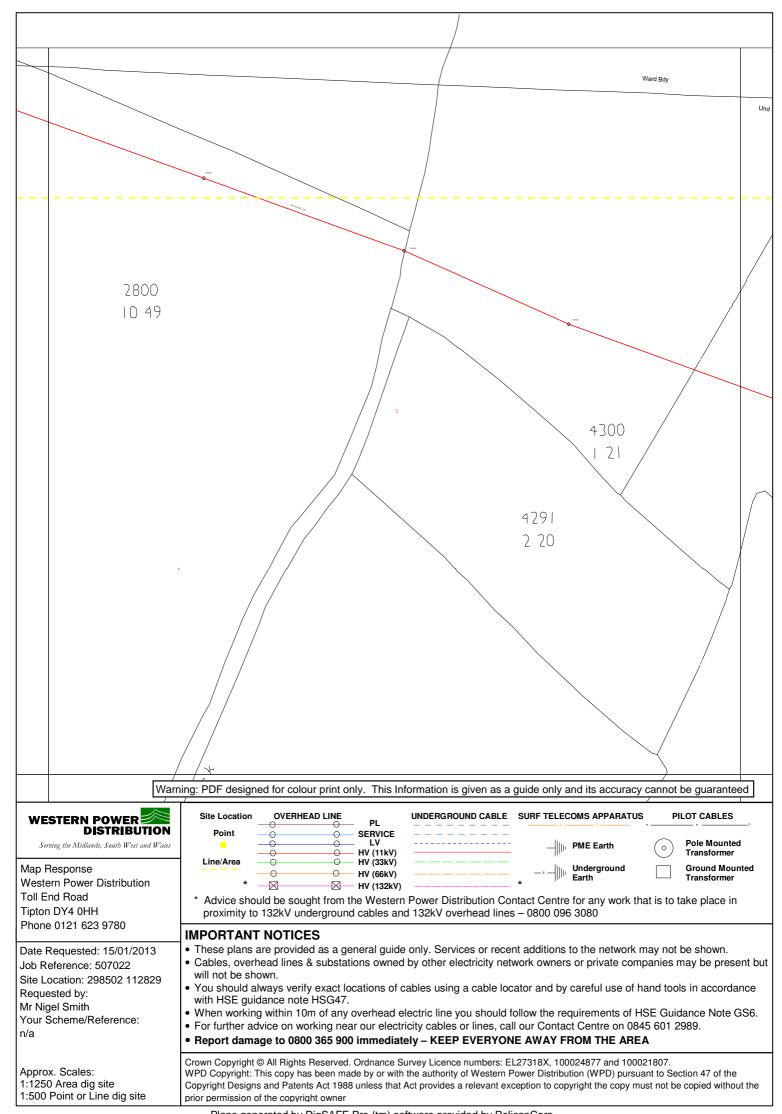


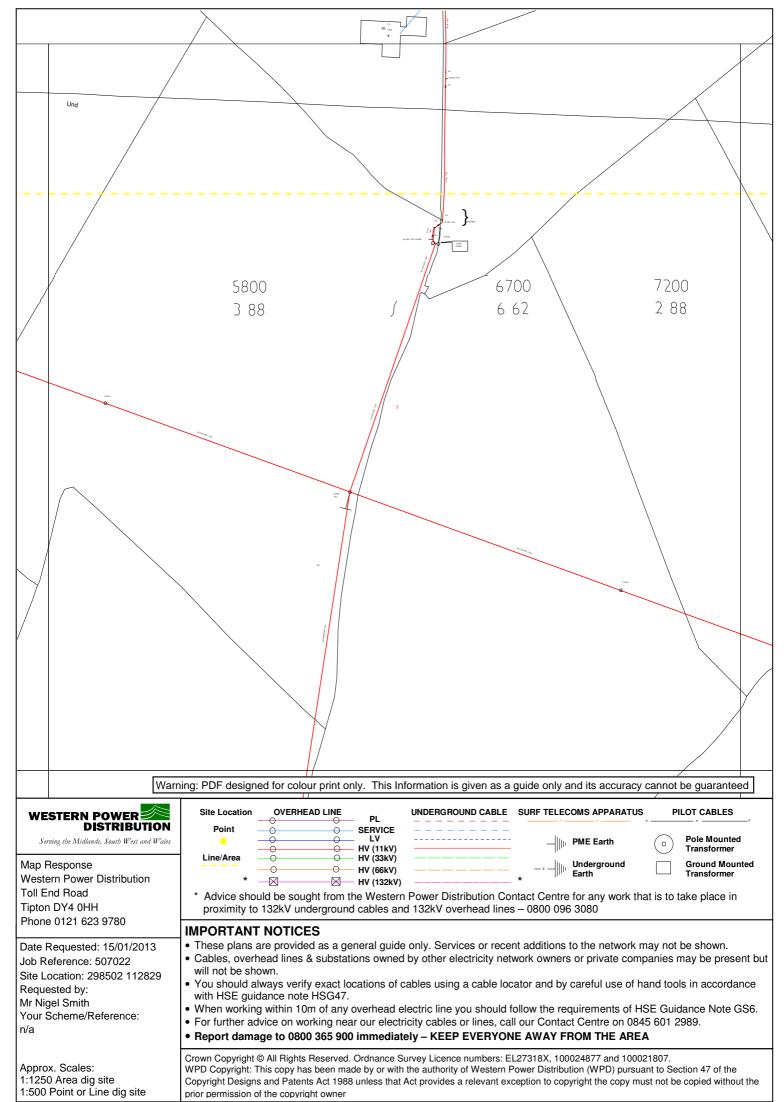


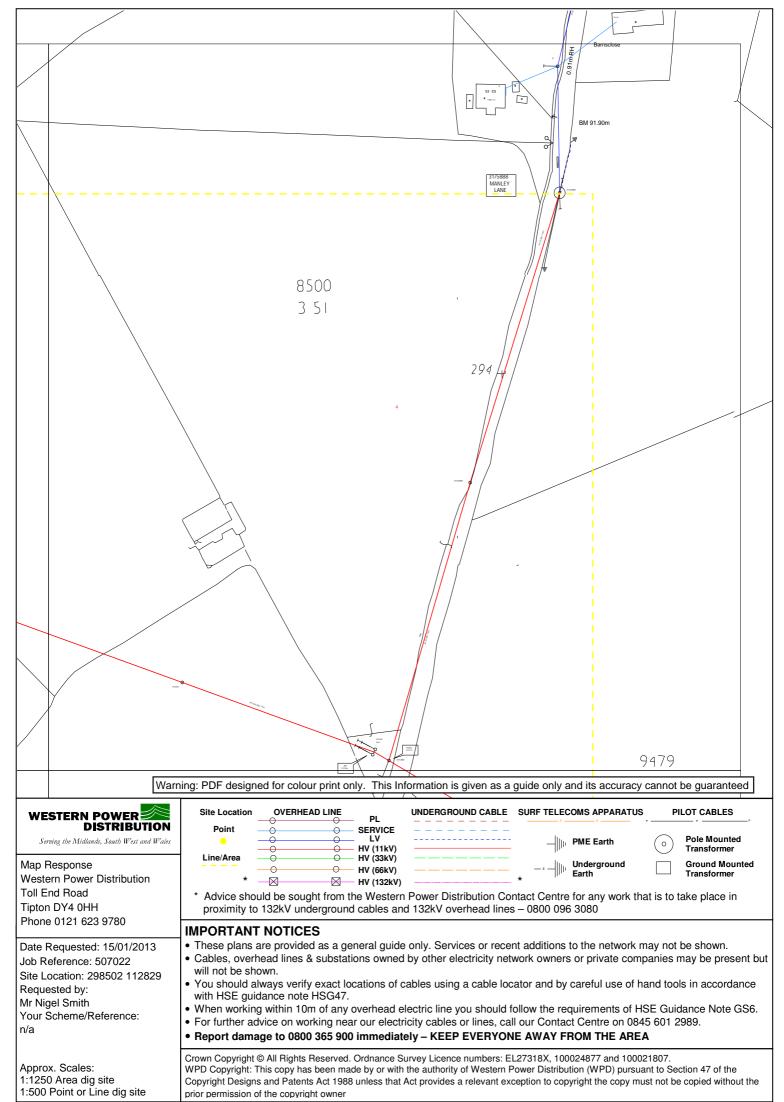


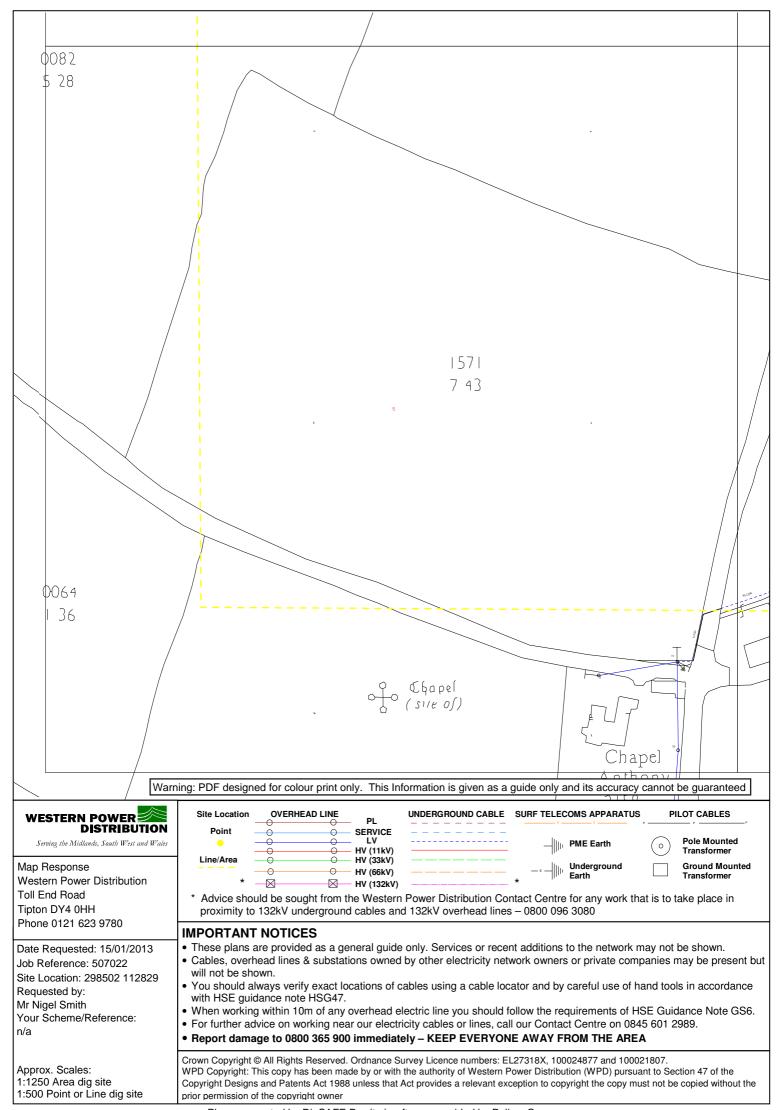
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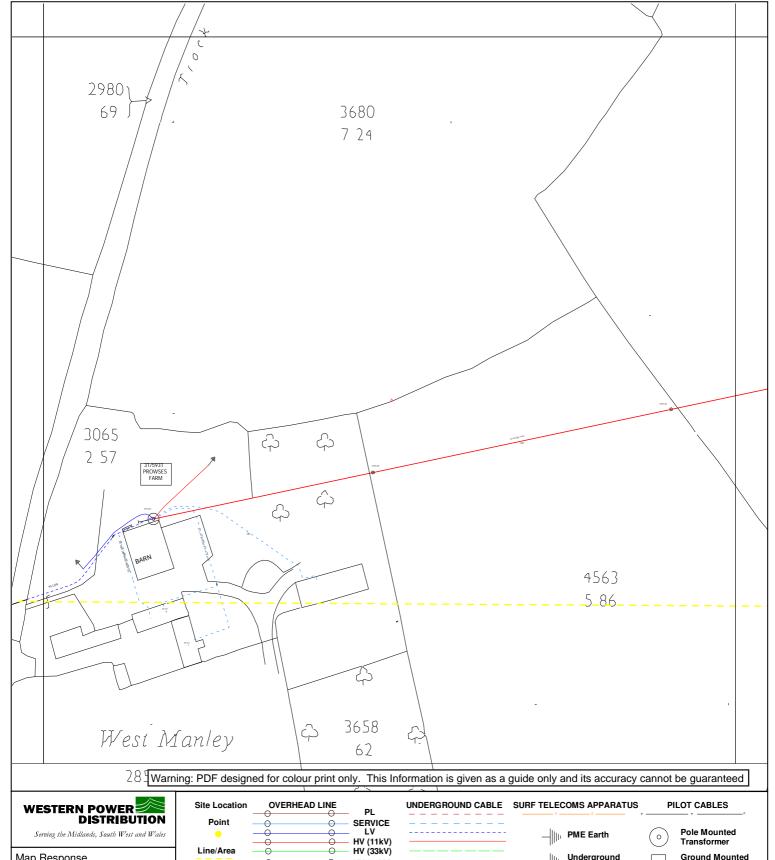












Map Response Western Power Distribution Toll End Road Tipton DY4 0HH Phone 0121 623 9780

Date Requested: 15/01/2013 Job Reference: 507022 Site Location: 298502 112829 Requested by: Mr Nigel Smith Your Scheme/Reference: n/a

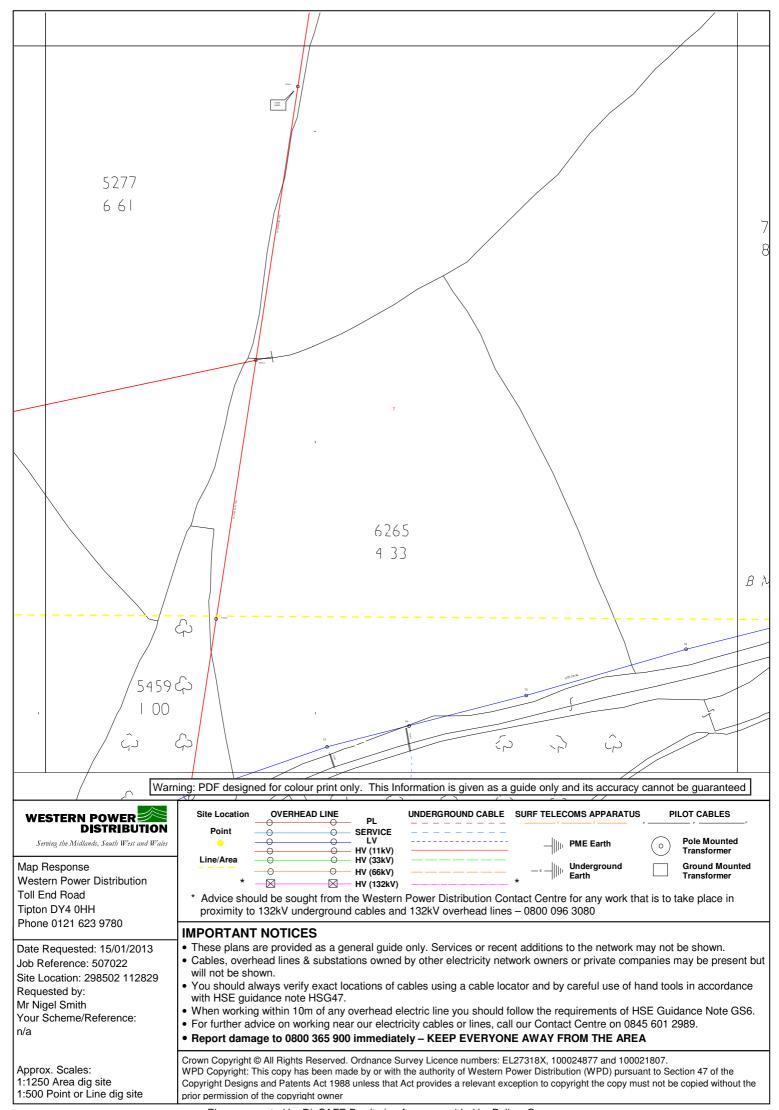
