Oxford University Development

Begbroke Innovation District

Utilities Strategy





BURO HAPPOLD

Begbroke Innovation District

Utility Strategy Report

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Glossary

Term	Definition
BID	Begbroke Innovation District
BSP	Begbroke Science Park
HV	High Voltage
LV	Low Voltage
OUD	Oxford University Developments
POC	Point of Connection
PE	Polyethylene Pipe
SGN	Scotia Gas Networks
SSE	Scottish and Southern Energy
TW	Thames Water

1 Introduction

1.1 Scope

This utility strategy document has been prepared by Buro Happold on behalf of Oxford University Developments Ltd ('the Applicant') in support of a submission of an outline planning application. The planning application is for the Begbroke Innovation District project. The application Site is located approximately 5 miles northwest of Oxford, in between the villages of Begbroke, Kidlington and Yarnton. The total site area is approximately 170ha.

The purpose of this utilities strategy is to set out the existing utilities services that service the Site and assess the potential impacts of the proposed development on the wider network, including the provision of additional services that may be required to deliver the proposed development. In developing the utilities strategy for the project, BH has sought to engage with relevant providers early on to allow early planning, co-ordination, and procurement of infrastructure.

The objective of the report is to consider the following elements:

- The capacity and location of the existing utilities services within and adjacent to the Site;
- The ability of existing utilities services infrastructure within and adjacent to the Site to accommodate anticipated demands arising from the proposed development; and
- The anticipated new utilities services that may be required, including potential diversions and disconnections to the existing network to accommodate the proposed development.

The report sets out the following:

- Section 3 Existing Utilities Services: A summary of the existing utility constraints within the Site.
- Section 4 Utility Demands: A summary of the likely load demands and benchmarks, which would inform utility reinforcement, new connections, and utility distribution proposals.
- Section 5 Utility Diversions and Disconnections: Details of the diversions and disconnections likely to be required to deliver the proposed development.
- Section 6 Utility Reinforcement: Details of the reinforcements that have been proposed by the Statutory Undertakers and suggests where further investigation is required with the utility providers.
- Section 7 Utilities Distribution: Sets out a framework for future design of the utility distribution and drainage networks to support the proposed development.

1.2 Methodology

The process of utility assessment is described in Figure 1-1.

In accordance with the methodology, utility demands for the proposed development have been calculated for power, water and telecoms. Utility service providers have been approached and have carried out their assessments in order to identify the impacts of the proposed development, identify connection points and any required utility and infrastructure upgrades.

Begbroke Innovation District

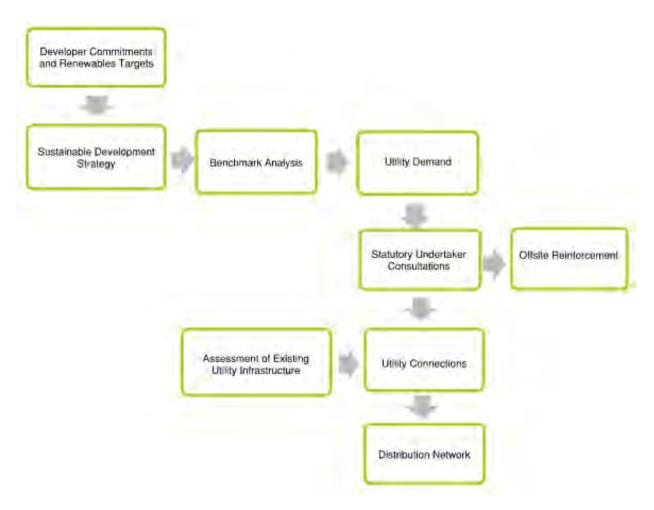


Figure 1—1 Utility Assessment Methodology

1.3 Existing Information

Existing utility information was obtained by Buro Happold through 2022.

All statutory authorities were engaged by Buro Happold to determine existing capacities and points of utility connections.

Additionally, OUD have provided the existing private utility information compiled in Appendix D, as shown in the Existing Utility Services section of this report.

1.4 Limitations

All relevant statutory authorities for the Site and the surrounding area were contacted by Buro Happold. The utilities strategy is based on their responses. At this stage, the proposed approach to the reinforcement proposals and point of connections are only indicative and could change once a formal offer is requested from the statutory authorities.

2 Site Location and Proposed Development

2.1 Proposed Development Description

The Applicant is seeking outline planning permission for a phased, mixed-use development ('the proposed development') which would provide up to 155,000 square metres ('sqm') gross external area ('GEA') of new faculty, and research and development space associated with the expansion of the existing Begbroke Science Park; up to 215,000sqm GEA of residential floorspace that would deliver apartments, communal and sharer accommodation and traditional houses; and, associated amenity, education and community uses. The precise number of homes delivered on the Site will be determined through subsequent, detailed applications. For the purposes of this assessment, it has been assumed that the 215,000sqm GEA of residential floorspace would equate to 1,800 new homes.

The masterplan area aligns with strategic land allocation 'PR8' within Cherwell Council's local plan. The illustrative masterplan is shown in Figure 2—1.



Figure 2—1 Illustrative Masterplan Layout

2.2 Proposed Development Location

The Site is bound by the A44 Woodstock Road to the west, Rowel Brook to the north and Oxford Canal to the east. The Cherwell Valley railway line intersects the Site from north to south, in the east of the Site. Oxford Airport is located to the north of the Site.

The Site mainly comprises open greenfield land used for arable farming, with Begbroke Science Park (BSP) located at the centre. Rushy Meadows SSSI is situated adjacent to the north-eastern boundary of the Site, adjacent to the Oxford Canal.

Access to BSP is provided via the Begbroke Hill road connecting with the A44 in the west. Two key roads intersect the Site, providing east/west access, Begbroke Hill and Sandy Lane. Sandy Lane crosses both the Cherwell Valley railway line (via level crossing) and Oxford Canal (via bridge) on its route toward Kidlington.

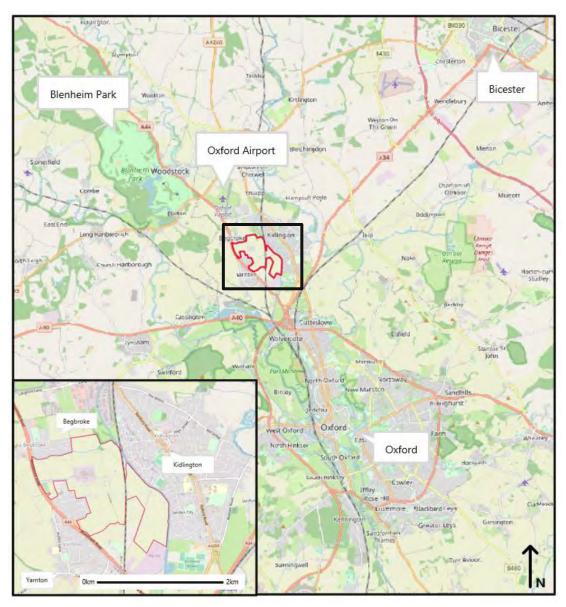


Figure 2—2 Site Location and Boundary, January 2023

3 Existing Utility Services

3.1 Introduction

An initial overview of existing utilities services is provided within the Stage 1 Report. Utilities providers have been consulted to provide records of their existing facilities within the Site and surrounding area. A detailed survey of existing utility locations and levels, requiring ground penetrating radar surveys, will be conducted as the design develops.

Asset plans indicate surface water, potable water, sewerage, gas, electric and telecommunications services within the Site area, primarily associated with development in Yarnton and the Begbroke Science Park.

A review of utilities services and proposed utilities strategy is provided in Chapter 10.

A utility search has been carried out by Buro Happold through 2019 / 2020. The impact of the proposed development on the utility networks in the vicinity is evaluated below in Table 4-1.

Table 3-1 Utilities impacted by the Proposed Development

Company	Utility Type	Impacted by development
SSE	Electricity	✓
SGN	Gas	✓
Thames Water	Potable Water	✓
Openreach	Telecom	✓

3.2 Electricity - Existing

The existing electricity network is owned and operated by SSE. There are multiple overhead power lines both 33kv and 11kv crossing the Site. At this stage a conservative assumption has been made that all overhead power lines crossing the Site will require diversion underground. Details of the existing assets are shown below in Figure 3—1. The proposed diversion of existing SSE assets and electrical distribution networks within the Site are detailed in section 5.1 and 7.1 of this report respectively.



Figure 3—1 Existing Electrical Infrastructure

3.3 Gas - Existing

The existing gas network is owned and operated by SGN. The Groundwise utility record report (Appendix A) shows an existing medium pressure gas main that belongs to SGN crossing from Sandy Lane to the Begbroke Science Park. No data of the depth and level of the existing main is available at this stage. Conservatively, it is assumed that this main will need to be diverted to allow the construction of any proposed building foundations unincumbered. The existing gas mains within and surrounding the Site are shown below in Figure 3-2.



Figure 3-2 Existing gas network

3.4 Potable Water - Existing

Potable water is provided by Thames Water (TW). Their 10" trunk main is located within the A44 Woodstock Road right of way. There are TW potable water assets known to be within the Site, in the form of a 150mm main providing water to the residential properties on Sandy Lane. The existing potable water assets surrounding the Site are shown below in Figure 3-3.



Figure 3-3 Existing potable water network

3.5 Telecommunications - Existing

Openreach own existing telecommunications infrastructure that is present along Sandy Lane and serves local residential properties and the Begbroke Science Park. Figure 3—4 below shows the existing telecom assets within the Site. At this stage it is not proposed that diversion of the existing telecommunications assets will be required.



Figure 3—4 Existing Openreach Network

4 Utilities Infrastructure Demand

4.1 Utility Benchmarks

Utility loads have been calculated by Buro Happold. Anticipated loads are based on the following benchmarks in the table below:

Table 4—1 Utility Demand Benchmarks

	Residential Demand	Retail Demand	Faculty Demand	Primary School Demand	Secondary School Demand	Public Realm, Community Use Demand
Power	80W/m ²	62W/m ²	62W/m ²	62W/m ²	62W/m ²	NA
Heating	20W/m ²	56W/m ²	56W/m ²	80W/m ²	80W/m ²	NA
Cooling	NA	70W/m ²	70W/m ²	NA	NA	NA
EV Charging	1106 Charging Points			538 Charging Points		
Potable water	80l/person/day	45l/person/day	20l/person/day	15I/person/day	20I/person/day	5l/person/day

4.2 Anticipated Utility Loads

The anticipated loads for each utility calculated based on above benchmarks is summarised in the table below, with further detail in the following sections.

Table 4—2 Utility Demand Summary

Type of Utility	Provider	Anticipated Load
Electricity	UKPN	21.6mVA
Potable Water	Thames Water	30l/s
Telecoms	Openreach	1800 units & Commercial/Faculty

4.3 Electricity – Utility Demand Breakdown

4.3.1 Heating

The baseline site-wide heat demand was determined by applying heat consumption benchmarks to the area schedule. Benchmarks were selected to represent new-build developments, demonstrating slight improvements on the standards.

Table 4—3 Heating benchmark summary, summarises the benchmarks used to determine the heat demand of each of the Site's typologies. The benchmarks have been adjusted based on the following assumptions:

 Annual space heating benchmarks have a degree-day adjustment of 88% applied; this reflects the higher annual temperature in Oxford relative to the UK average and therefore a comparatively lower space heating requirement (note the annual demand benchmarks consist of both space heating and domestic hot water components) • The baseline peak demand benchmarks have been improved by a 20% factor (BH rule of thumb) to represent the improved energy/fabric efficiencies of new builds compared to the existing building stock

Table 4—3 Heating benchmark summary

Building typology	Annual demand benchmark (kWh/m²/year)	Source	Peak demand benchmark (W/m²)	Source
Residential	48	Data from district heating operators, weighted between houses and apartments	SH: 20, DHW: 25kW/dwelling	SH: SAP Part L 2013 (20% improvement factor), DHW: typical 25kW combi boiler
Lab-enabled	254	TM46 with NEED improvement on SH	80	BSFRIA Blue Book 2022 (20% improvement factor)
Mid-Tech	36	Assumed analogous to office	56	Assumed analogous to office
Office	36	Study of DECs for sustainable office buildings constructed to modern Building Regulations	56	BSFRIA Blue Book 2022 (20% improvement factor)
Amenity	54	DHW: CIBSE Guide F, SH: TM46 with NEED reduction	80	BSFRIA Blue Book 2022 (20% improvement factor)

Utilising these benchmarks, the sitewide heat demand presented in Table 4—4, with the following assumptions applied:

- Annual demand includes secondary network losses of 876kWh/dwelling for residential (CP1.2) and 15% nonresidential (BH assumption)
- Peak demand includes secondary network losses 100W/ residential dwelling (CP1.2) and 15% non-residential
- Diversity factors have been applied to the peak demand:
 - Residential SH 0.62 + 0.38/non-residential units (CP1.2)
 - o Residential DHW diversified in accordance with BE EN 806 diversity curve (CP1.2)
 - Non-residential assumed 80% diversity factor on the peak demands from previous BH experience, as viewing the demand from a sitewide infrastructure perspective

Table 4—4 Heating demand summary

Building typology	Annual demand (MWh/year)	% of total	Peak demand (kW)	% of total
Residential	9,530	39%	4,220	33%
Lab-enabled	10,100	41%	2,550	20%
Mid-Tech	580	2%	720	6%
Office	3,880	16%	4,830	38%
Amenity	330	1%	390	3%
Total	24,430		12,710	

4.3.2 Cooling

A similar process was used to determine the baseline sitewide cooling demands. The benchmarks are summarised in Table 4—5. Corresponding assumptions to the heat benchmarking process have been utilised:

 A 112% degree-day adjustment has been applied to the annual space cooling benchmarks due to the relative warmth of Oxfordshire compared to the UK average The baseline peak demand benchmarks have been improved by a 20% factor to reflect the superior energy/fabric efficiencies of new builds compared to the existing building stock.

Table 4—5 Cooling benchmark summary

Building typology	Annual demand benchmark (kWh/m²/year)	Source	Peak demand benchmark (W/m²)	Source
Residential	0	No domestic cooling	0	No domestic cooling
Lab-enabled	242	BH previous experience	150	BH previous experience
Mid-Tech	39	Assumed analogous to Office	70	Assumed analogous to office
Office	39	CIBSE Guide F (2021), calculation below from peak	70	BSRIA Rule of Thumb 2011(20% improvement factor)
Amenity	88	CIBSE Guide F (2021), calculation below from peak	112	BSRIA Rule of Thumb 2011(20% improvement factor)

Utilising these benchmarks, the Site's cooling demands were calculated and summarised in Table 4—6, with the following assumptions applied:

- No secondary losses due to low ΔT between the cooling system and ambient temperature
- Assumed 80% non-residential diversity on peaks as viewing the demand from a sitewide infrastructure perspective

Table 4—6 Cooling demand summary

Building typology	Annual demand (MWh/year)	% of total	Peak demand (kW)	% of total
Residential	0	0%	0	0%
Lab-enabled	9,380	64%	4,150	39%
Mid-Tech	610	4%	780	7%
Office	4,100	28%	5,220	49%
Amenity	530	4%	480	5%
Total	14,610		10,630	

4.3.3 Small Power

The small power demand benchmarks are summarised in Table 4—7. Note that the small power does not include EV charging loads, which are summarised in section 4.3.4 of this report.

A peak power diversity is applied at the building level to each of the typologies, sized from previous Buro Happold experience according to the general use profile and the assumption that not all users within a building will be utilising peak power simultaneously. This diversity is usually reduced in buildings which are likely to have high point loads, such as those that may be seen in a lab, and higher in buildings with a larger number of rooms and lower rated electrical demands.

Table 4—7 Small power benchmark summary

Building typology	Annual demand benchmark (kWh/m²/year)	Source	Peak demand benchmark (W/m²)	Peak power diversity at building level (%)	Source
Residential	40	Previous BH experience	7	60%	BSRIA Rules of Thumb 2011, excl. cooling
Lab-enabled	262	Previous BH experience	113	100%	Previous BH experience
Mid-Tech	111	Assumed analogous to Office	29	80%	Assumed analogous to Office
Office	111	BEES	29	80%	BSRIA Rules of Thumb 2011, excl. cooling (20% IF)
Amenity	155	BEES	73	90%	BSRIA Rules of Thumb 2011, excl. cooling (20% IF)

These benchmarks were applied to the GIAs identified in the area schedule to determine the baseline small power demands shown in Table 4—8.

The peak demand includes both the building level diversities and an assumed 80% diversity at the 11kV feeder level. This assumed diversity accounts for the fact that the typology peaks are unlikely to occur simultaneously.

Table 4—8 Power demand summary

Building typology	Annual demand (MWh/year)	% of total	Peak demand (kW)	% of total
Residential	6,680	23%	650	10%
Lab-enabled	9,060	32%	3,560	52%
Mid-Tech	1,550	5%	280	4%
Office	10,410	36%	1,910	29%
Amenity	830	3%	310	5%
Total	28,530		5,950	

4.3.4 EV Charging Strategy

Using the minimum thresholds defined alongside the generated demand profiles, the quantity of EV chargers was determined as summarised below, along with the consequent EV peak power demand.

The following assumptions were made:

- Chargers will either be rated 7kW (slow), 22kW (fast) or 55kW (rapid)
- The distribution of slow and fast chargers is dependent on the needs of the users, in particular the typical journey distance and charging time. As most residential users will plug in their car upon returning in the evening and leave it on charge until the morning (or at least a few hours), the 7kW slow charger should be suitable in all domestic parking spaces. For commercial users, the majority will arrive at the workplace having travelled from a nearby area (most likely Oxford City) and leave their vehicle on charge until the end of the working day. In this case, the 7kW slow chargers are appropriate. However, a small proportion of visitors will frequent the Site having travelled from much further, possibly for meetings/conferences or any number of

- other reasons. These visitors may also need to make a long return journey in a short turnaround. A number of 22kW fast chargers should be spread around the Site to the accommodate this. It has been assumed that a 5% split of commercial chargers is an appropriate proportion. It has been deemed unnecessary to install any 50kW rapid chargers judging by the expected site utility.
- A natural diversity of 20% has been applied the residential peak this reflects that as the number of
 connections increases the likelihood of simultaneous peak demands on each charger decreases, and is a
 number typical of DNO standards. A slightly lower natural diversity of 25% is applied to the commercial peak,
 as fast chargers tend to have less diversity.
- It has been assumed there is no forced diversity applied to the demand this could be considered later through current clamping or a smart EV charge management scheme.