Approx. Scales: 1:1250 Area dig site 1:500 Point or Line dig site

Underground HV (132kV)

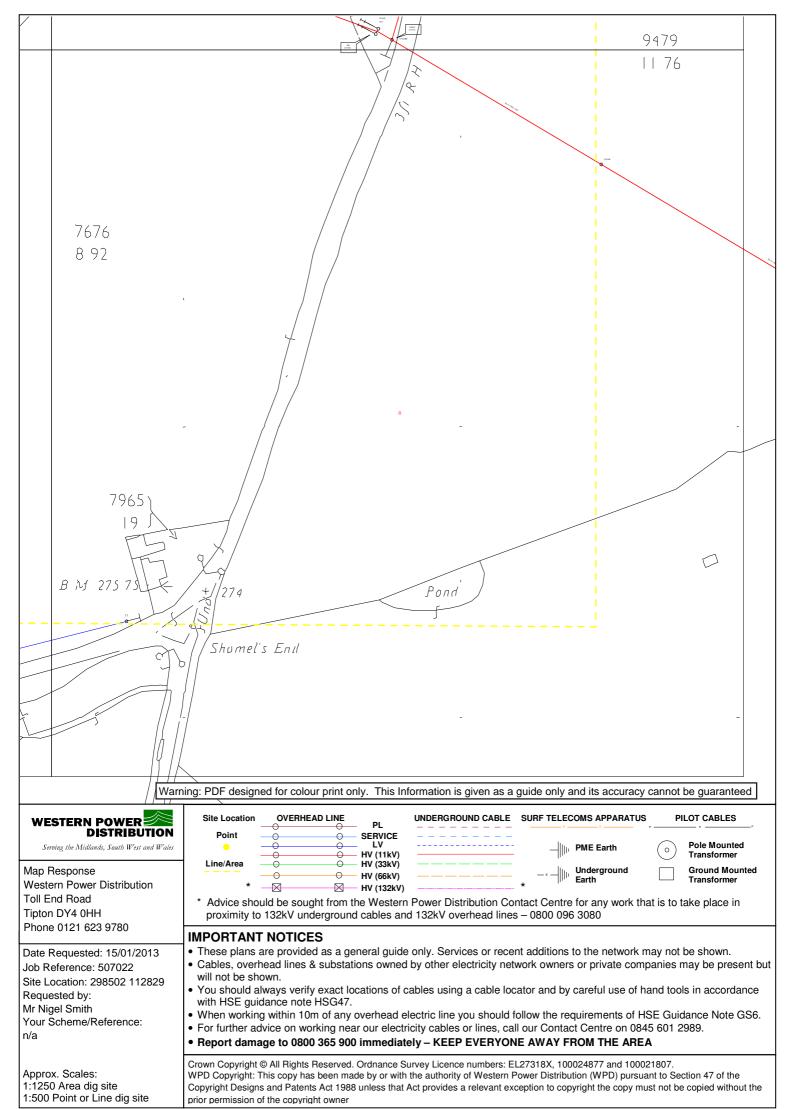
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Plans generated by DigSAFE Pro (tm) software provided by PelicanCorp



Smith, Nigel

From: Dunn, Martyn J [mdunn@southwestwater.co.uk]

Sent: 01 August 2012 12:46

To: Smith, Nigel

Subject: SWW In 2012 08 01 Tiverton East Urban Extension Feasibility Study

Nigel we would be in a position to accept the growth proposals to the period 2016 (R1,R3 & E1) within the existing water and foul drainage infrastructure.

Beyond this we would need to evaluate the water supply and sewer networks for the balance of development.

At some point you will need to provide topographical information to establish where the sites to the south of Blundells Road could drain.

The Tiverton sewage treatment works would at present be able to accommodate the entire development and would not require evaluation or investigation.

At present I see no value in evaluating our infrastructure for the period beyond 2016 at this time as the results of such could not be guaranteed to be valid in 3-4 years time.

Martyn Dunn Development Coordinator 01392 443702

South West Water, Peninsula House, Rydon Lane, Exeter, EX2 7HR

From: Smith, Nigel [mailto:NigelSmith@robsonliddle.com]

Sent: 20 July 2012 12:57 **To:** Dunn, Martyn J

Subject: SWW 2012 07 20 Tiverton East Urban Extension Feasibility Study

Hi Martyn

This is a feasibility study at present so no detailed parcel layouts are available.

We have a preliminary Masterplan with each parcel based on ownership, end use and phasing together with densities for each parcel.

Attached are our drawing 12092-600-sk02 which sows each of the 8 residential areas, 3 employment areas and 3 other uses, school, retail & community.

We have calculated out each parcel / per build year in the attached spreadsheet extract

We are seeking information on:

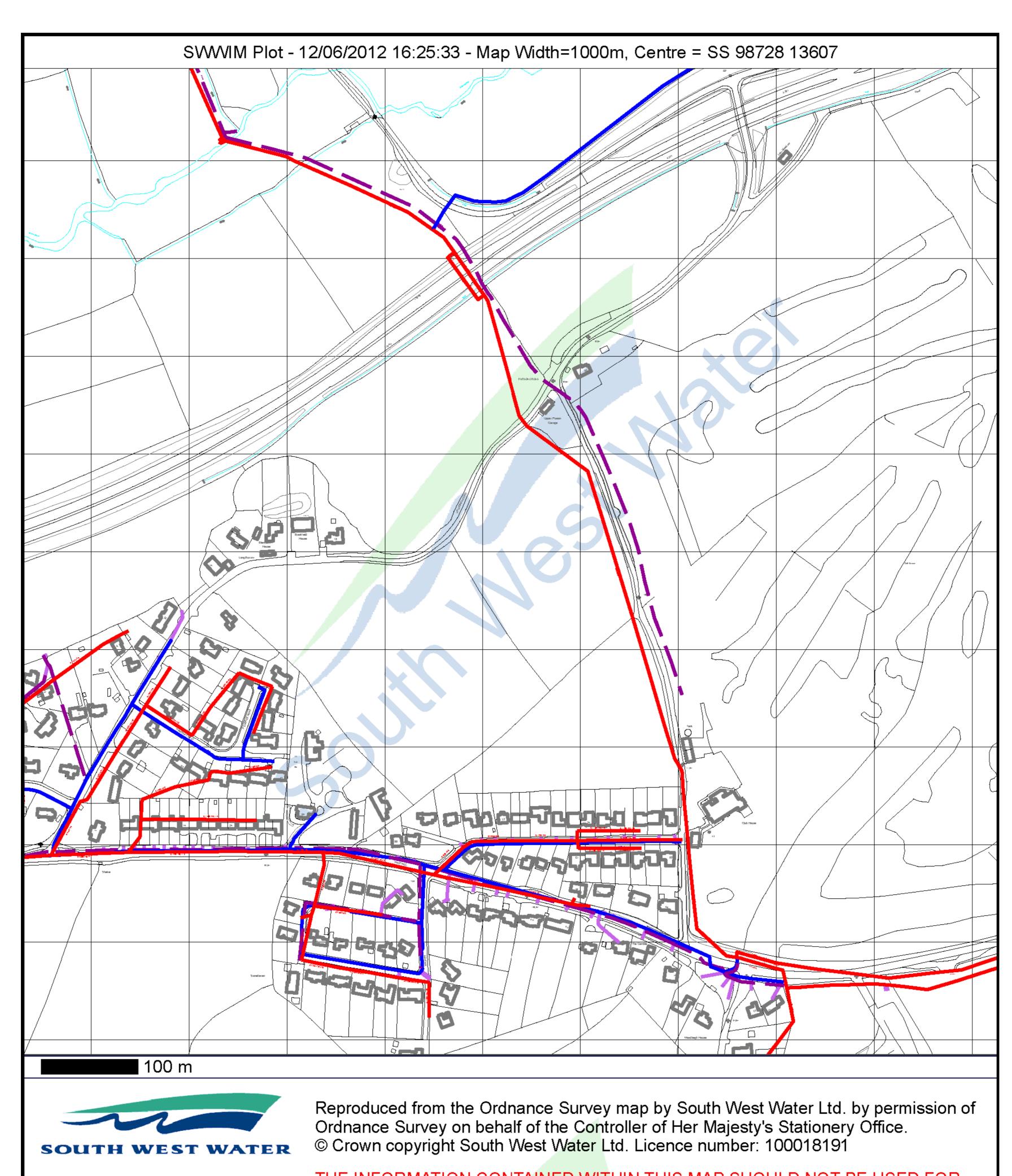
- 1) What water supply your existing network can deliver without any reinforcement improvements, just new pipes laid to supply (no heavy users assumed at present).
- 2) Foul sewerage how many units can the WWTW and pipe work between site and works take without improvement?
- 3) Then an idea of further studies SWW will need to undertake (incl costs) to assess the impact of the development on the existing foul network.
- 4) Surface water we can use SUDS and balance most of the runoff and achieve connections to watercourses etc.

If you want to clarify anything then please let me know or I am happy to meet up if it helps.

Regards Nigel

Please note change of address below

Nigel Smith Robson Liddle Ltd





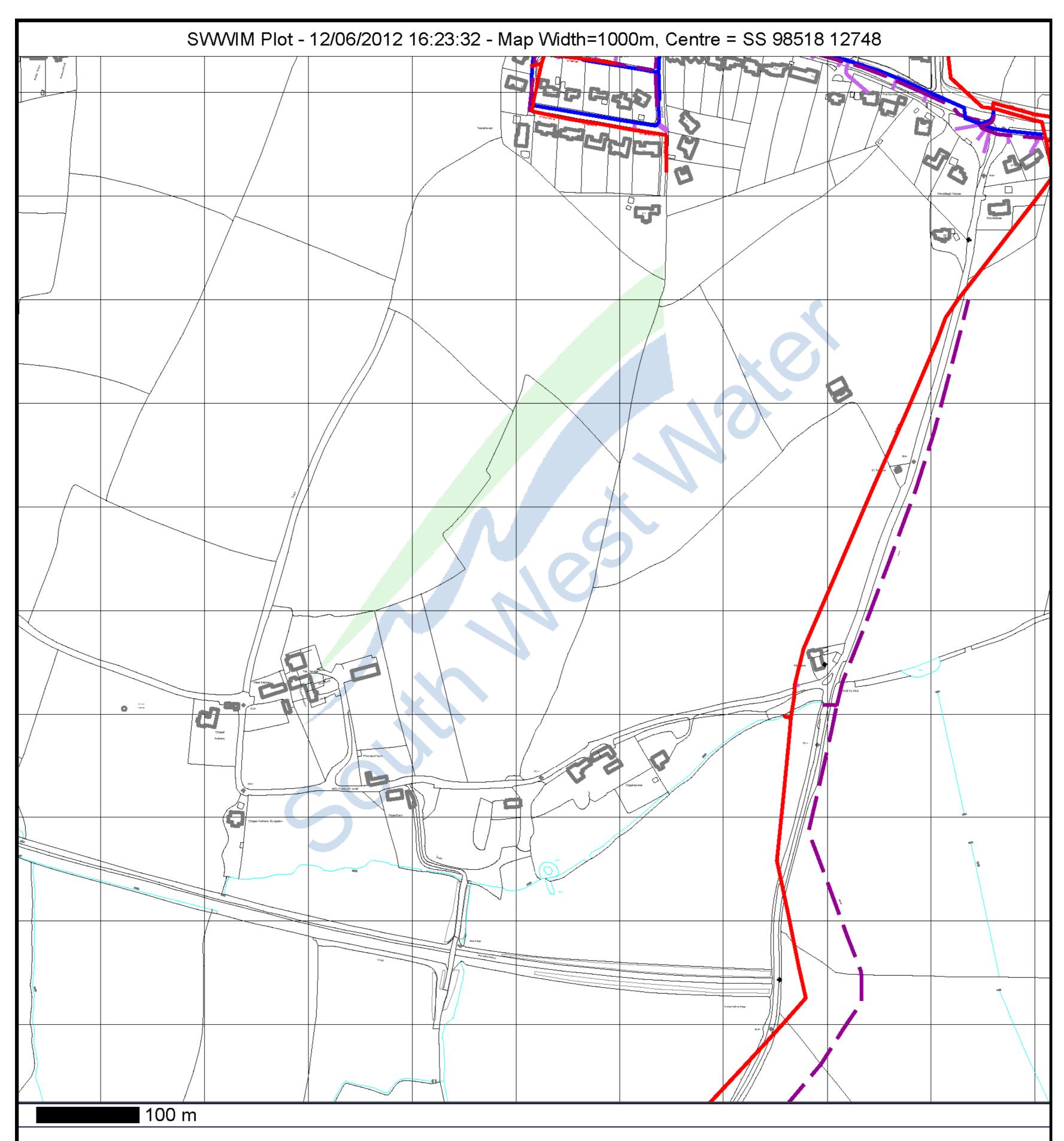
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PLEASE REFER TO WATER AND SEWER LEGENDS FOR CONFIRMATION OF ASSET DETAILS.