Table 4—	-9 EV	charger	strategy	summary

Typology	Total spaces	% Spaces with charger	Number of chargers	Charger rating	Natural diversity	Diversified load	Total sitewide load
Commercial	2153	25%	526	7kW: 511 22kW: 27	25%	1,040kW	2,050kW
Residential	1200	92% (100% allocated and 25% non- allocated)	1106	7kW: 1106	20%	1,550kW	

• The EV charging annual demand can be determined based on the strategy summarised in

Table 4—9. This requires several assumptions:

- An average journey length of 15 miles/day is assumed. This lies within the typical average mileage range, and reflects the ~20km round trip distance to Oxford, which is anticipated to be the most common destination/origin for car journeys
- It is assumed that EVs are capable of 5km per kWh battery charge
- On the weekends commercial chargers are utilised only a quarter as much as on weekdays (in terms of total load). Residential chargers are utilised the same amount every day
- Fast chargers charge on average 3 times the amount as slow commercial chargers, as they are both utilised by users who need more charge and can be utilised more frequently as cars are plugged in for a shorter space of time

Utilising these assumptions, the annual power demand of the EV charger network can be estimated at 2.77MWh/year.

4.3.5 Energy Demand Summary

Table 4—10 Energy demand summary, summarises the overall baseline load estimate for the sitewide heating, cooling and power. The following should be noted in conjunction with the presented figures:

- Both heating and cooling are assumed to be electrified and driven by air source heat pumps. Conservative
 'worst-case' COPs of 2 and 3 have been assumed for heating and cooling respectively to determine the
 electrical-thermal conversion efficiency.
- The cooling power load has been excluded when calculating the overall peak. This is due to the assumption that when heating is at its peak cooling is negligible and vice versa. As such, only the larger of the two demands will contribute to the overall sitewide peak.
- A power factor of 0.9 has been assumed to convert MW to MVA.

• A 5MW data centre load has been included for this study. This contributes to 48% of the total annual load and is included to provide the client with flexibility to make on its integration in the future.

Table 4—10 Energy demand summary

	Peak demand (MW)	Annual demand (GWh/a)	Power demand (MVA)	Annual power demand (GWh _{ekec} /a)
Heating	12.7	24.4	7.1	12.2
Cooling	10.6	14.6	3.9	4.9
Power	6.0	28.5	6.6	28.5
Data Centre	5.0	43.8	5.6	43.8
EV Charging	2.1	2.8	2.3	2.8
Total			21.6 MVA	92.2 GWh/a

4.4 Potable Water - Utility Demand Breakdown

A preliminary potable water load estimation exercise has been carried out to inform discussions with Thames Water. The benchmarks and resultant loads from the proposed development are summarised below.

Table 4—11 Potable Water Demand by Typology

Typology	Units (No.) / Area (m2)	Occupancy Factor BSRIA 5th Edition	People	Benchmark (I/pers/day) BSRIA 5th Edition - Table 22	Annual Average Daily Demand AADD (I/s)	Peaking Factor Twort's Water Supply 7th Edition	Total Peak Hourly Deman d (I/s)	
Residential	1800 No.	3 (per dwelling)	5,400	80	5.00	3.00	15	
Faculty (16% of combined area from use schedule)	24,800 m2	12 (per m2)	2,067	20	0.48	3.00	1.44	
Commercial (84% of combined area from use schedule)	130,200 m2	12 (per m2)	10,850	45	5.65	3.00	16.95	
Primary School 2FE (Pupils)	NA	NA	640	15	0.11	3.00	0.33	
Secondary School 6FE (Pupils)	NA	NA	850	20	0.20	3.00	0.59	
Public Real, Retail & Community Uses	2,000	0.83 (per m2)	2410	5	0.14	3.00	0.42	
		Total Development Potable Water Demand						

5 Utility Infrastructure Diversions

5.1 Electricity – Diversions

As discussed in Section 3.2 of this report there are multiple utility assets crossing the Site. These have been itemised below in Table 5—1 with the proposed routes shown in



Figure 5—1. SSE have been engaged with an application for diversion. Correspondence has been received (Appendix B) confirming the below diversion routes and advising that a formal quote can be expected on the 20th of June 2023.

Table 5—1 Existing Electrical Diversion Schedule.

Existing Service Reference	Type of Service	Underground / Overhead	Assumed Size/No. of Ducts/Pipes	Owner	Approx. Length of Diversion / Abandonment (m)
EHV_001	EHV	ОН	NA	SSEN	125m,1100m
EHV_002	EHV	ОН	NA	SSEN	1450m
HV_003	HV	ОН	NA	SSEN	300m
HV_004	HV	ОН	NA	SSEN	200m
HV_006	HV	ОН	NA	SSEN	1,600m
HV_007	HV	ОН	NA	SSEN	1050m
HV_010	HV	ОН	NA	SSEN	150m

Note that due to the nature of the survey type this list may not be exhaustive.



Figure 5—1 Proposed Electrical Diversion Routes

5.2 Gas – Diversions

SGN have been contacted to commence the diversion process which is ongoing at the time of submission of this report. The proposed route of diversion follows Sandy Lane along the northern side then bends north to connect to the existing main at the BSP. Details of the existing main and proposed diversion route are shown below in Table 5—2 and Figure 5—2.

Table 5—2 Existing Gas Main Diversion Schedule

Existing Service Reference	Type of Service	Assumed Size/No. of Ducts/Pipes	Owner	Approx. Length of Diversion / Abandonment (m)
GAS_003	Medium Pressure Gas	90mm	SGN	400m

Note that due to the nature of the survey type this list may not be exhaustive.



Figure 5—2 Proposed MP Gas Main Diversion Layout

5.3 Potable Water – Diversions

There are no diversions of existing potable water assets deemed necessary by the development.

5.4 Telecommunications – Diversions

There are no diversions of existing telecommunications assets deemed necessary by the development.

6 Utility Infrastructure Reinforcement

6.1 Introduction

Utility service providers have been approached and have carried out assessments in order to identify the impacts of the Proposed Development. The section below summarises the offsite reinforcement requirements.

6.2 Potable Water

Thames Water has confirmed that the existing network has sufficient capacity to serve the proposed development land use. No off-site reinforcement of the local water infrastructure will be required.

6.3 Electricity

It is anticipated that reinforcement works will be required to the power network if works are carried out by SSE. In the budget estimate provided by SSE, Appendix B, it is noted that the fee will be subject to 132KV reinforcement works, that are not included in that estimate.

6.4 Gas

It is anticipated that no reinforcement works will be required to the gas infrastructure.

6.5 Telecom

It is anticipated that no reinforcement works will be required to the telecommunications infrastructure.

7 Utility Distribution

7.1 Electricity - Distribution

A new connection will be required to supply the Site. An initial fee estimate was provided for connection to the Yarnton Sub Station adjacent to the Site across the A44. The fee estimate for this connection was prepared by SSE And approved by OUD with an official quote prepared.

An official quote has been provided by SSE for connection to the Cowley Sub Station, south of Oxford. The quoted fee for connection is £6,274,905.32 (+VAT). The quotation includes the point of connection works and reinforcement works required. The majority of the proposed works are allocated as non-contestable works.

The formal quotation and break down of works provided by SSE is included in Appendix B. With a summary of budget quote for HV supply in table 7—1 below:

Table 7—1 HV Fee Estimate Summary

HV Supplier	Budget quote (£)	Reinforcement	Comments
SSE (Incumbent)	£6,274,905.32 Ex Vat.	Refer to section 6.3	New primary substation required for phased build out.

See below a schematic utility drawing that provides point of connection and proposed HV and LV routes within the development.



Figure 7—1 Proposed HV Layout

7.2 Gas - Distribution

No gas distribution is proposed within the Site.

7.3 Potable Water - Distribution

A new point of connection has been agreed with Thames Water off the A44 at Begbroke Hill (Appendix C). An illustrative distribution network design has been prepared. The figure below, Figure 7—2 is a schematic drawing that shows the point of connection and illustrative potable water network within the Site.



Figure 7—2 Proposed Potable Water Layout

7.4 Telecommunications – Distribution

Openreach will carry out off-site works to bring their supply network to the Site. A point of connection has not been established, as BT will carry out the design work themselves. Please see below, Figure 7—3, an illustrative schematic utility drawing that provides a potential point of connection and layout of comms conduits within the Site.



Figure 7—3 Proposed Telecommunication Layout

Appendix A – Groundwise C2 Existing Asset Report







Groundwise Searches Ltd

Desktop Utility Search Product PAS 128 - Level D Scope

31188FM-GWS **Groundwise Reference**

Site Woodstock Road, Yarnton, Oxfordshire, OX5 1PF

447850,213550 **Easting/Northing Thomas Whiter** Client

Buro Happold Limited Company Oxford, OX5 1PF **Client Reference**

Purchase Order



Fran Margiotta Researcher fmargiotta@groundwise.com Debbie Miller

Quality Check dmiller@groundwise.com

Groundwise Searches Limited Suite 6, Princess Caroline House 1 High Street Southend-on-Sea Essex, SS1 1JE

Telephone 01702 615566 Email mail@groundwise.com Website www.groundwise.com

Registered Office Address: Matrix House, 12-16 Lionel Road Canvey Island, Essex, England, SS8 9DE





Groundwise Searches Ltd

Groundwise Reference 31188FM-GWS

Site Woodstock Road, Yarnton, Oxfordshire, OX5 1PF

Version	Date Issued	Notes	
#1	24/06/2022	First batch of received utility data issued – outstanding results to be sent on receipt	
#2	30/06/2022	Network Rail and Thames Water results added to Report	
#3	08/07/2022	BT and C.A. Telecom-Colt results added to Report	
#4	20/07/2022	Refer to EAN document - Utility Report complete	



Telephone 01702 615566 Email mail@groundwise.com Website www.groundwise.com

Registered Office Address: Matrix House, 12-16 Lionel Road Canvey Island, Essex, England, SS8 9DE





Groundwise Searches Ltd

Groundwise Reference 31188FM-GWS

Site Woodstock Road, Yarnton, Oxfordshire, OX5 1PF

Click on a Data Supplier to view their response

Туре	Data Supplier	Date Sent	Assets in Area
Electricity	SSE	24/06	X
Electricity	Eclipse Power	24/06	
Electricity	Utility Assets Ltd	24/06	
Electricity	Last Mile	24/06	See Result
Gas	SGN	24/06	X
Gas	ESP	24/06	
Mobile Phone Masts	Mast Data	24/06	X
Telecom	ВТ	08/07	X
Telecom	C.A. Telecom - Colt	08/07	
Telecom	CityFibre	24/06	
Telecom	Instalcom Ltd (Lumen Technologies)	24/06	X
Telecom	MBNL	24/06	
Telecom	Sky UK Ltd	24/06	
Telecom	Verizon	24/08	
Telecom	Virgin Media	24/06	X
Telecom	Vodafone	24/06	X
Transport	Network Rail	30/06	X
Various	Energy Assets Group Ltd	No Response	
Various	GTC	24/06	X
Various	HSE – Client should contact HSE direct for further information	24/06	See Result
Various	Leep Utilities	24/06	
Various	LinesearchbeforeUdig	24/06	
Various	SSE Utility Solutions	24/06	x
Water Mains	Thames Water	30/06	X
Sewers	Thames Water	30/06	X
Street Lighting	Oxfordshire Council	24/06	X





Our Ref: 25881010 Your Ref: 31188_002

Friday, 24 June 2022

Joe Shawyer Suite 6 Princess Caroline House 1 High Street Southend on Sea Essex SS1 1JE

Dear Joe Shawyer

SSEN Distribution - Asset Network Plans

We have sent you the plans of our network records within the area requested. You will shortly receive responses each of the following; any High Voltage Mains cables and Low Voltage Mains cables

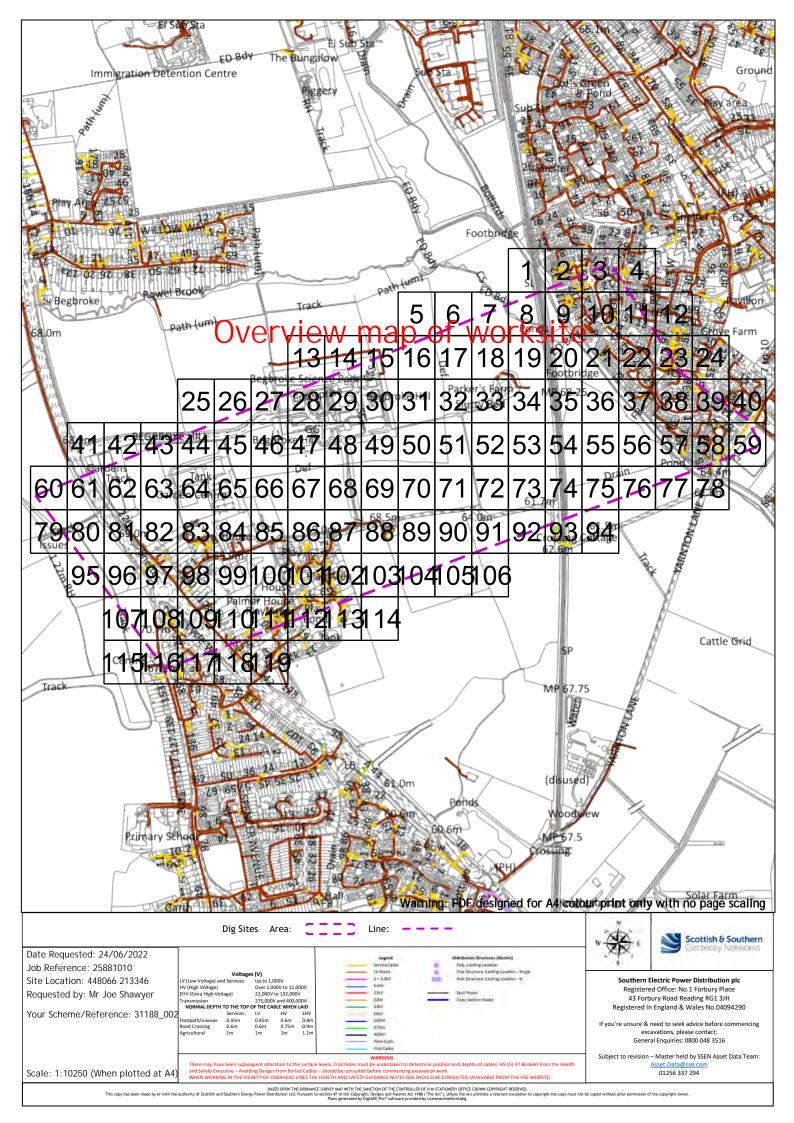
Attached to this email is the 'Guide to Interpreting' which includes the legends for the plans on pages 7-9.

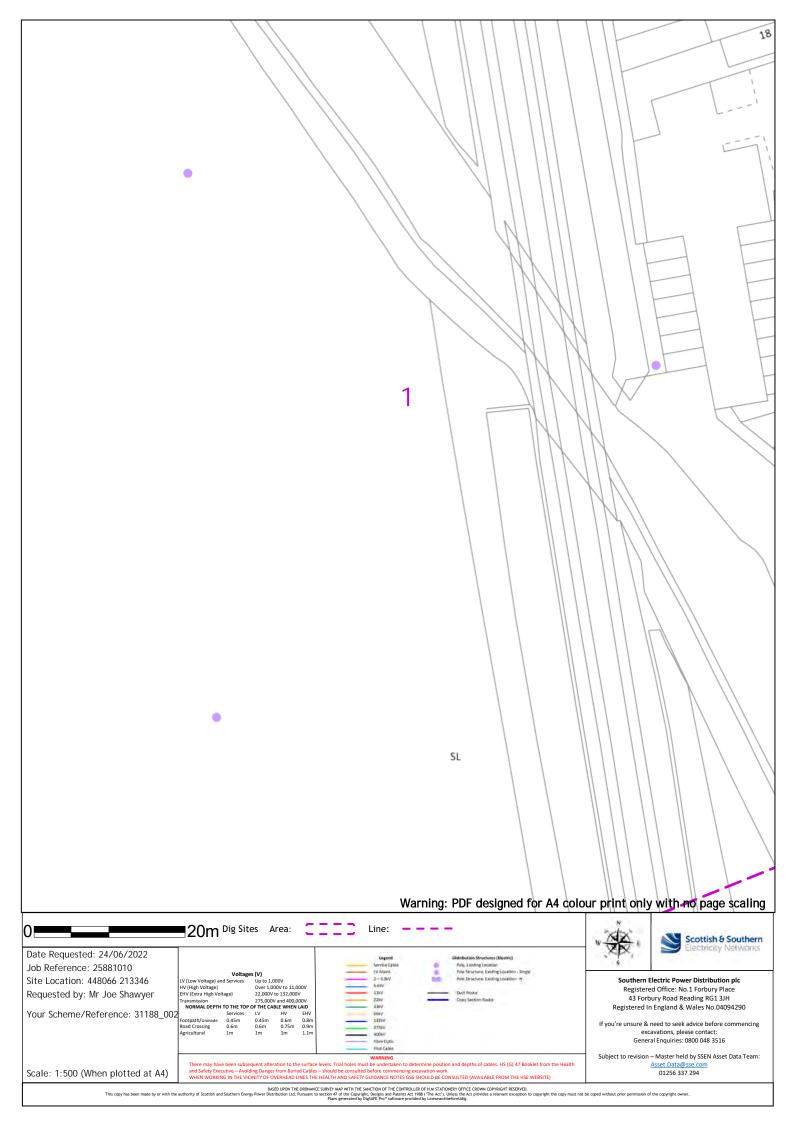
If a Service Cable is not shown on our maps sent, and you require the Cable to be Traced, please contact the General Enquiries Department on 0800 048 3516 (option 3) or via email, ge@ssen.co.uk

If you need further information on our network in this area or a quotation for any required works, please contact the Connections & Engineering Department on 0800 048 3516 or via email, connections@sse.com