THIS PLAN MUST NOT BE USED AS PART OF A CONVEYANCING DOCUMENT FOR PROPERTY PURCHASES.

The position & depth of apparatus and other information indicated on this map is provided as a general guide only and no assurance or warranty as to its correctness or accuracy is given or should be inferred.

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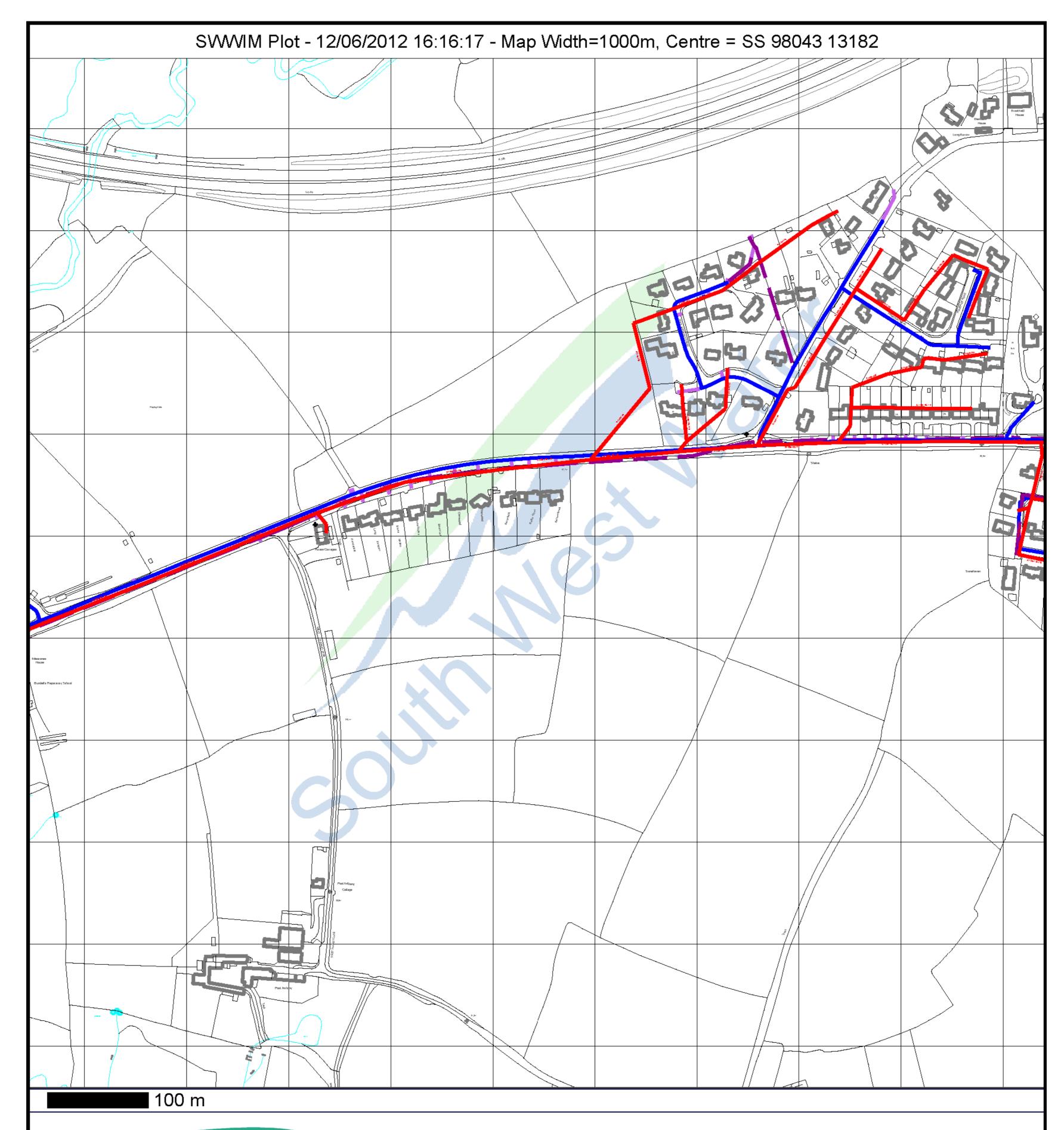
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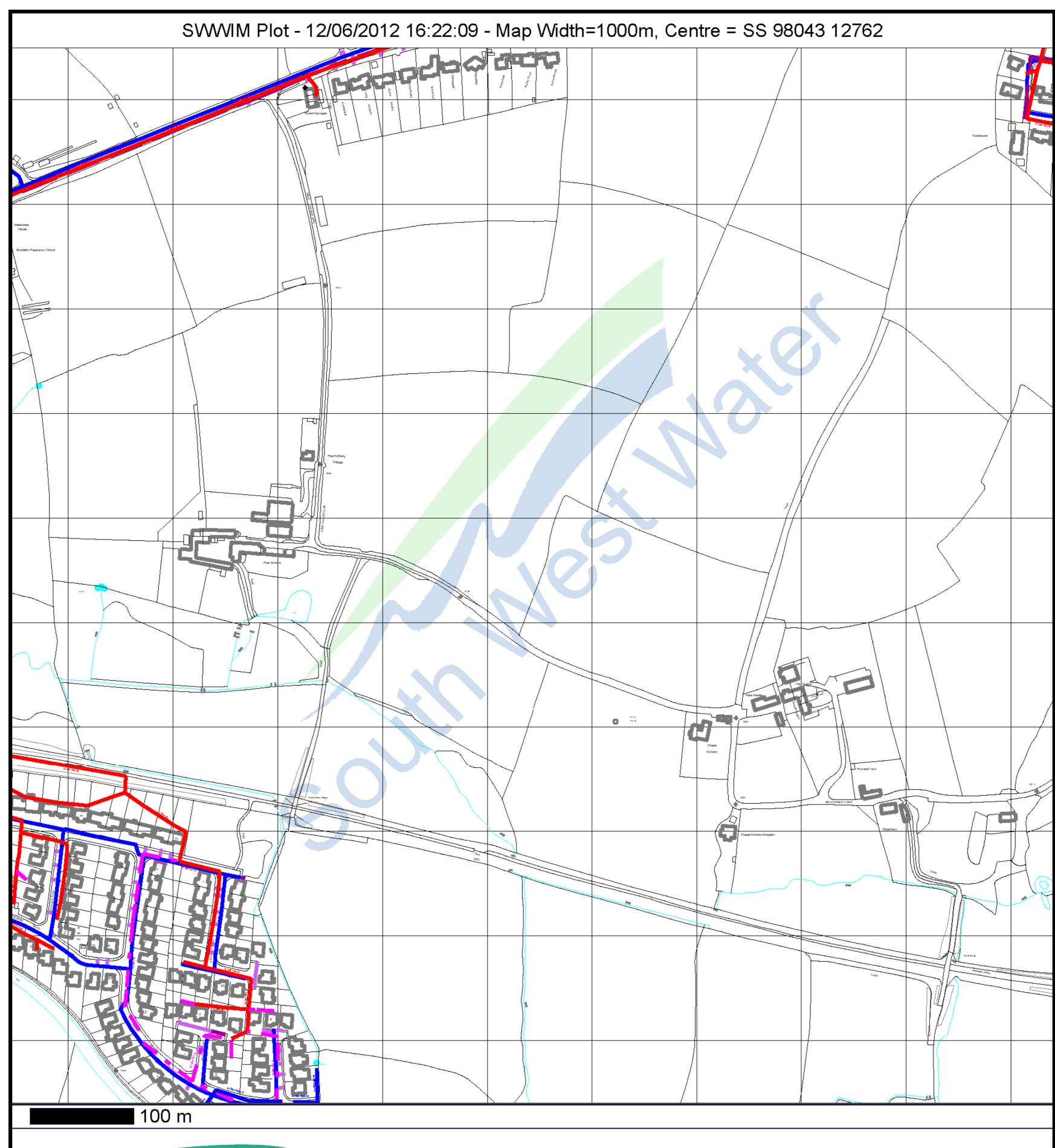
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SOUTH WEST WATER

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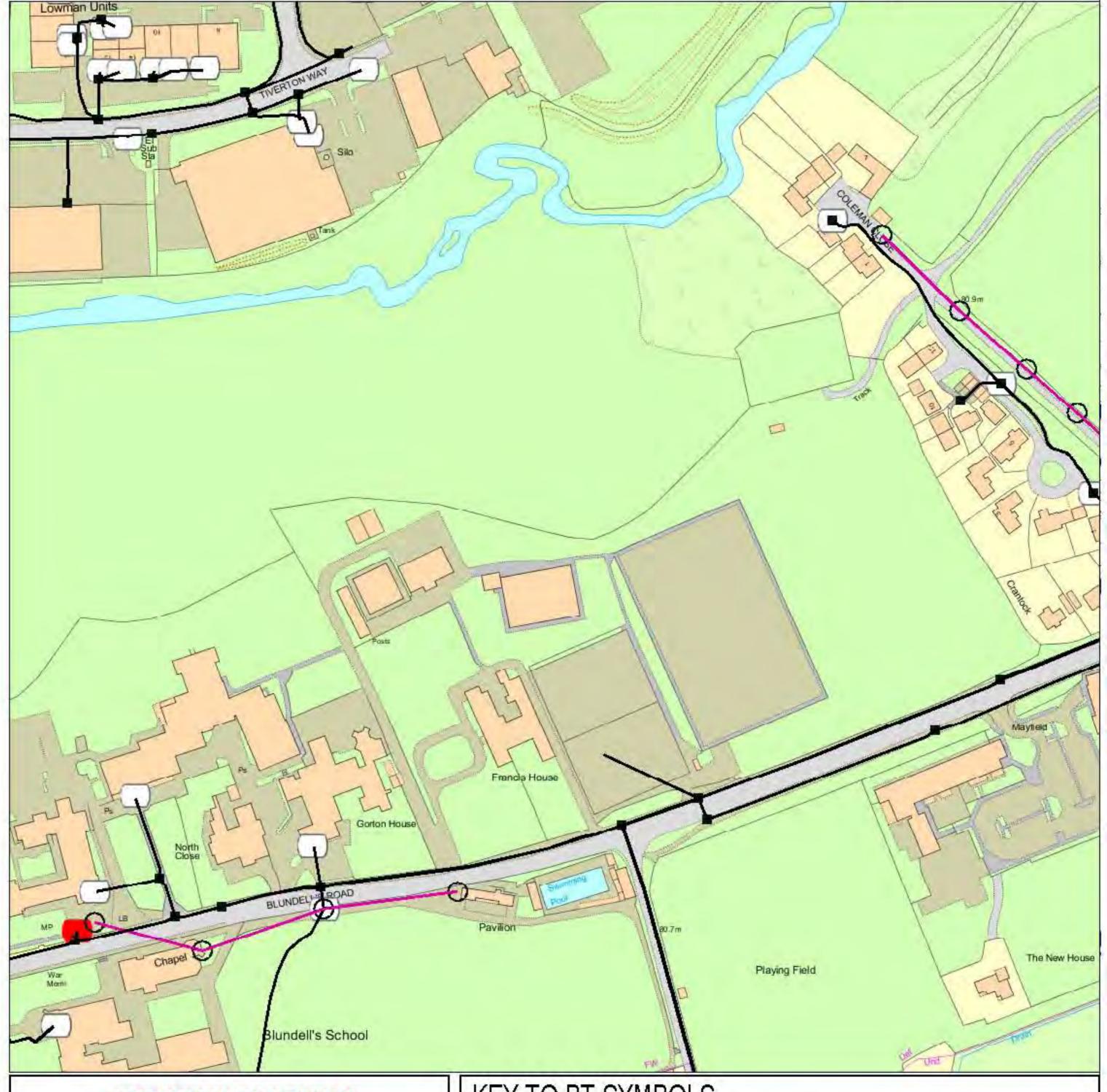
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Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only.

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.

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KEY TO BT SYMBOLS

UNDERGROUND PLANT

OVERHEAD PLANT

JOINT BOX

DISTRIBUTION POINT

MANHOLE

DP BOUNDARY

OTHER BT BOUNDARY

VC DAV

POLE CABINET

☐ BURIED JOINT
J ☐ JOINTING POST

PROPOSED U/G

PROPOSED BOX

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 the time of preparation.



BT Ref: NZR12253B

Map Reference : (centre) SS9723813140
Easting/Northing : (centre) 297238,11314

Issued: 14/01/2013 12:26:07



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KEY TO BT SYMBOLS

UNDERGROUND PLANT

OVERHEAD PLANT

JOINT BOX

DISTRIBUTION POINT

■ 72 MANHOLE

- · - · - DP BOUNDARY

STEEL OTHER BT BOUNDARY

o POLE

□ BURIED JOINT
J □ JOINTING POST

PROPOSED U/G
PROPOSED O/H

PROPOSED BOX

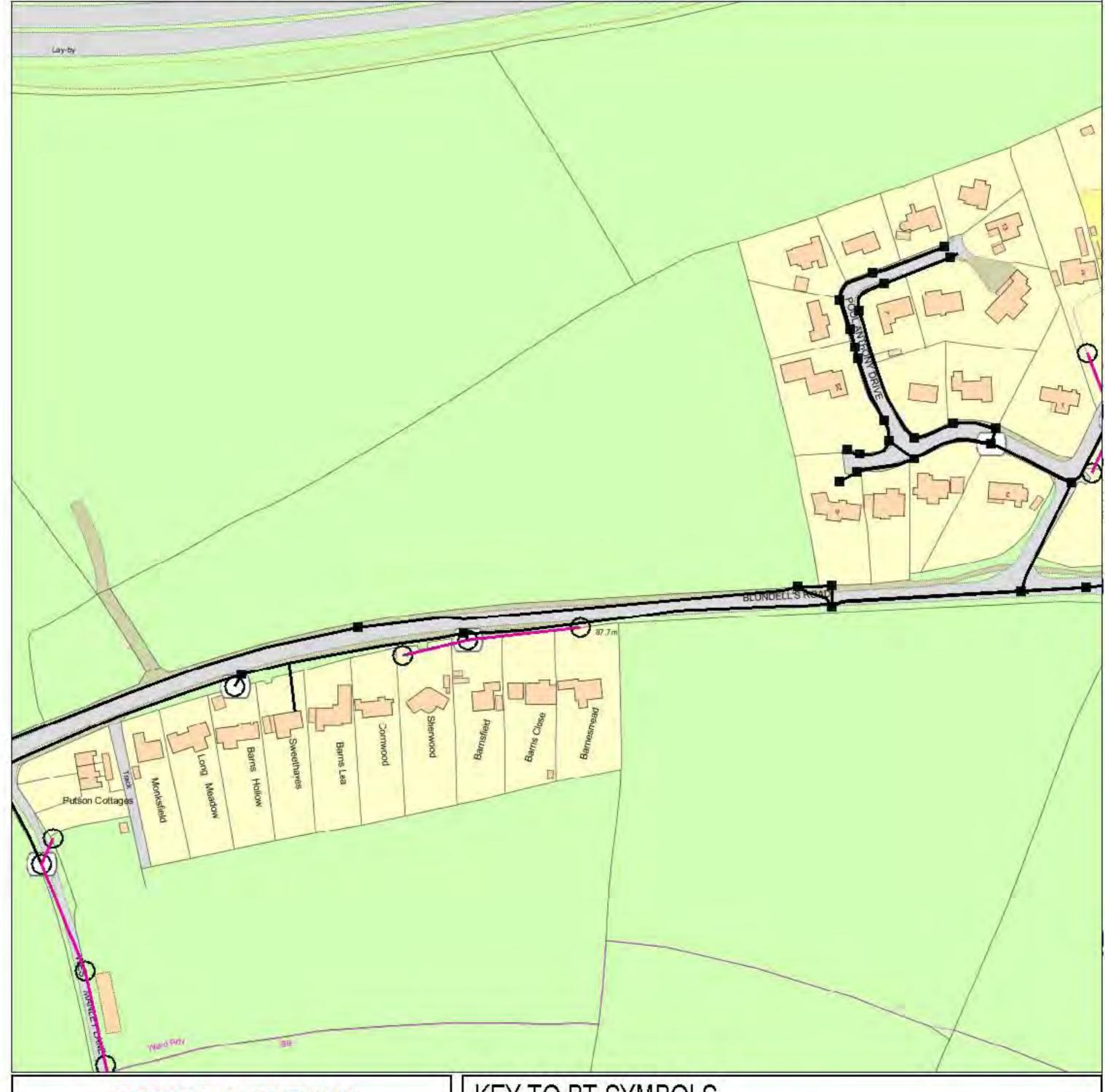
Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.



BT Ref: DEJ12207Q

Map Reference : (centre) SS9764313318 Easting/Northing : (centre) 297643,11331

Issued: 14/01/2013 12:20:39



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KEY TO BT SYMBOLS

UNDERGROUND PLANT

OVERHEAD PLANT

JOINT BOX

Signal String Strin

DP BOUNDARY

OTHER BT BOUNDARY

CABINET

BURIED JOINT

JOINTING POST

POLE

PROPOSED U/G

PROPOSED BOX

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 the time of preparation.



BT Ref: QSP122090

Map Reference : (centre) SS9804713311
Easting/Northing : (centre) 298047,11331

Issued: 14/01/2013 12:20:52



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UNDERGROUND PLANT A/C, D/W or W OVERHEAD PLANT JOINT BOX

DISTRIBUTION POINT MANHOLE

DP BOUNDARY OTHER BT BOUNDARY POLE

CABINET **BURIED JOINT**

JOINTING POST

PROPOSED U/G PROPOSED O/H

PROPOSED BOX

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 the time of preparation.