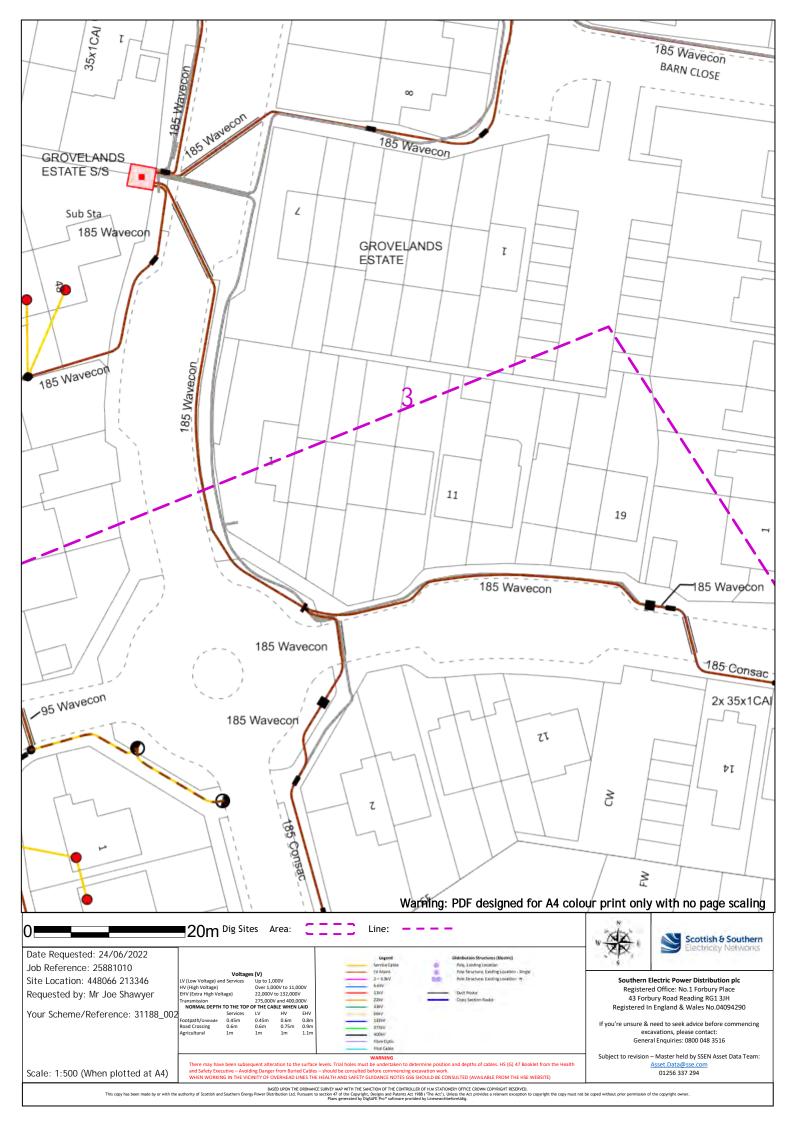
Kind Regards,

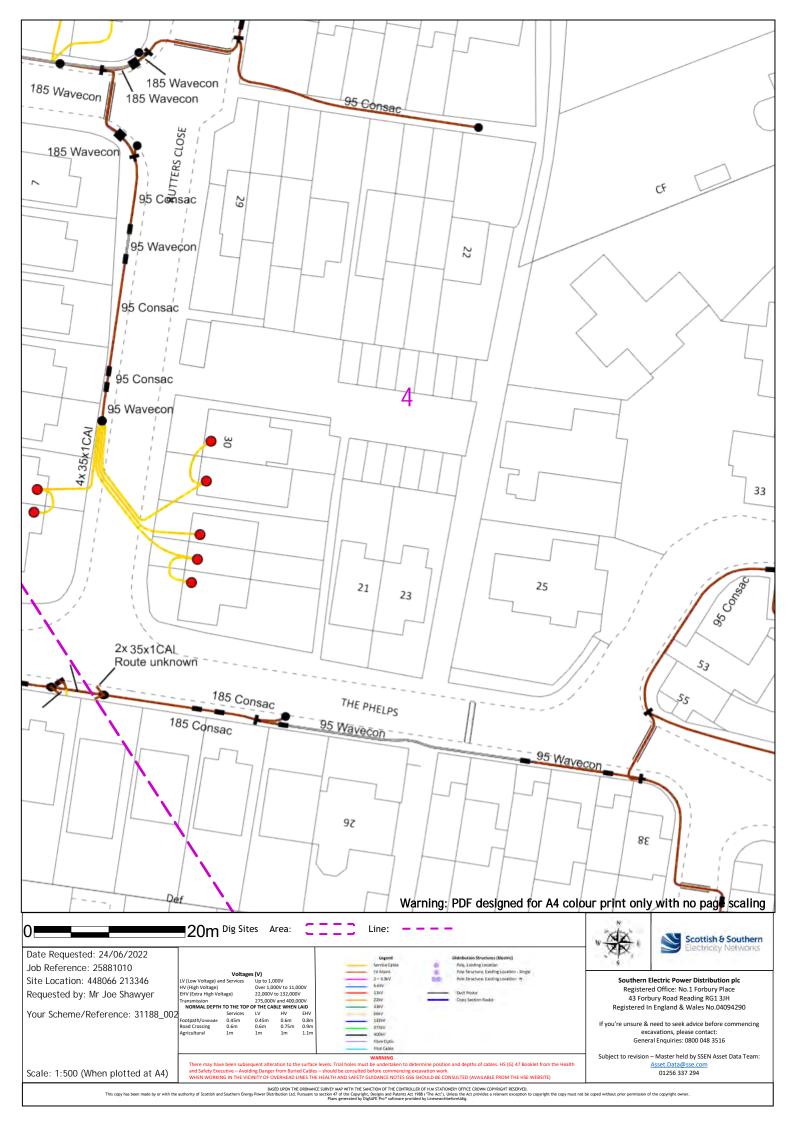
Asset Data Team 01256 337 294 Asset.data@sse.com