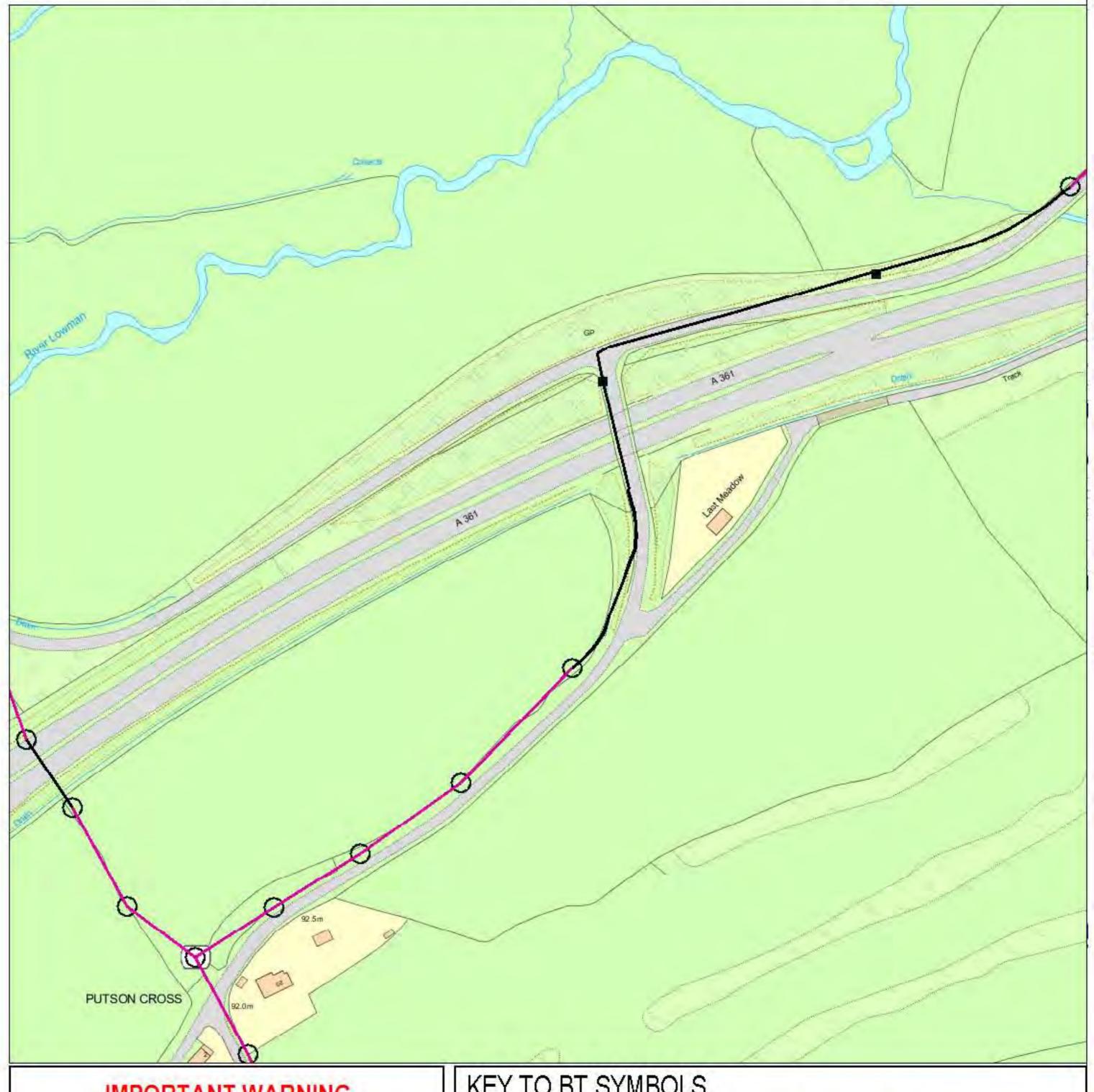


BT Ref: TEC12204Q

Map Reference: (centre) SS9840613405 Easting/Northing: (centre) 298406,113405

Issued: 14/01/2013 12:21:14

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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.

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KEY TO BT SYMBOLS UNDERGROUND PLANT O POLE CABINET O JOINT BOX I BURIED JOINT STORY DISTRIBUTION POINT I JOINTING POST I □ □ □ 12 MANHOLE O POLE CABINET DOINT BOX DISTRIBUTION POINT I PROPOSED U/G PROPOSED O/H

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 the time of preparation.



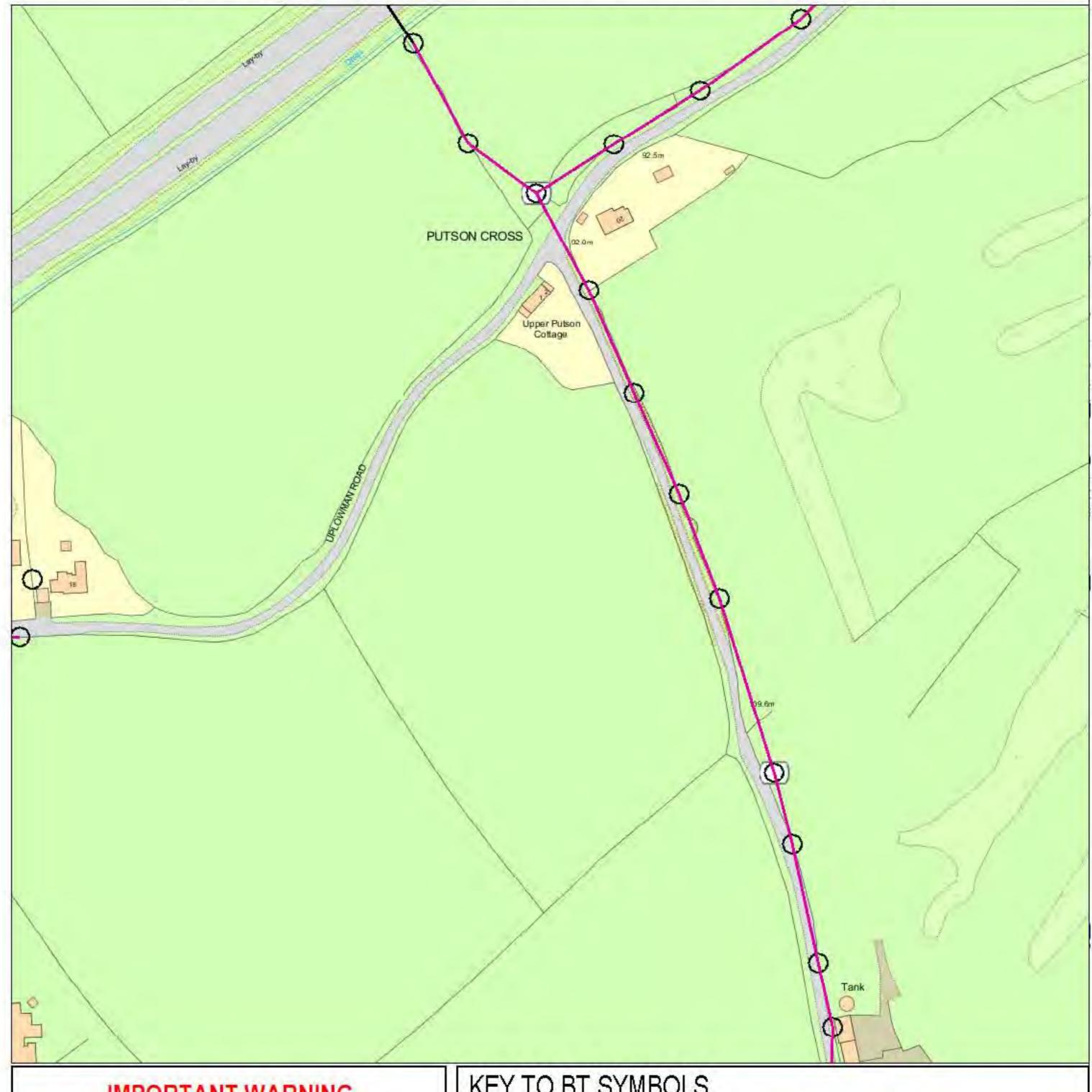
TET OTHER BT BOUNDARY

BT Ref: VQJ12249H

Map Reference : (centre) SS9892913998
Easting/Northing : (centre) 298929,11399

PROPOSED BOX

Issued: 14/01/2013 12:25:00



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KEY TO BT SYMBOLS UNDERGROUND PLANT O POLE CABINET CABINET BURIED JOINT BURIED JOINT DISTRIBUTION POINT JOINTING POST PROPOSED U/G PROPOSED O/H PROPOSED O/H PROPOSED BOX

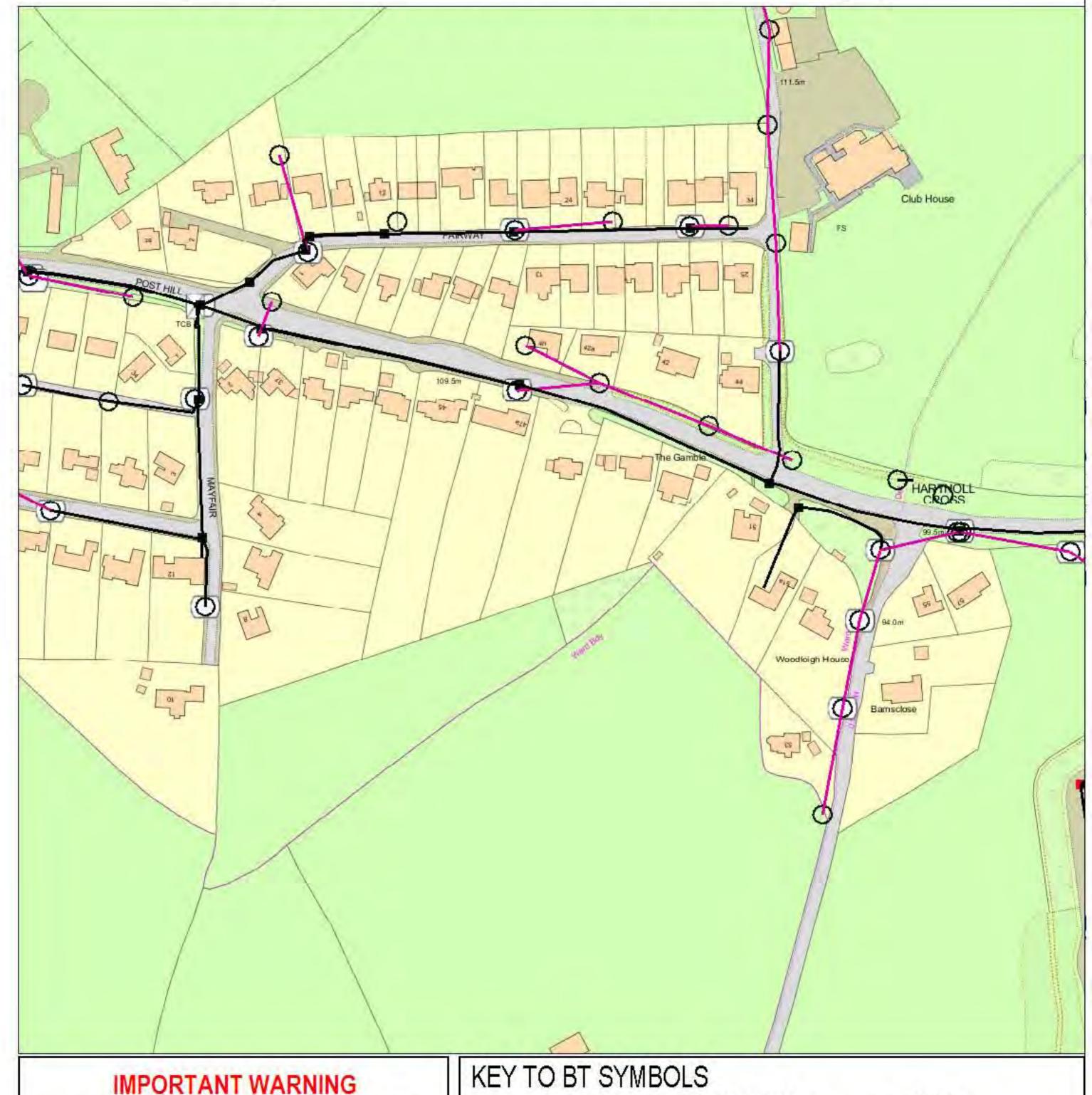
Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.



BT Ref: EKV12214J

Map Reference : (centre) SS9877213637 Easting/Northing : (centre) 298772,11363

Issued: 14/01/2013 12:21:29



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UNDERGROUND PLANT AC DAW OF OVERHEAD PLANT JOINT BOX DISTRIBUTION POINT

MANHOLE

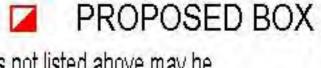
OTHER BT BOUNDARY

DP BOUNDARY

POLE CABINET

BURIED JOINT JOINTING POST

PROPOSED U/G PROPOSED O/H



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 the time of preparation.

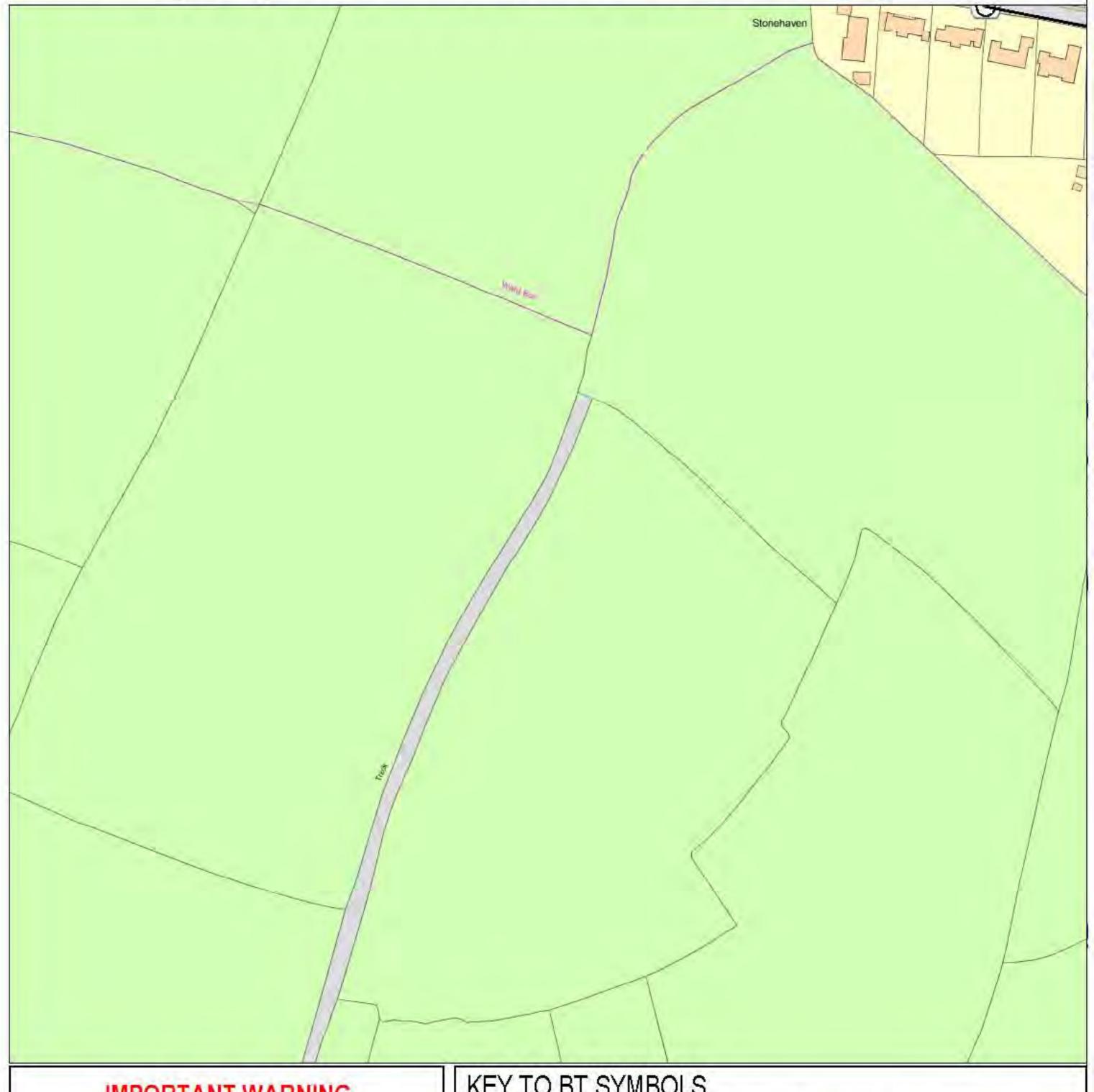


BT Ref: NOI12239M

Map Reference: (centre) SS9880113165 Easting/Northing: (centre) 298801,113169

Issued: 14/01/2013 12:23:44

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KEY TO BT SYMBOLS

UNDERGROUND PLANT AC DW OF OVERHEAD PLANT JOINT BOX

MANHOLE

DISTRIBUTION POINT DP BOUNDARY

OTHER BT BOUNDARY

CABINET **BURIED JOINT**

POLE

JOINTING POST PROPOSED U/G

PROPOSED O/H PROPOSED BOX

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 the time of preparation.

BT Ref: FRN12228X

Map Reference: (centre) SS9836312925 Easting/Northing: (centre) 298363,112925

Issued: 14/01/2013 12:22:21

TWORK HANDLING CENTRE BY EMAIL FOOTNOTE: WARNING IT IS ESSENTIAL THAT YOU CONTACT NATIONAL nnhc@openreach.co.uk BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA

a BT Group business



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KEY TO BT SYMBOLS

UNDERGROUND PLANT

O POLE

OVERHEAD PLANT

DISTRIBUTION POINT

DISTRIBUTION POINT

MANHOLE

PROPOSED U/G

POLE

CABINET

BURIED JOINT

J DINTING POST

PROPOSED U/G

PROPOSED O/H

OTHER BT BOUNDARY PROPOSED BOX

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 the time of preparation.



BT Ref: SPZ12238X

Map Reference: (centre) SS9878112833
Easting/Northing: (centre) 298781,11283

Issued: 14/01/2013 12:23:58



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KEY TO BT SYMBOLS

UNDERGROUND PLANT

OVERHEAD PLANT

JOINT BOX
OR TO DISTRIBUTION POINT
OR 72 MANHOLE

DP BOUNDARY

OTHER BT BOUNDARY

o POLE

☑ CABINET☐ BURIED JOINT

JOINTING POST

PROPOSED U/G
PROPOSED O/H
PROPOSED BOX

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 the time of preparation.



BT Ref: GHI12242N

Map Reference : (centre) SS9860412516 Easting/Northing : (centre) 298604,11251

Issued: 14/01/2013 12:24:21



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UNDERGROUND PLANT POLE AC DAW OF W OVERHEAD PLANT CABINET **BURIED JOINT** JOINT BOX DISTRIBUTION POINT JOINTING POST PROPOSED U/G MANHOLE A/C, D/W or W PROPOSED O/H DP BOUNDARY

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 the time of preparation.