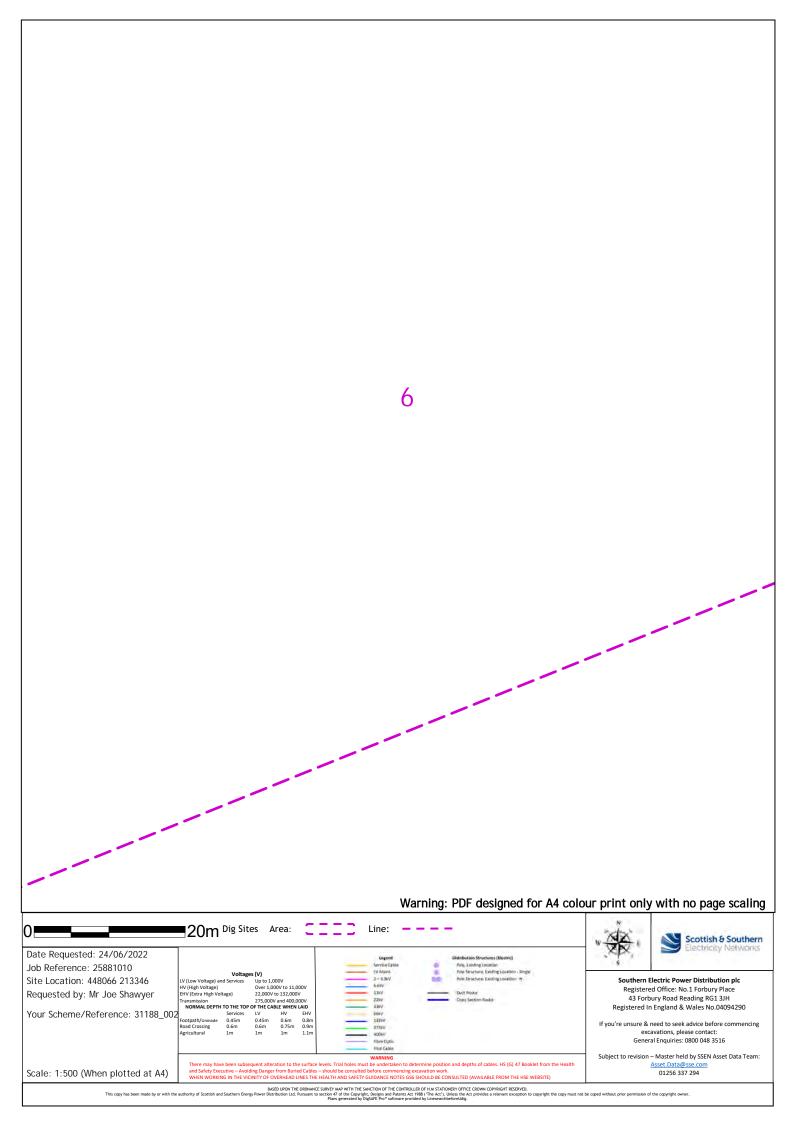


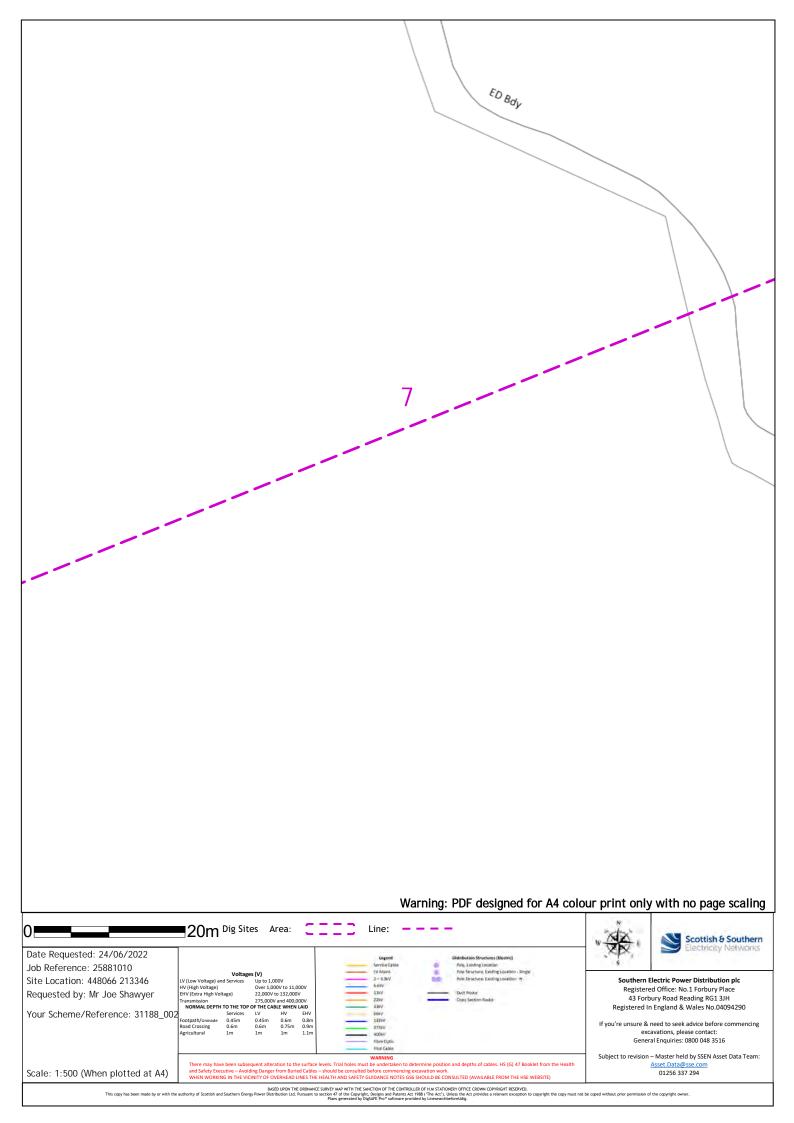


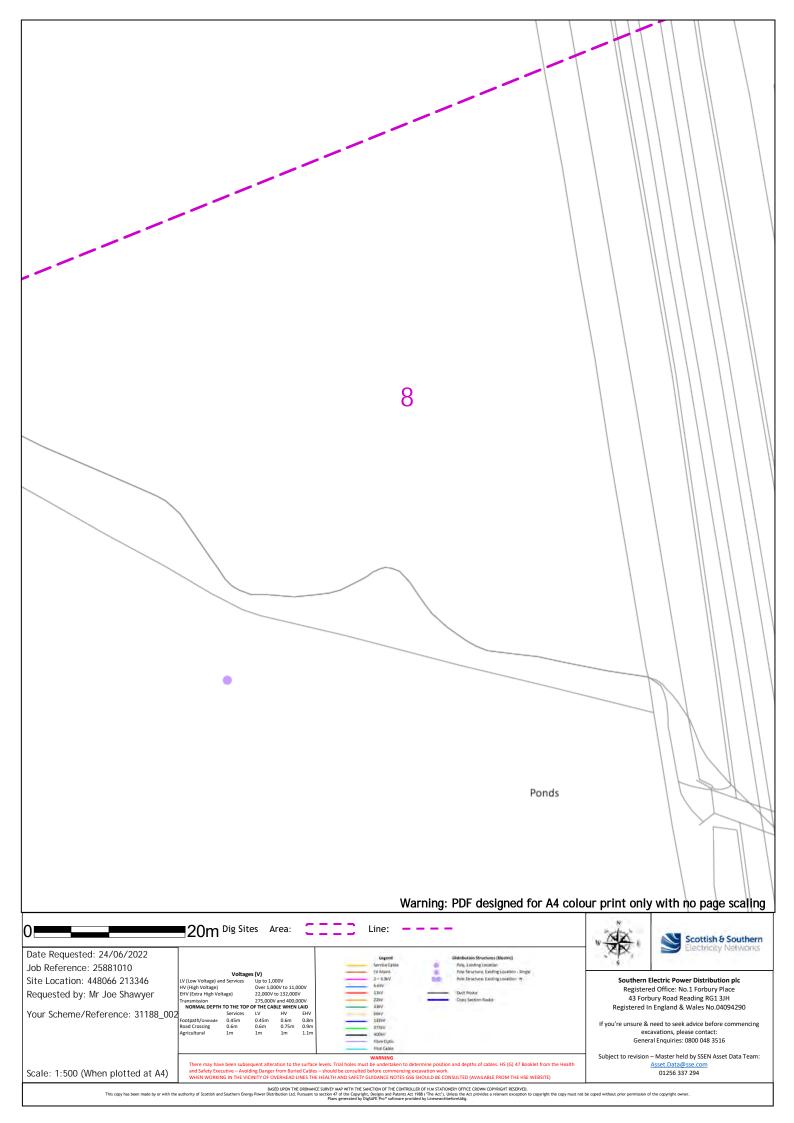


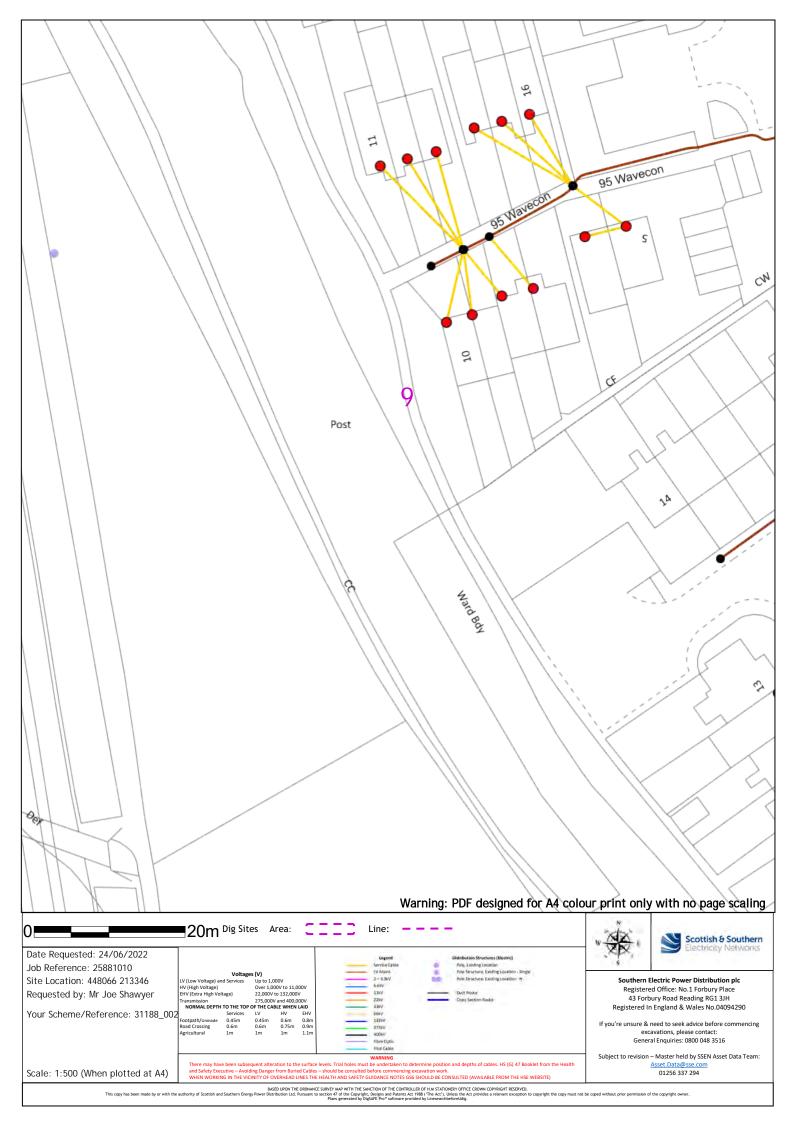


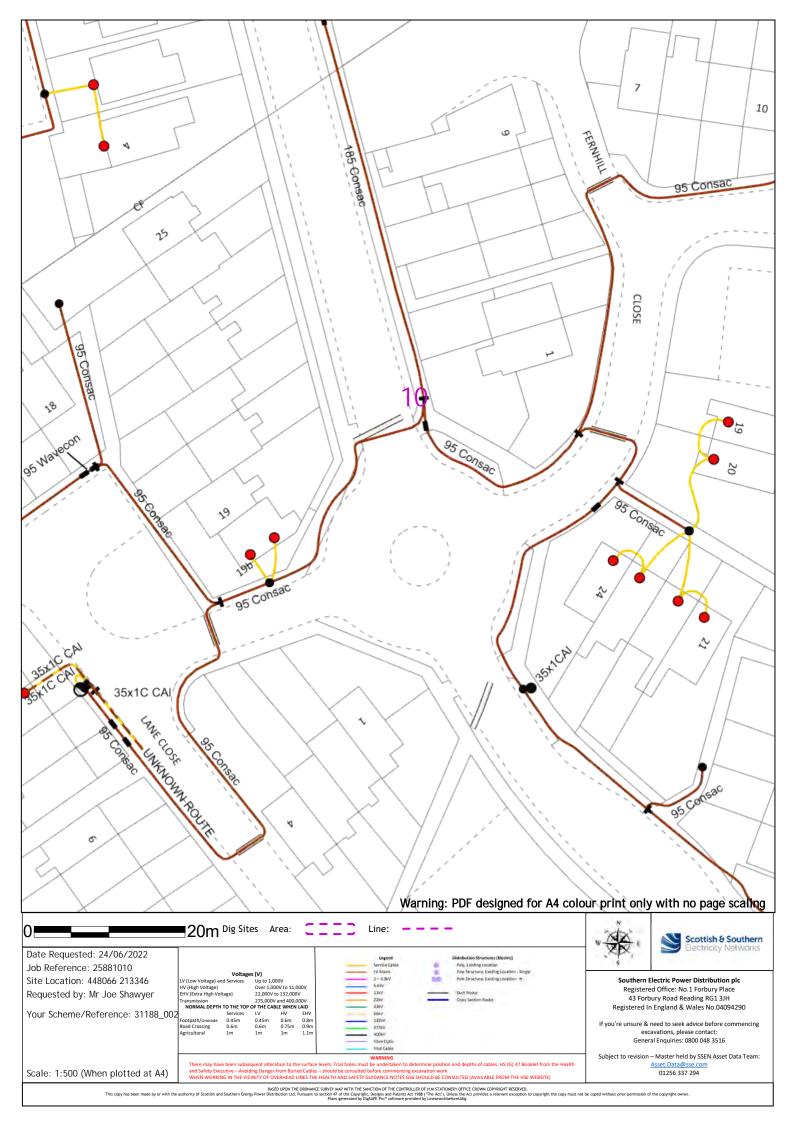
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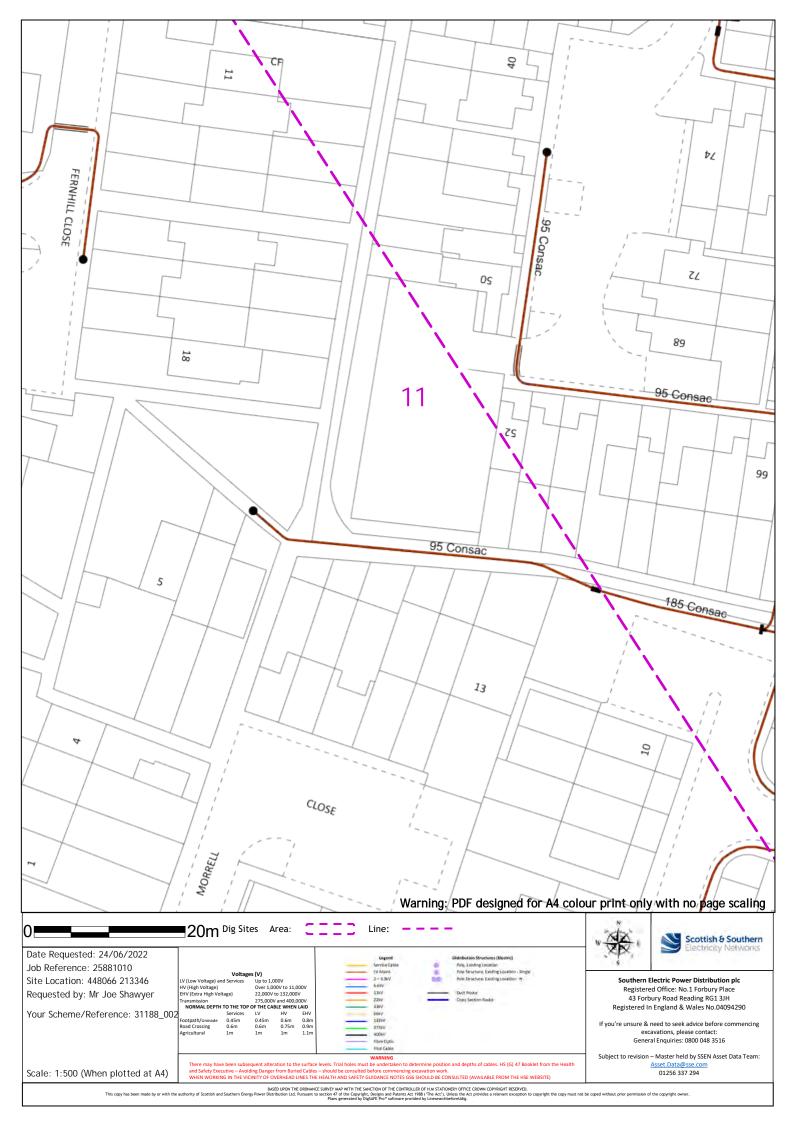




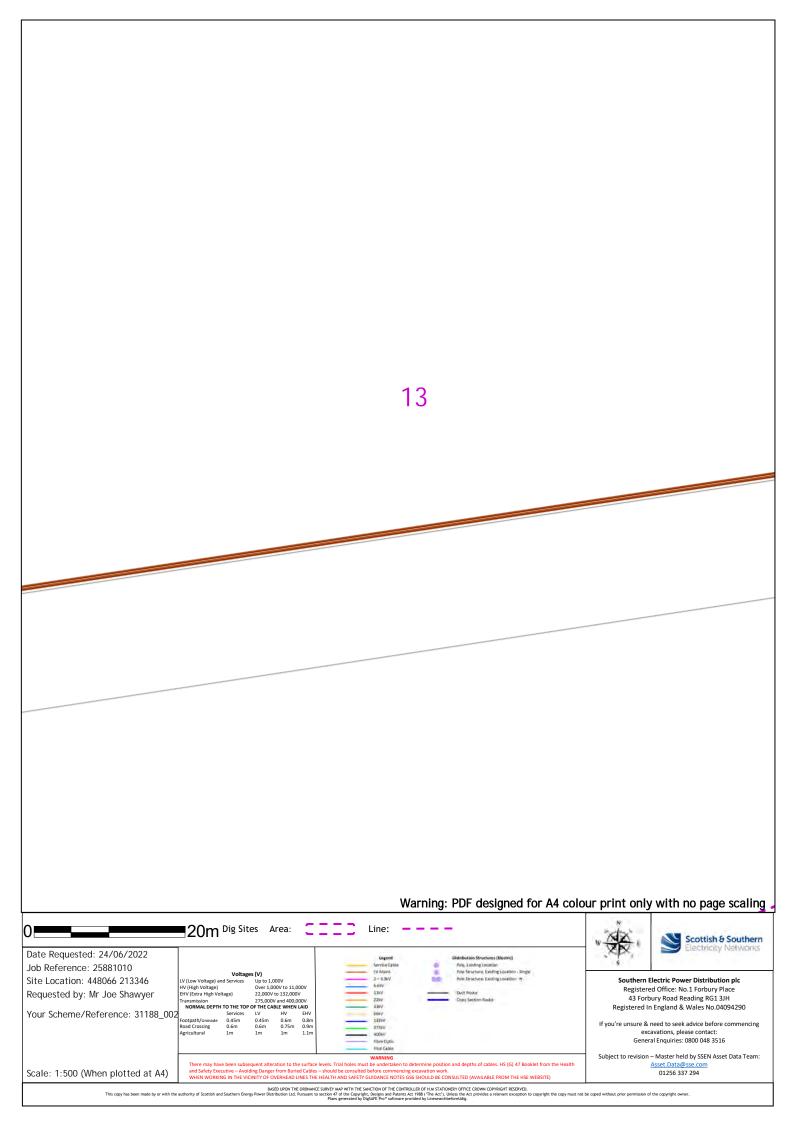


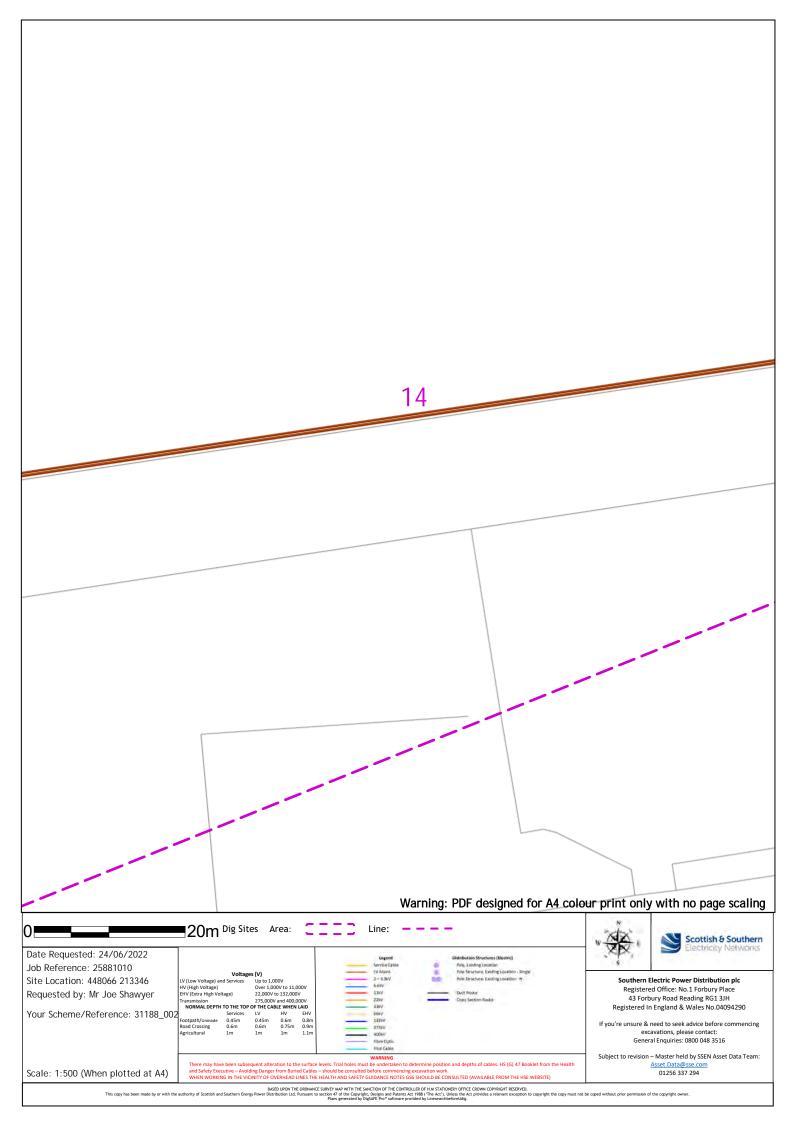


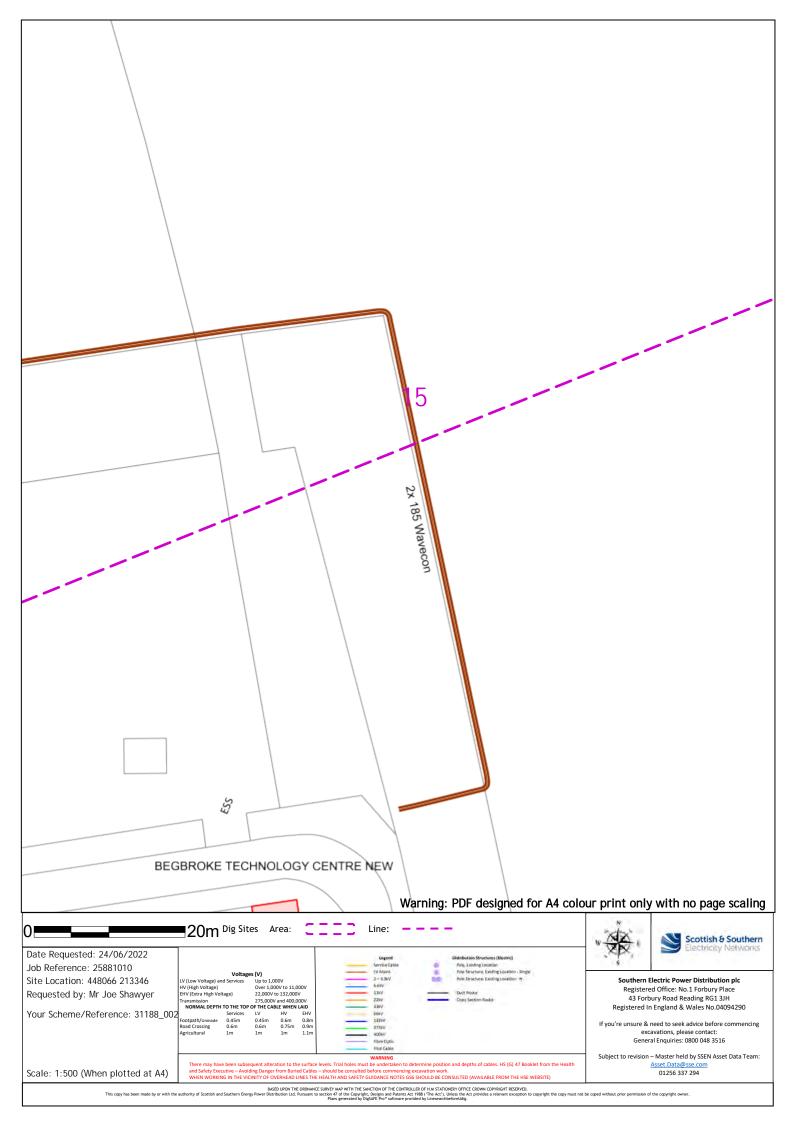


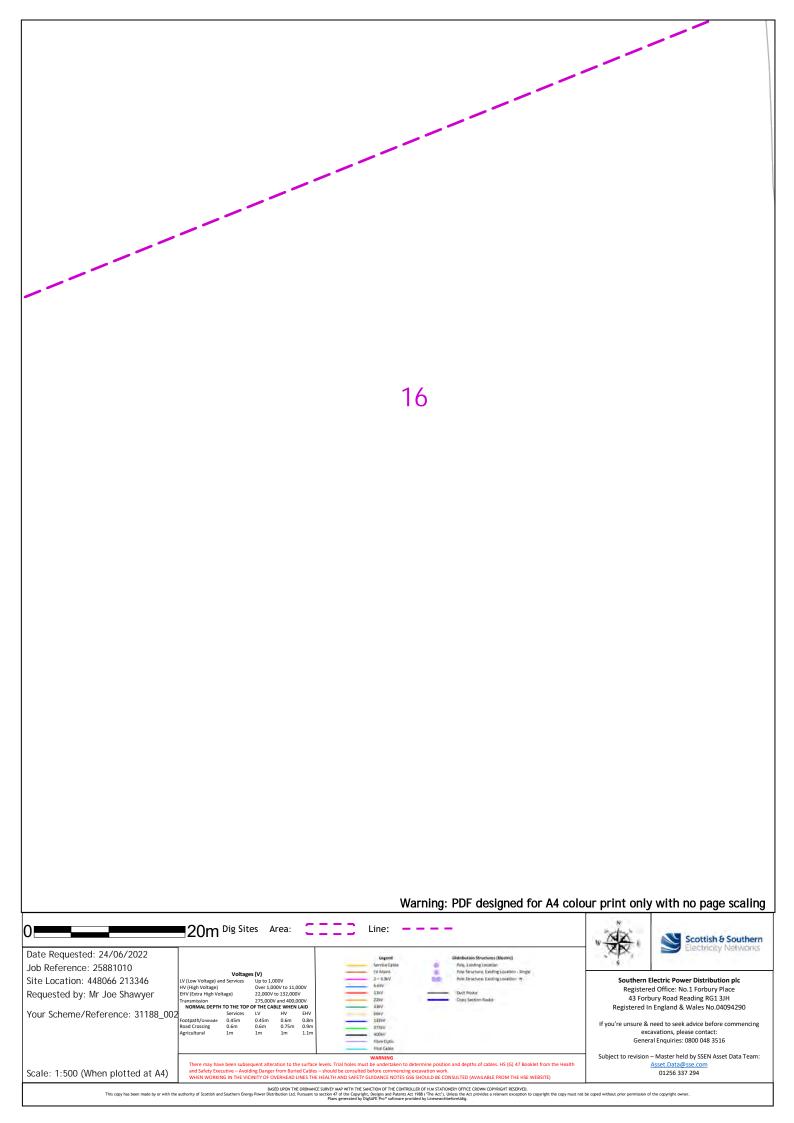




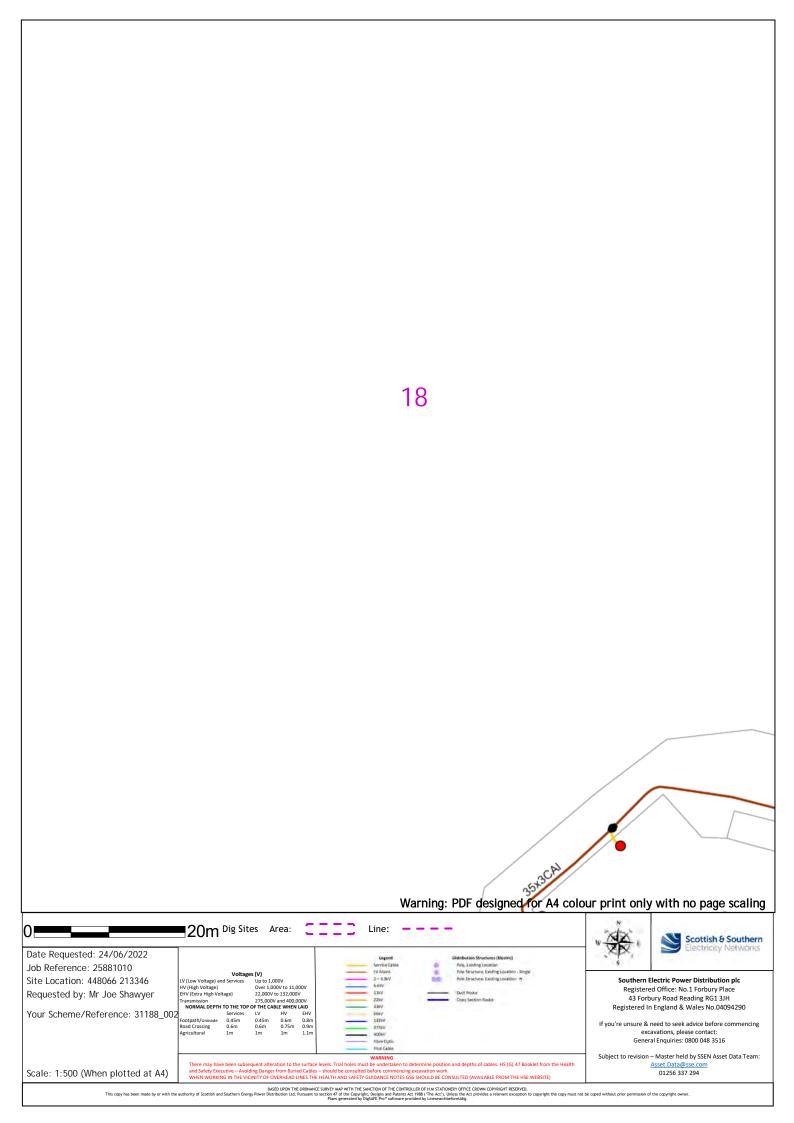


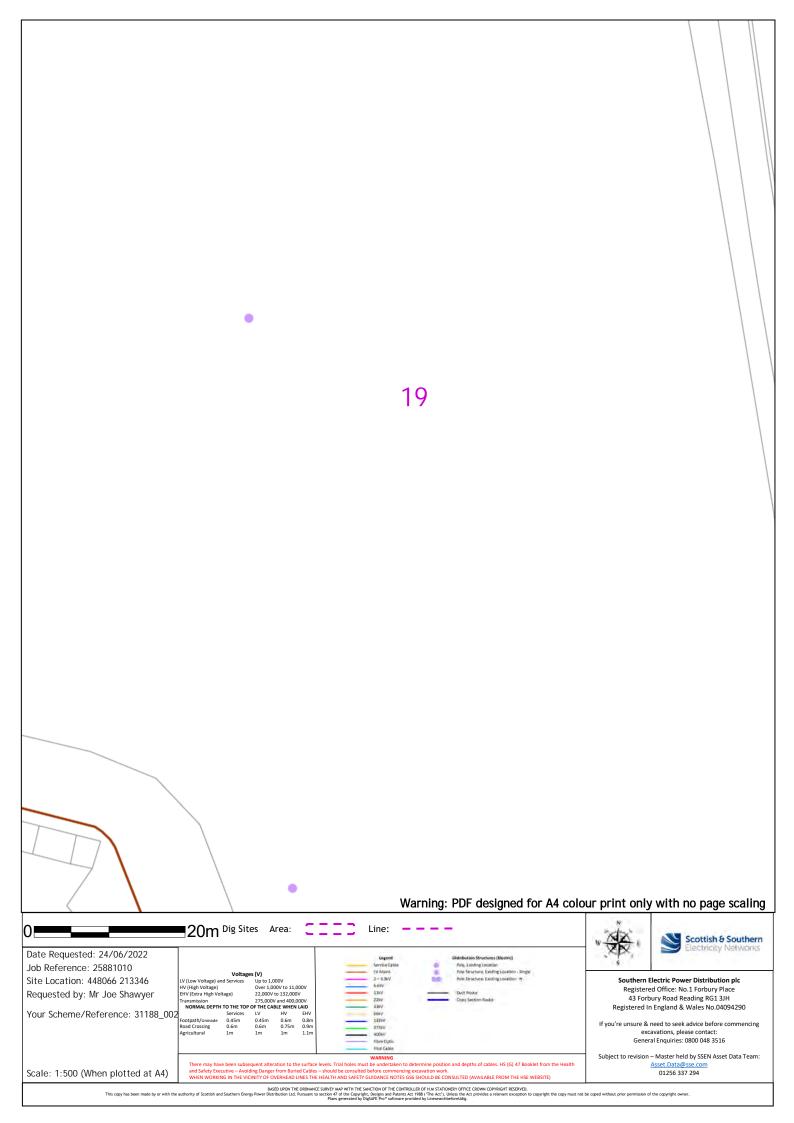


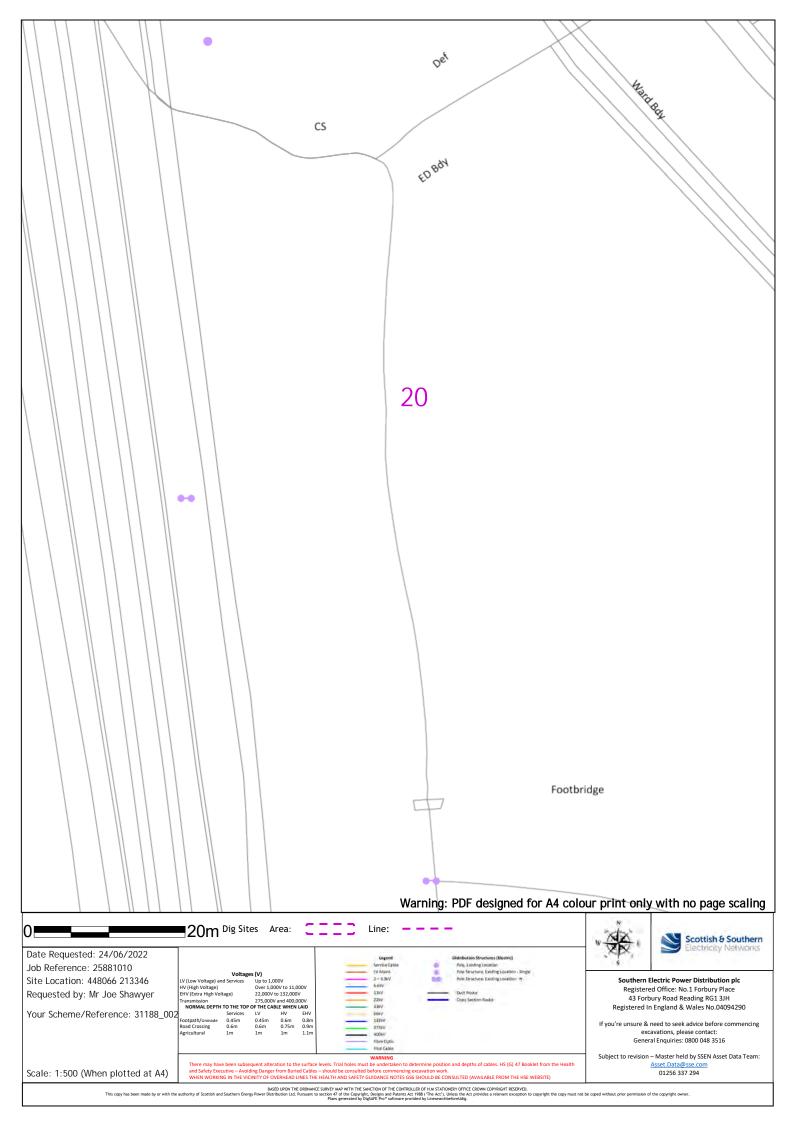


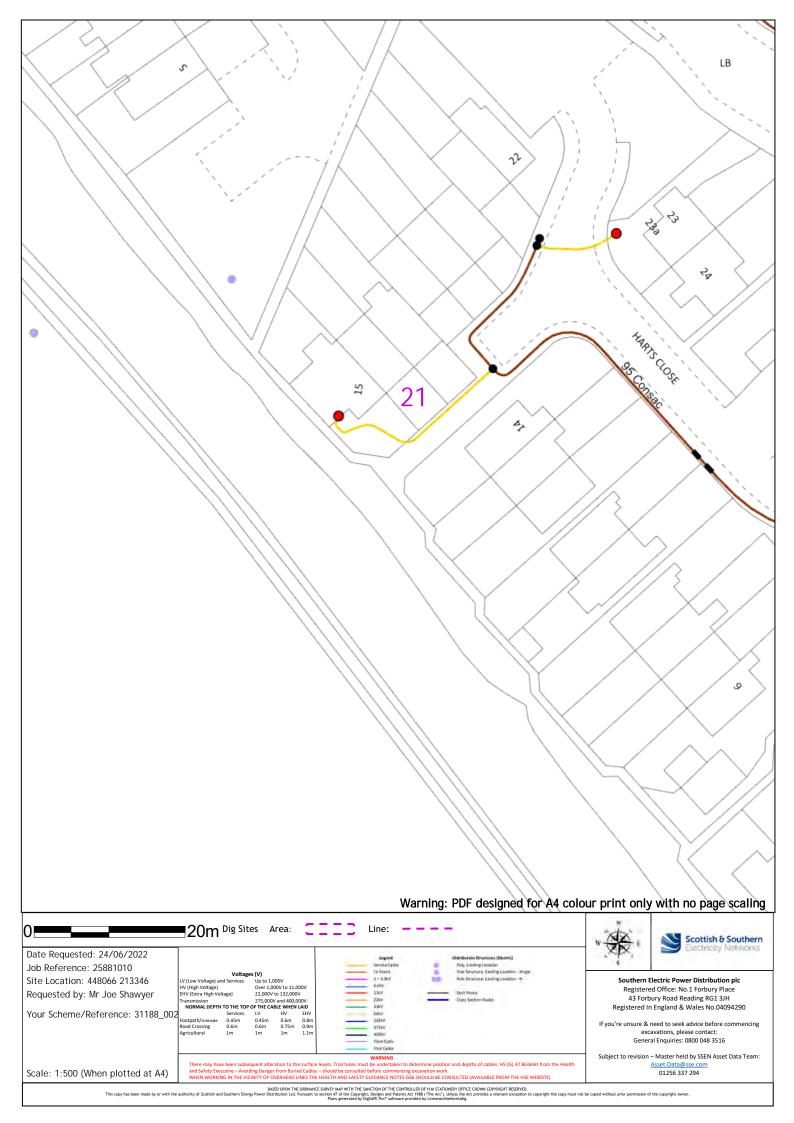


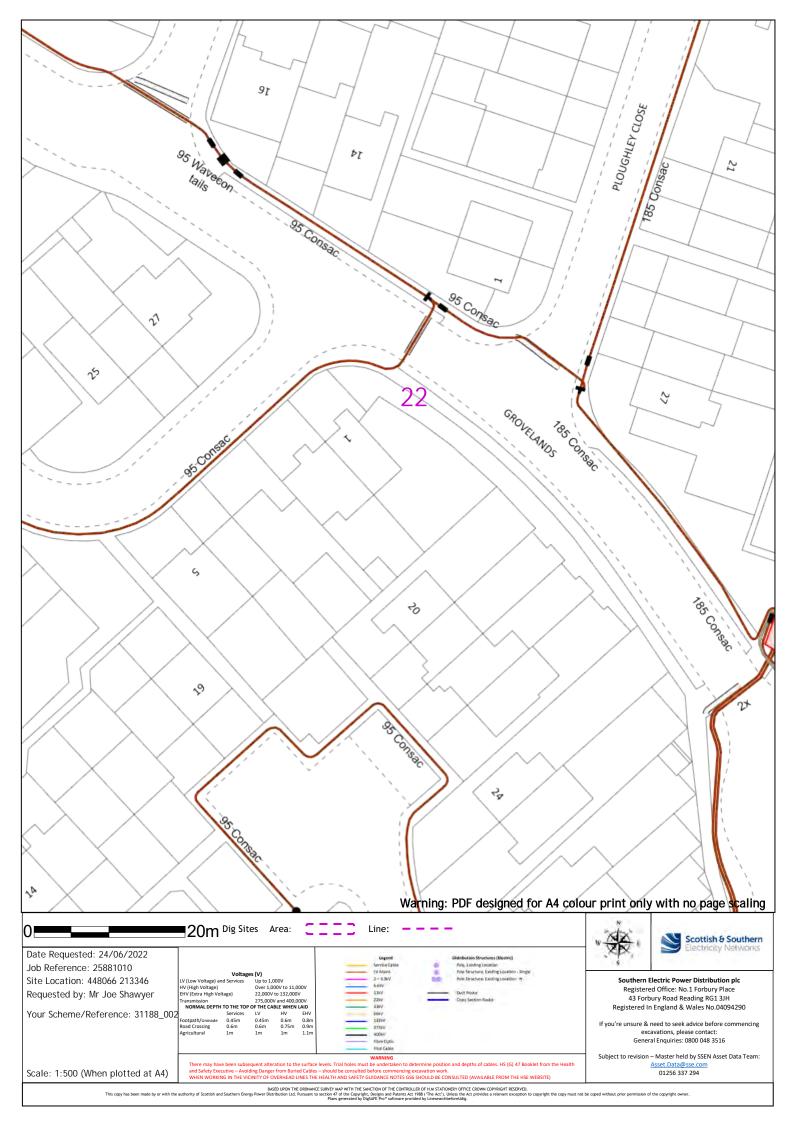
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Up to 1,000V
Over 1,000V to 11,000V
22,000V to 132,000V
22,000V and 400,000V
OF THE CABLE WHEN LAID
LV
HV
EHV
0.45m
0.6m
0.75m
0.9m
1m
1m
1.1m Southern Electric Power Distribution plc Registered Office: No.1 Forbury Place Site Location: 448066 213346 Requested by: Mr Joe Shawyer 43 Forbury Road Reading RG1 3JH Registered In England & Wales No.04094290 Your Scheme/Reference: 31188_002 If you're unsure & need to seek advice before commencing excavations, please contact: General Enquiries: 0800 048 3516 Subject to revision – Master held by SSEN Asset Data Team: Scale: 1:500 (When plotted at A4) 01256 337 294

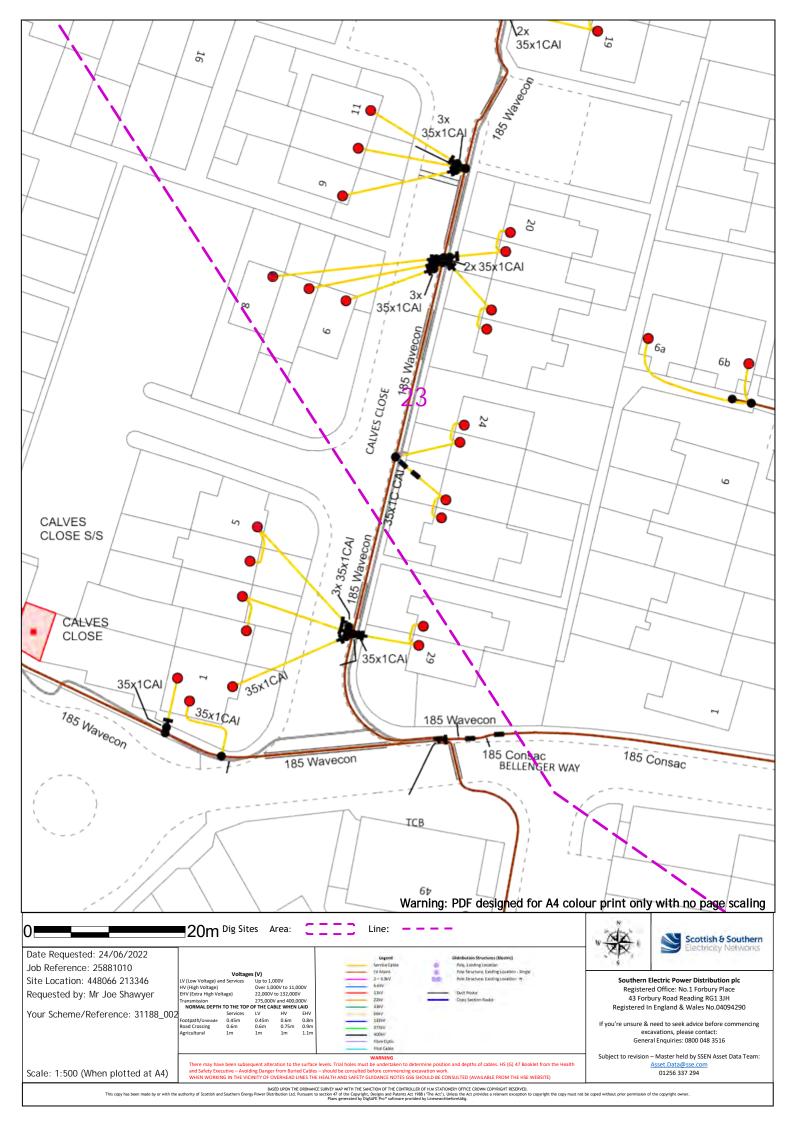


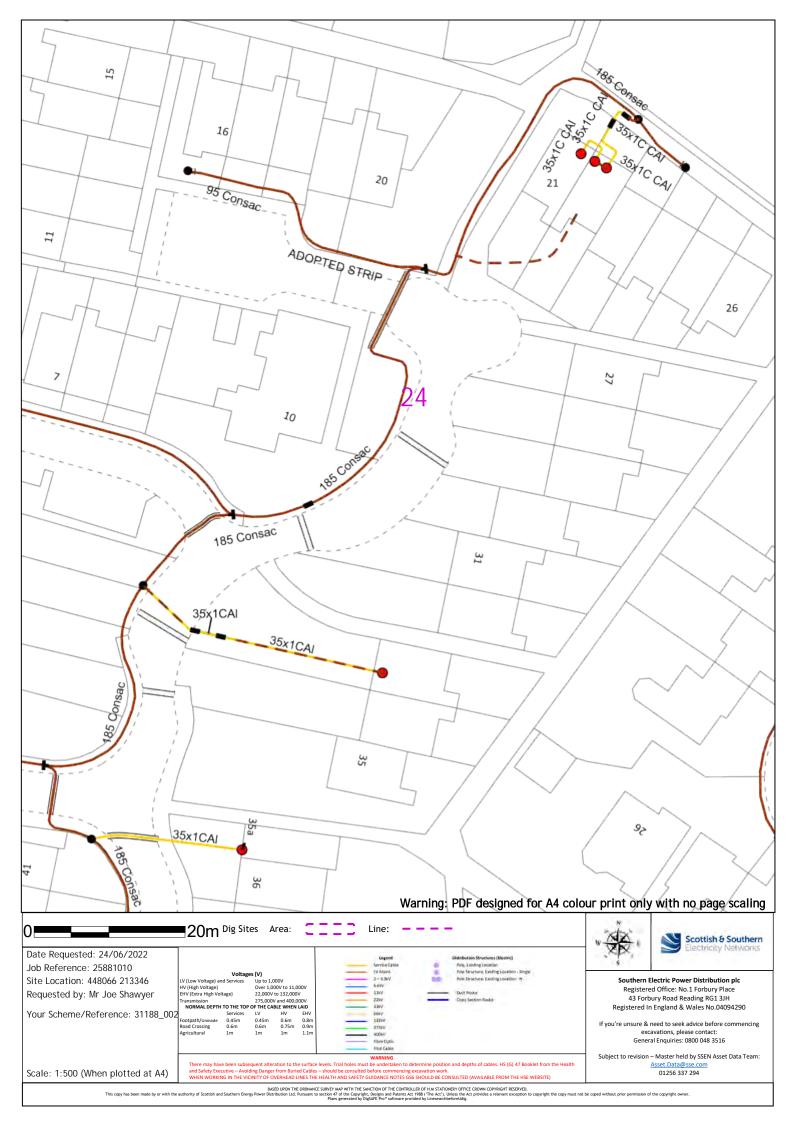




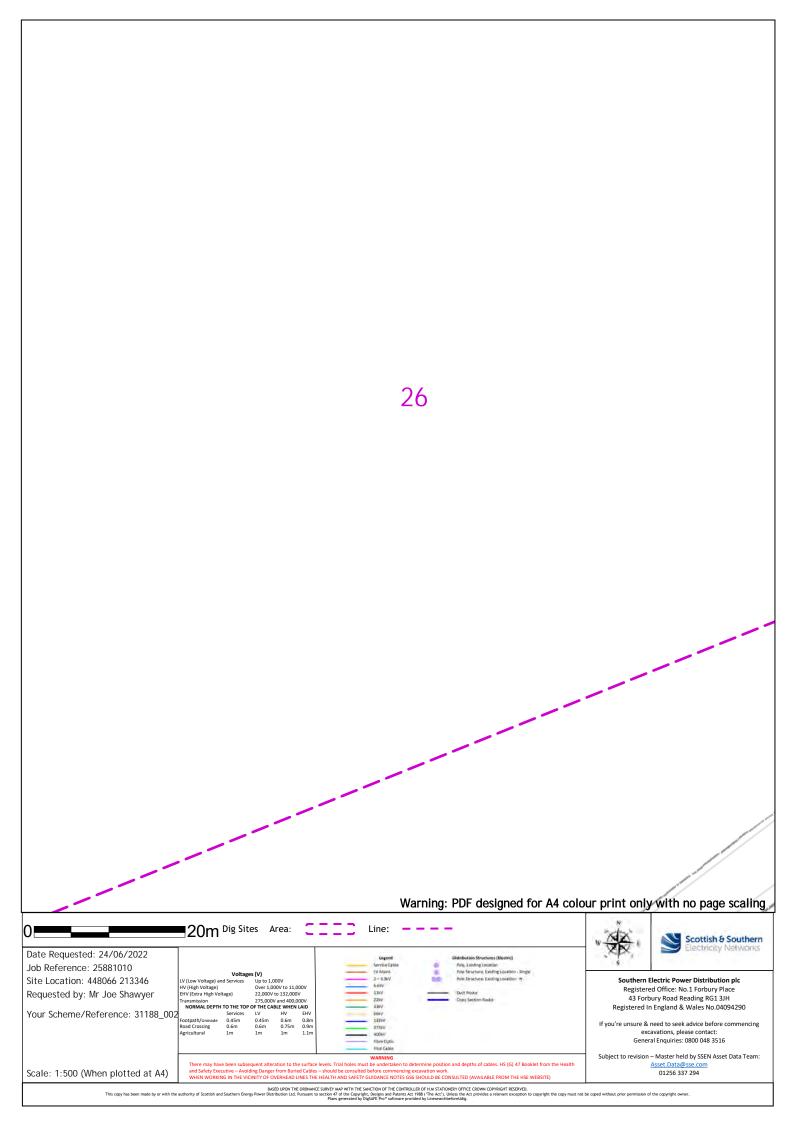


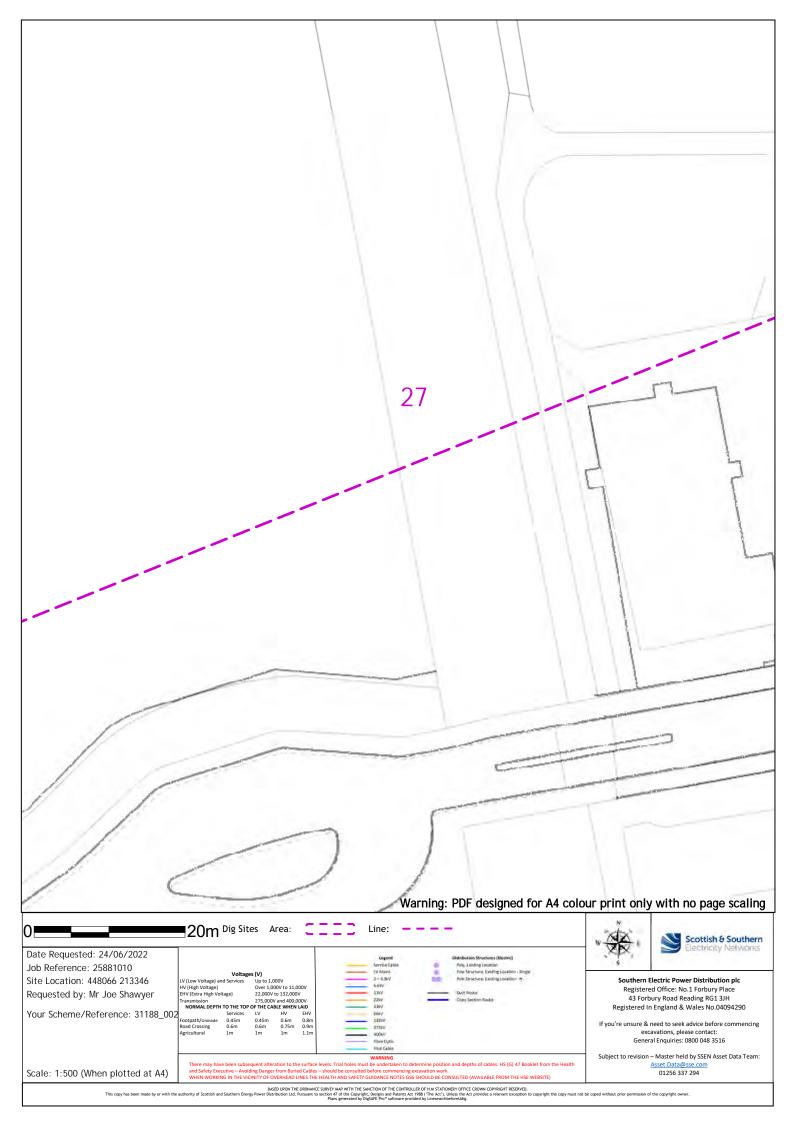


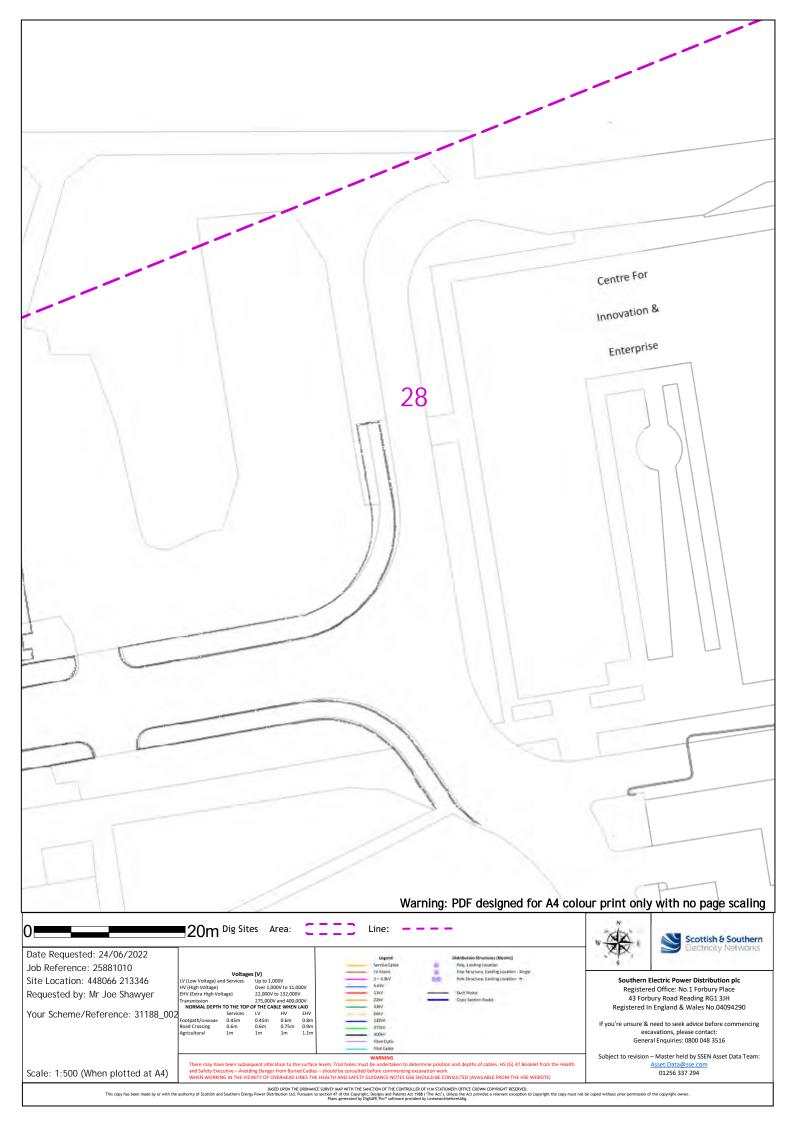


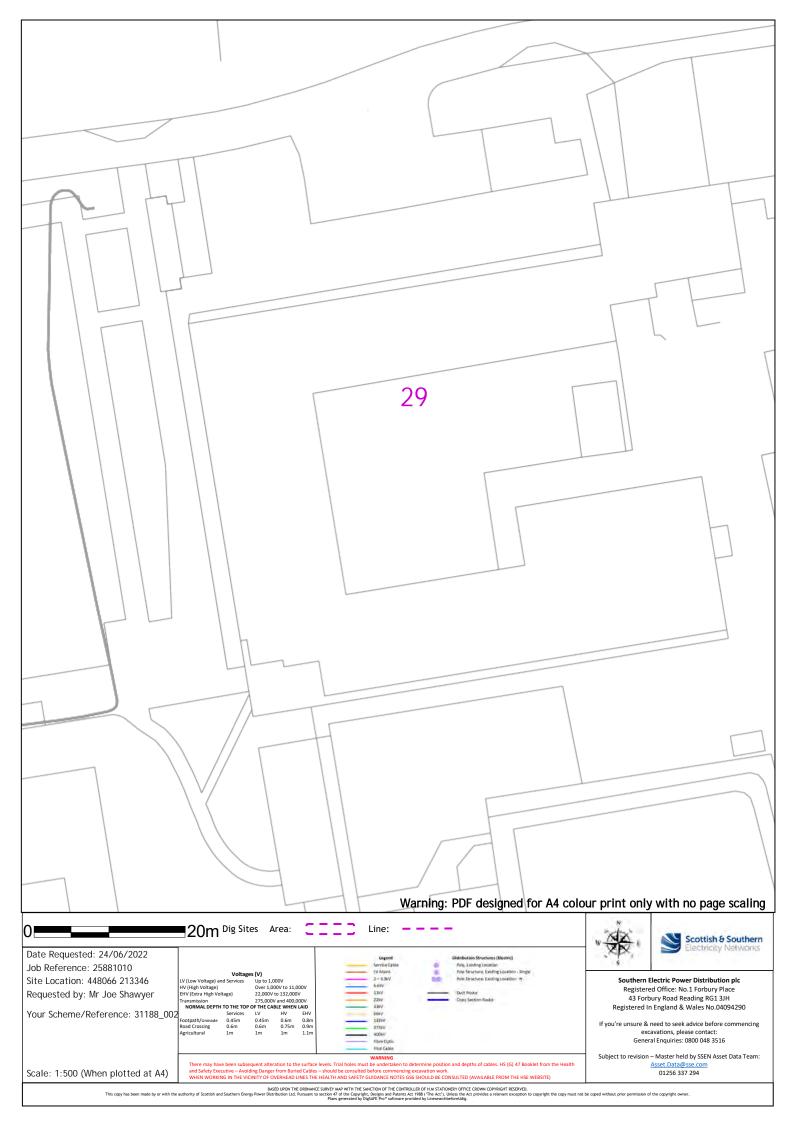


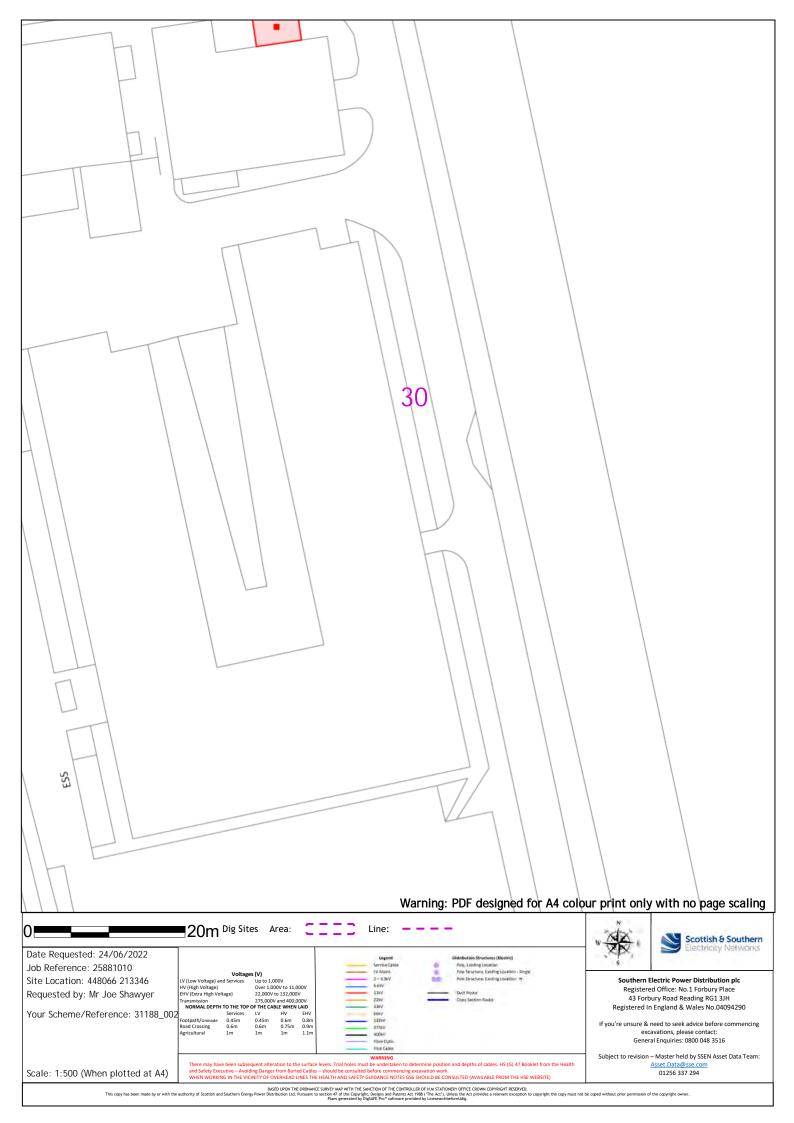
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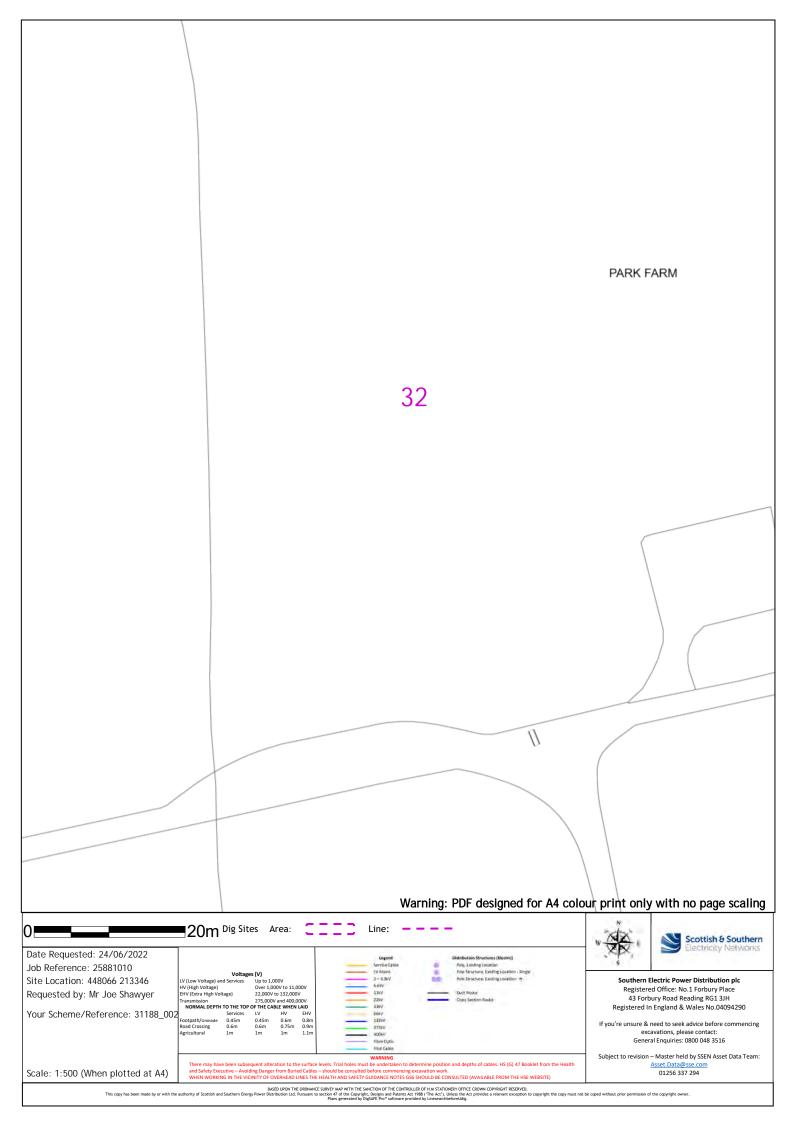


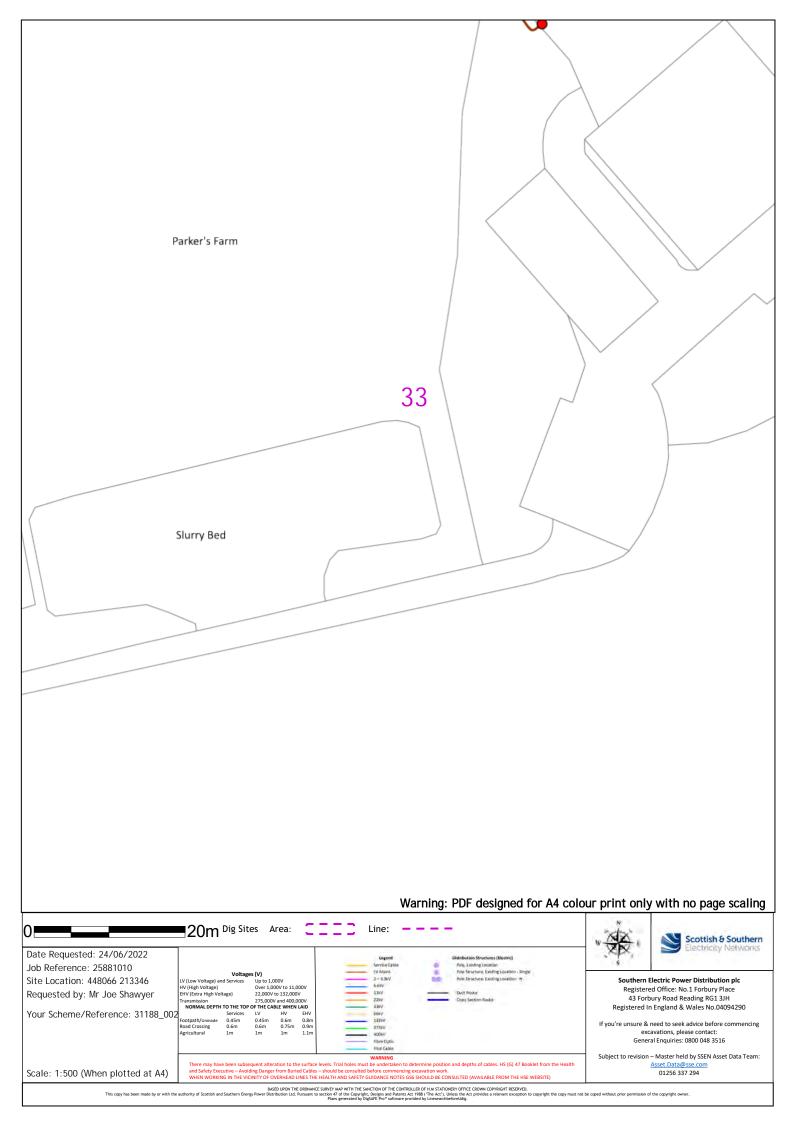


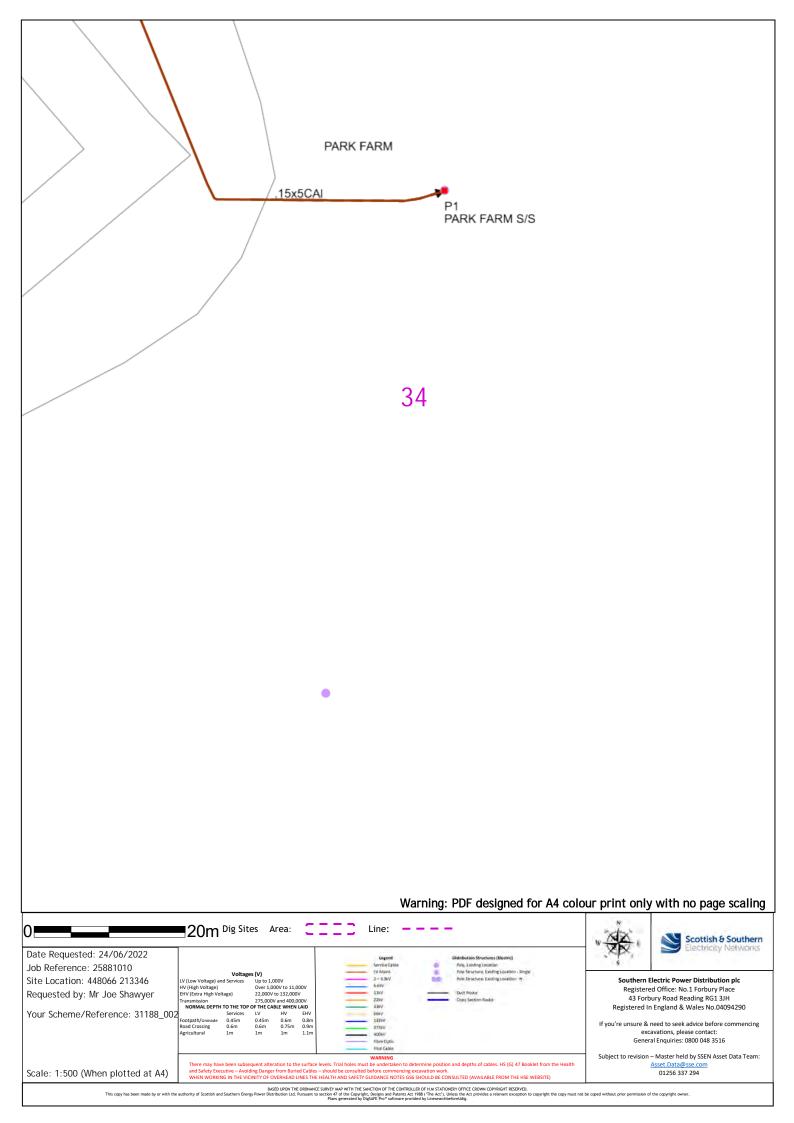


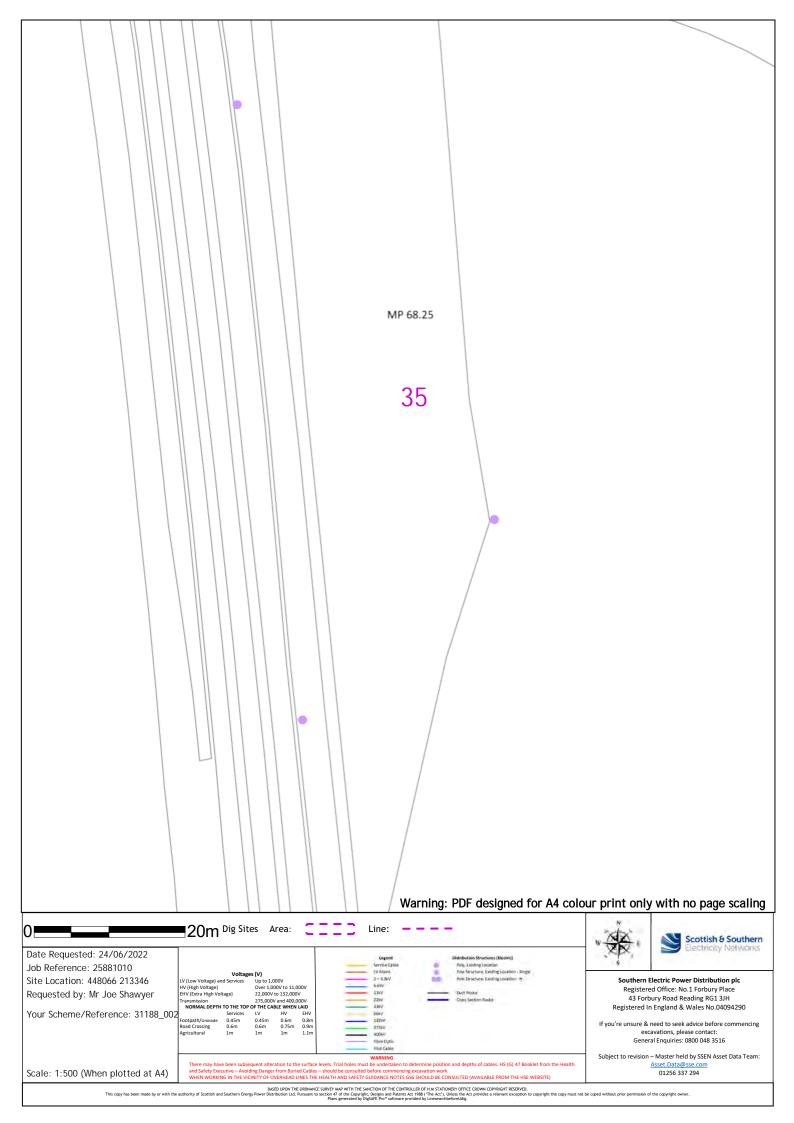


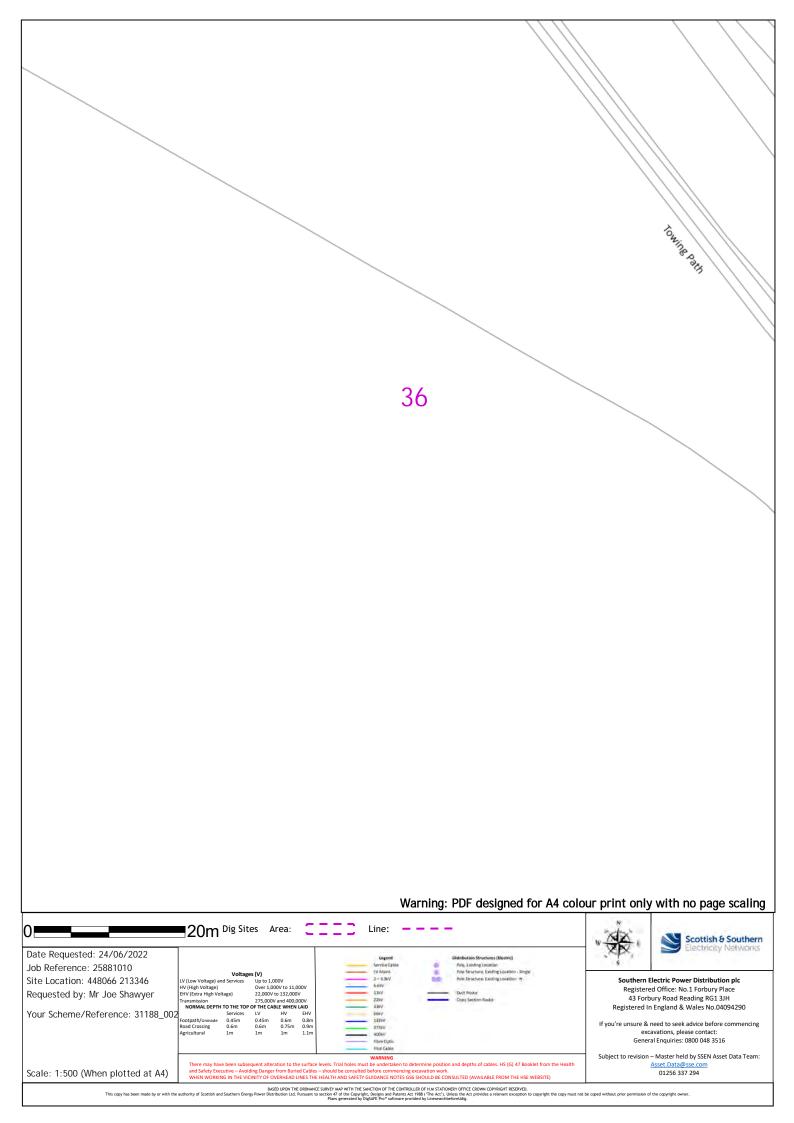
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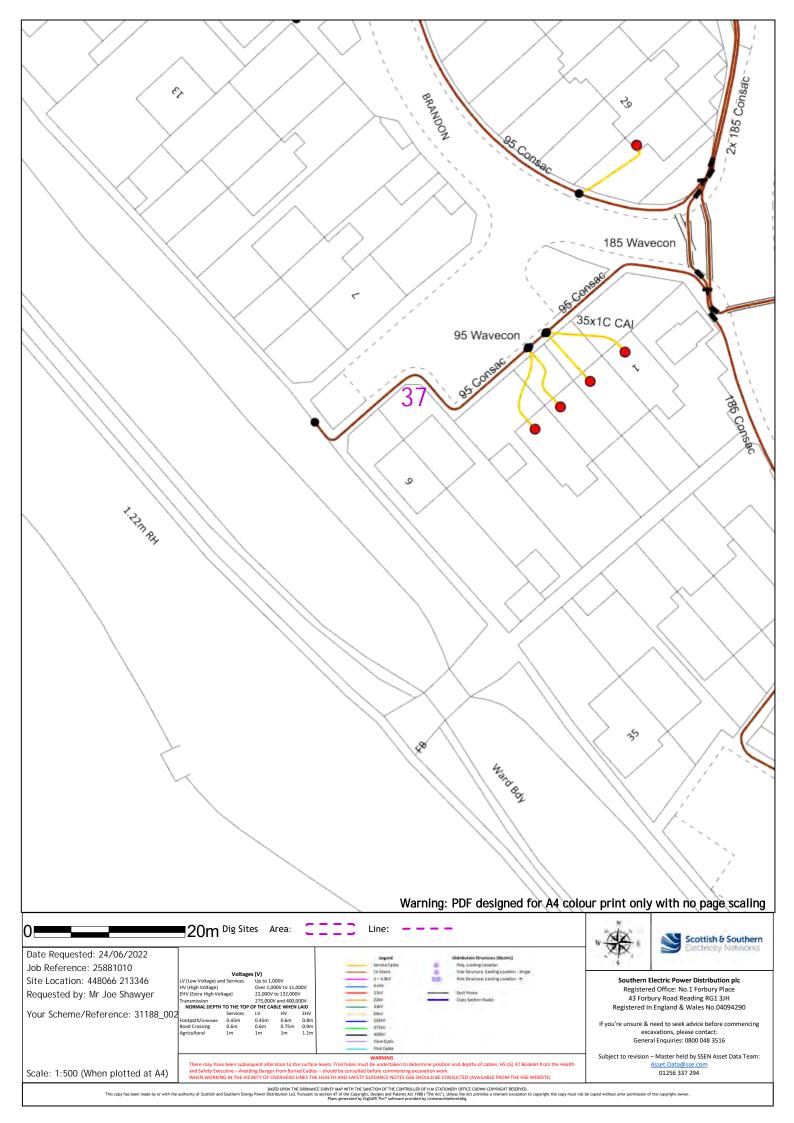


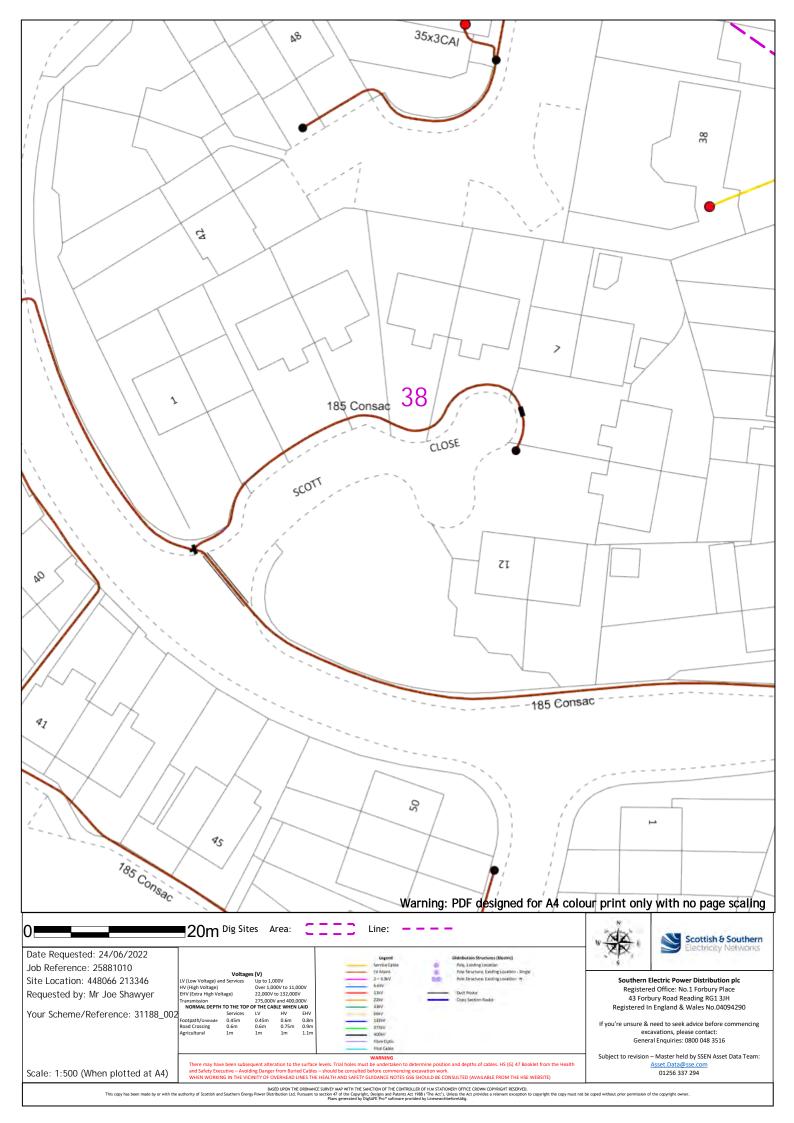


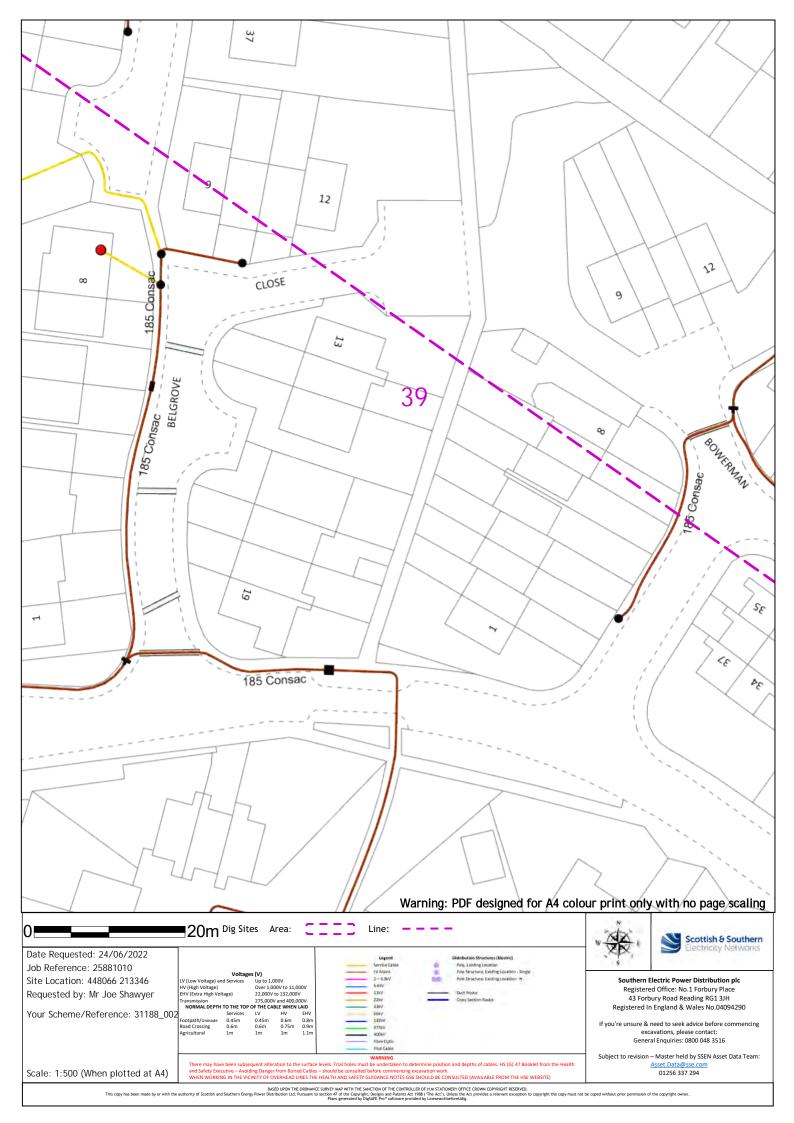


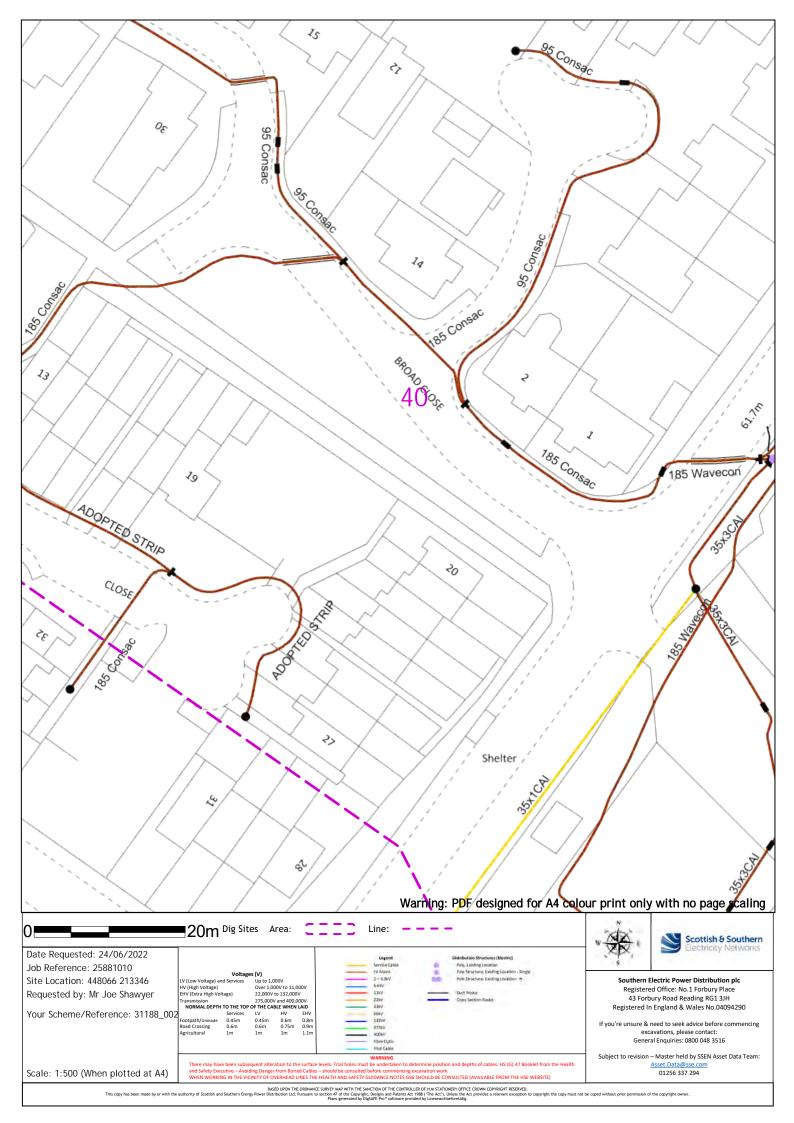


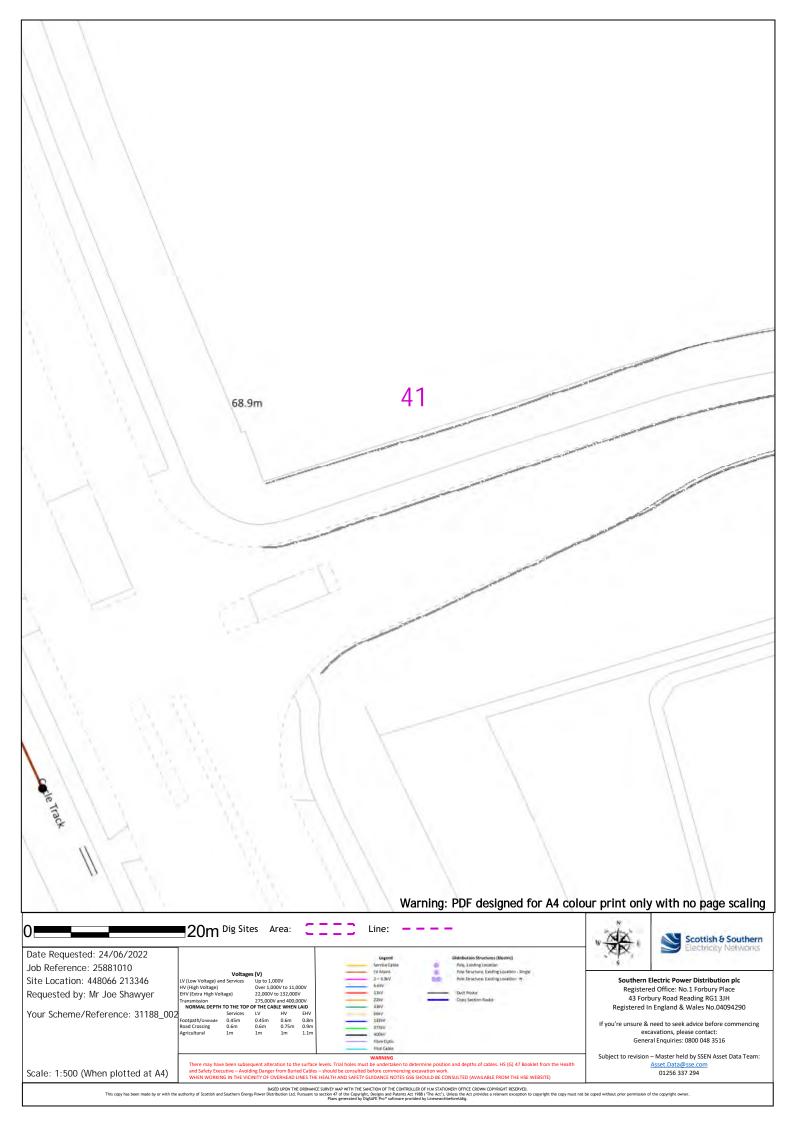


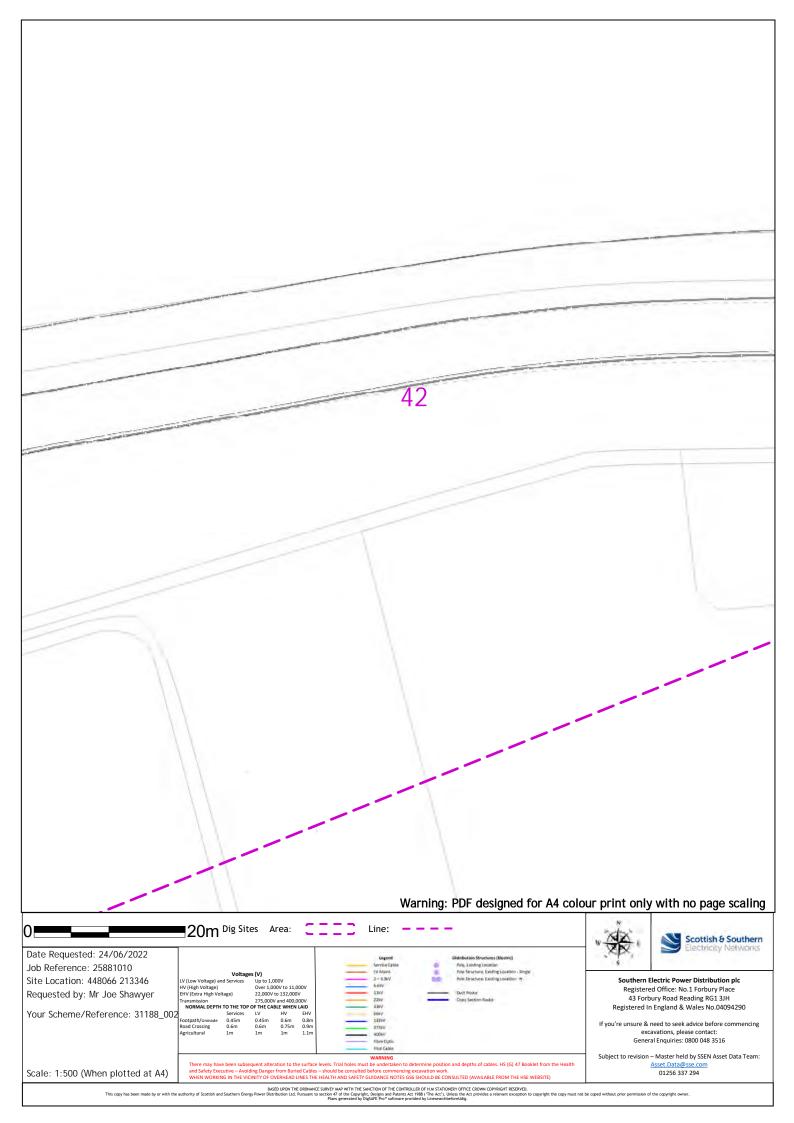


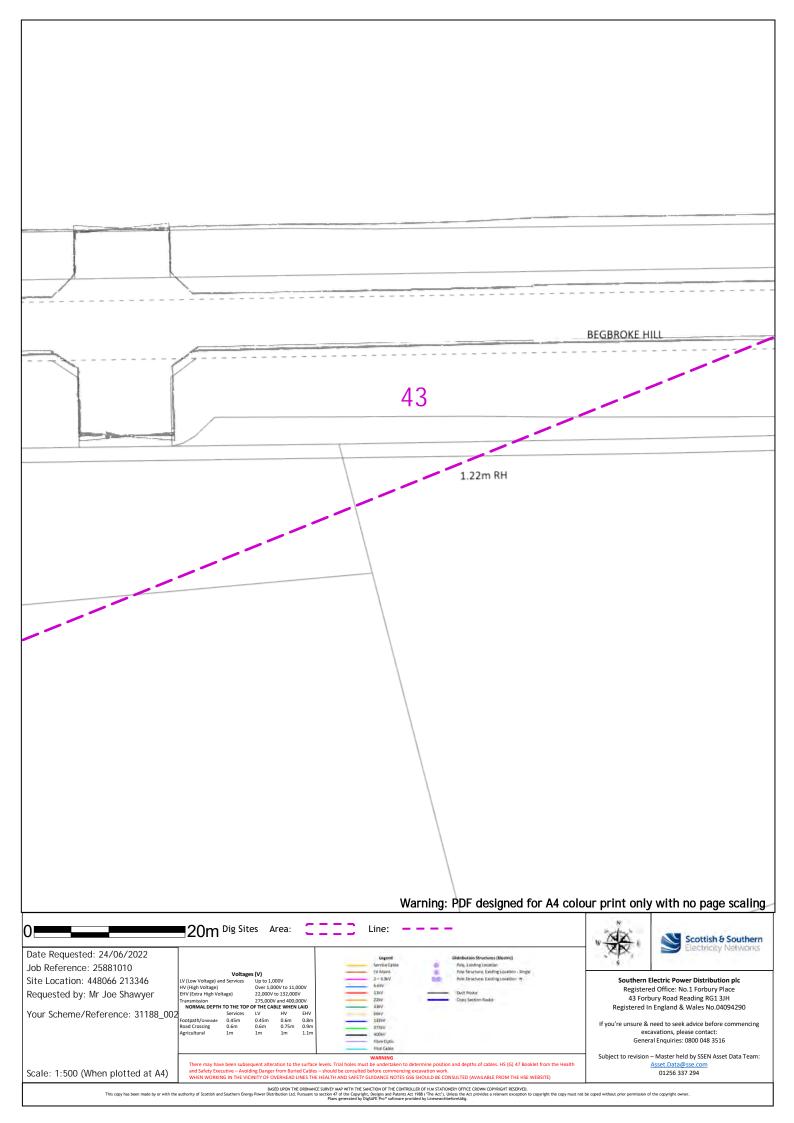


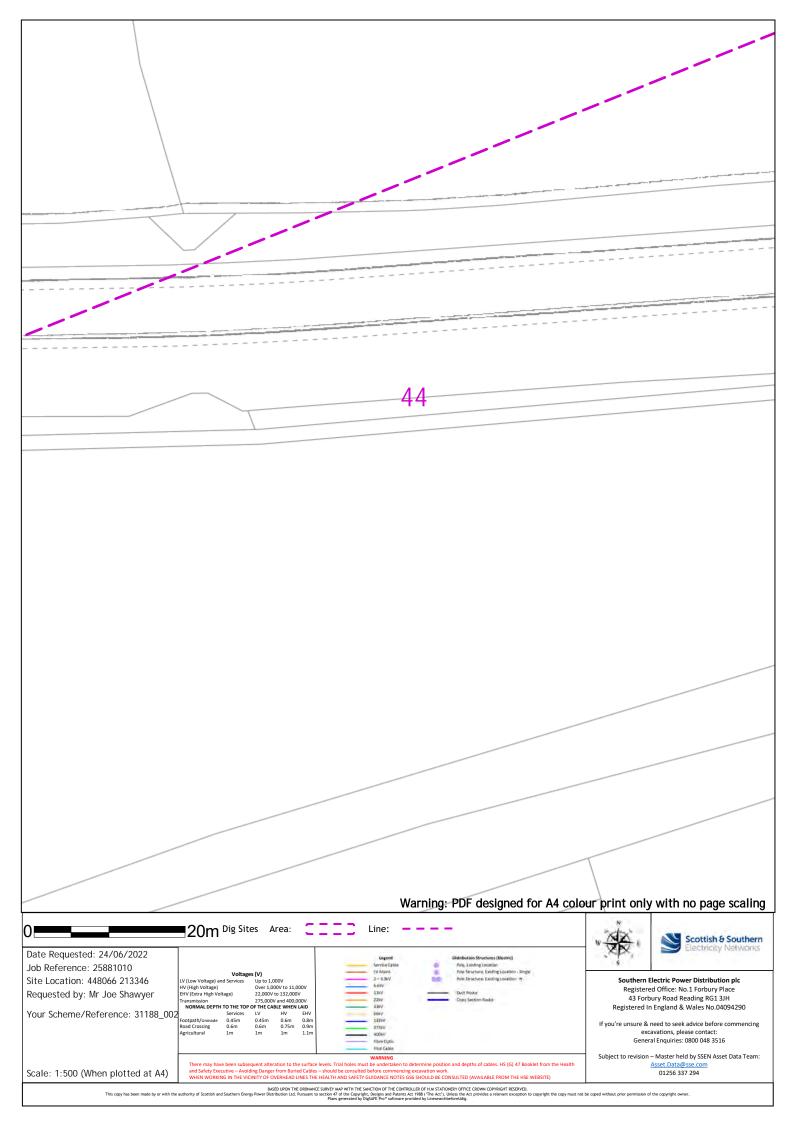


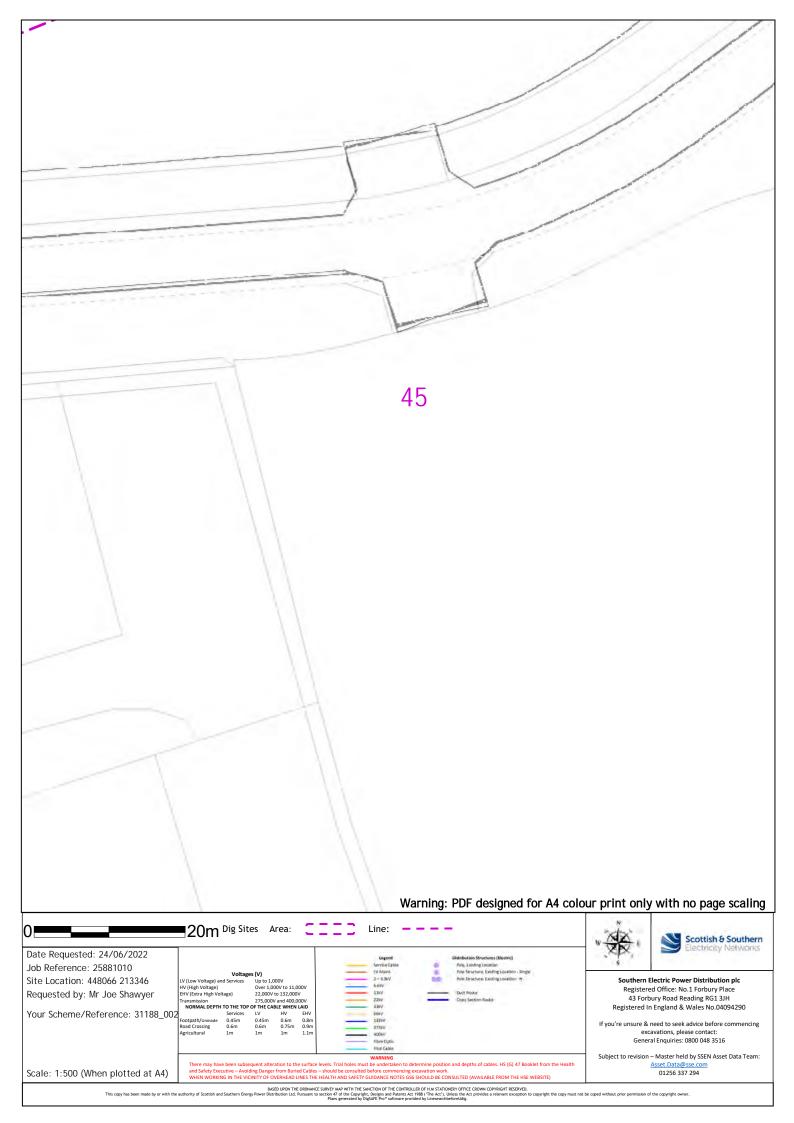


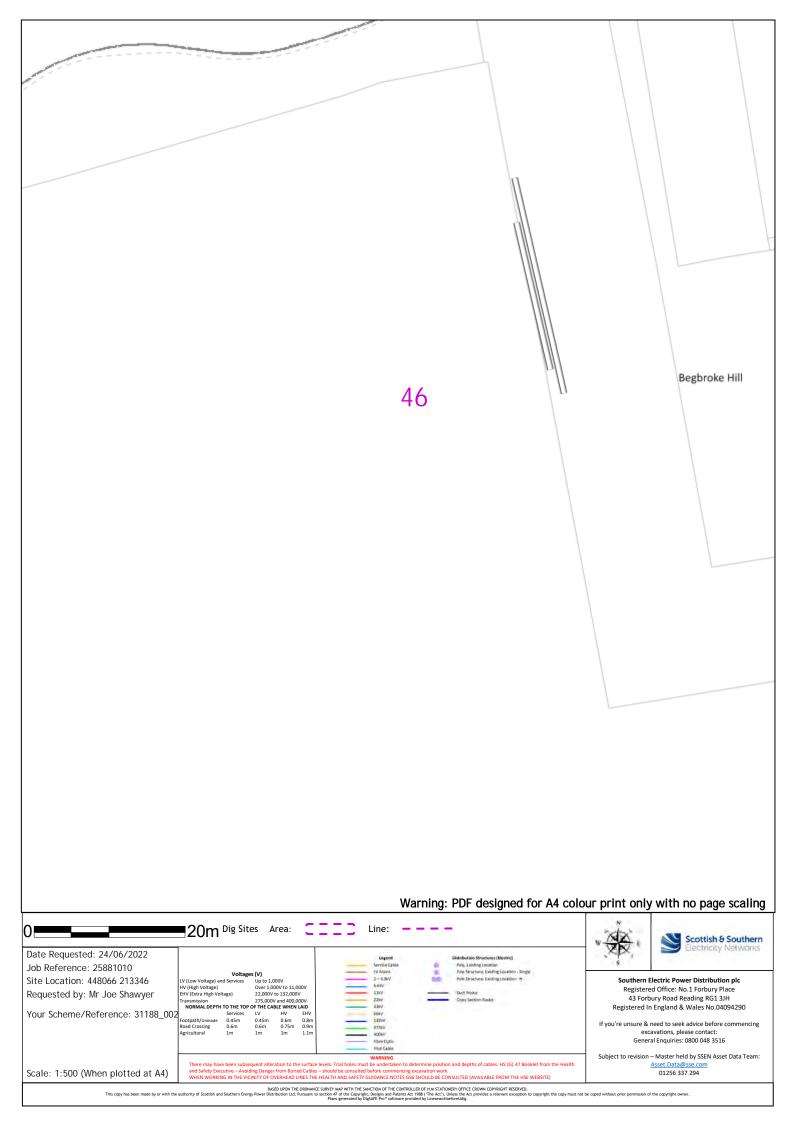