OTHER BT BOUNDARY

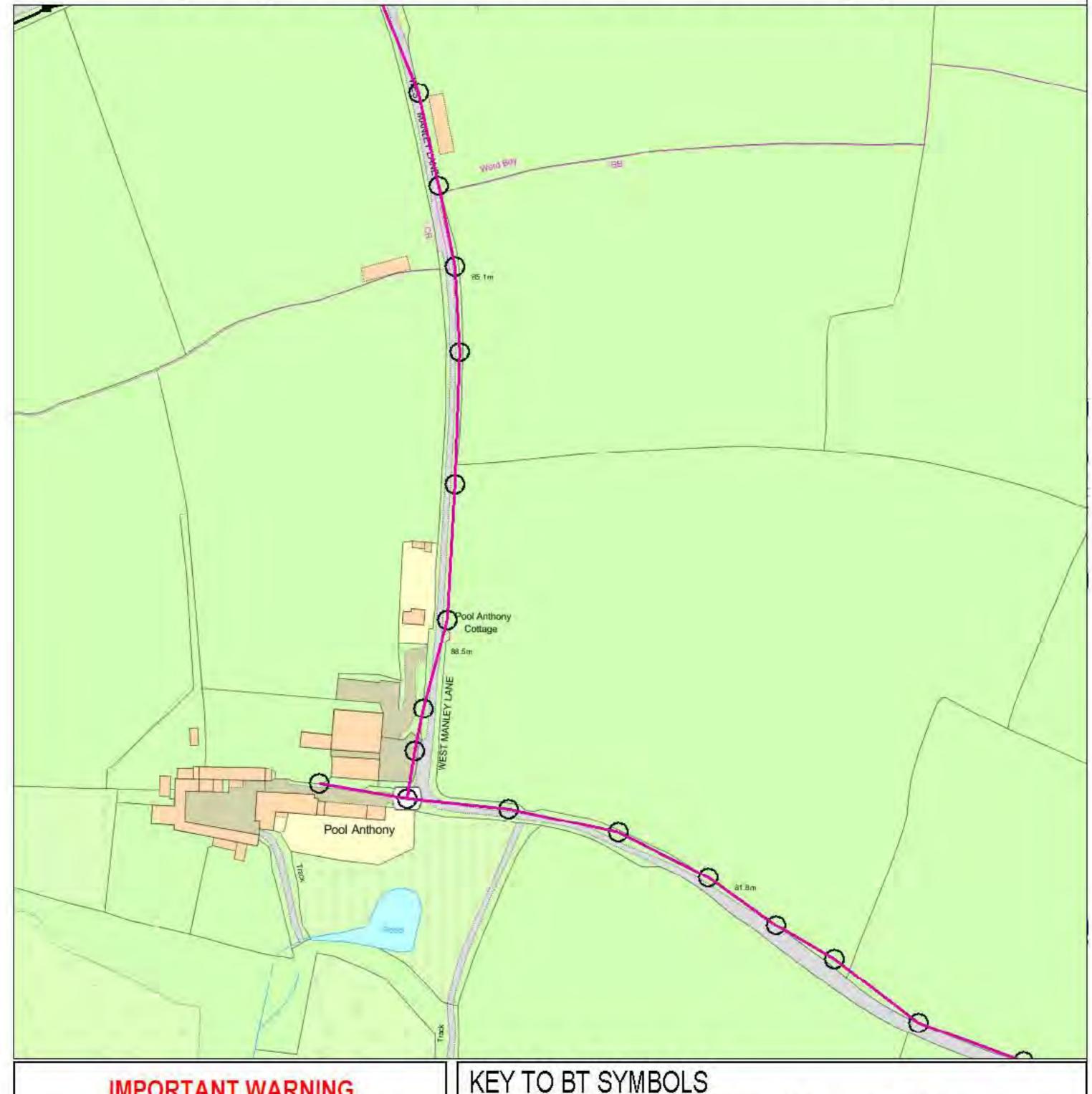
BT Ref: VRE12243C

Map Reference: (centre) SS9812512599 Easting/Northing: (centre) 298125,11259

PROPOSED BOX

Issued: 14/01/2013 12:24:36

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UNDERGROUND PLANT AC DW OF OVERHEAD PLANT JOINT BOX

POLE CABINET **BURIED JOINT**

DISTRIBUTION POINT MANHOLE DP BOUNDARY

PROPOSED U/G PROPOSED O/H

JOINTING POST

OTHER BT BOUNDARY



PROPOSED BOX

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 the time of preparation.

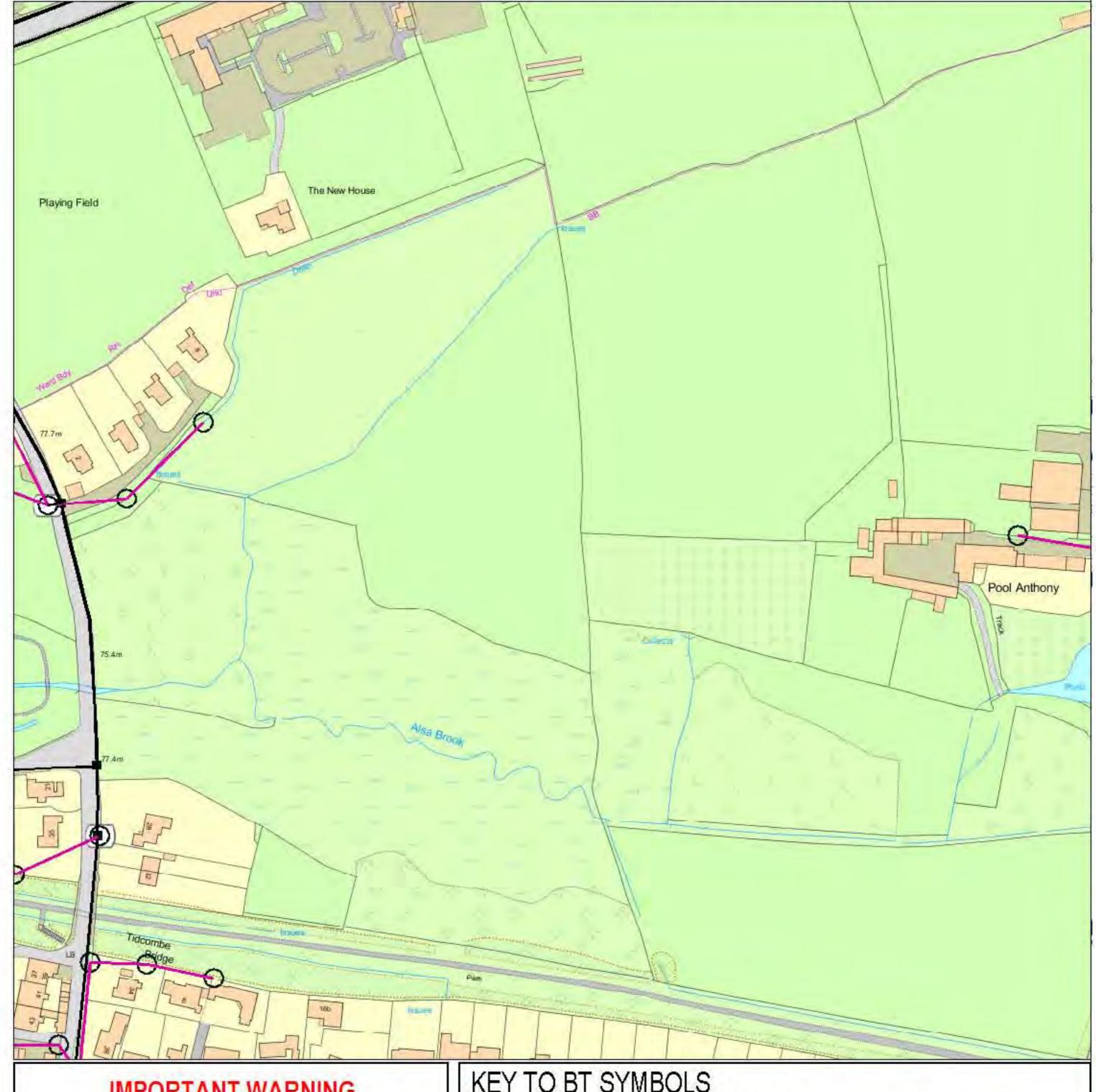


BT Ref: ANT12211R

Map Reference: (centre) SS9789212900 Easting/Northing: (centre) 297892,11290

Issued: 14/01/2013 12:22:05

ETWORK HANDLING CENTRE BY EMAIL FOOTNOTE: WARNING IT IS ESSENTIAL THAT YOU CONTACT NATIONAL nnhc@openreach.co.uk BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA



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at various depths and may deviate from the marked route.

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KEY TO BT SYMBOLS

UNDERGROUND PLANT OVERHEAD PLANT JOINT BOX

DISTRIBUTION POINT MANHOLE

DP BOUNDARY OTHER BT BOUNDARY POLE

CABINET **BURIED JOINT**

JOINTING POST PROPOSED U/G

PROPOSED O/H A/C, D/W or W PROPOSED BOX

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 the time of preparation.



BT Ref: YAG12211V

Map Reference: (centre) SS9756812783 Easting/Northing: (centre) 297568,11278

Issued: 14/01/2013 12:21:32

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nnhc@openreach.co.uk BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA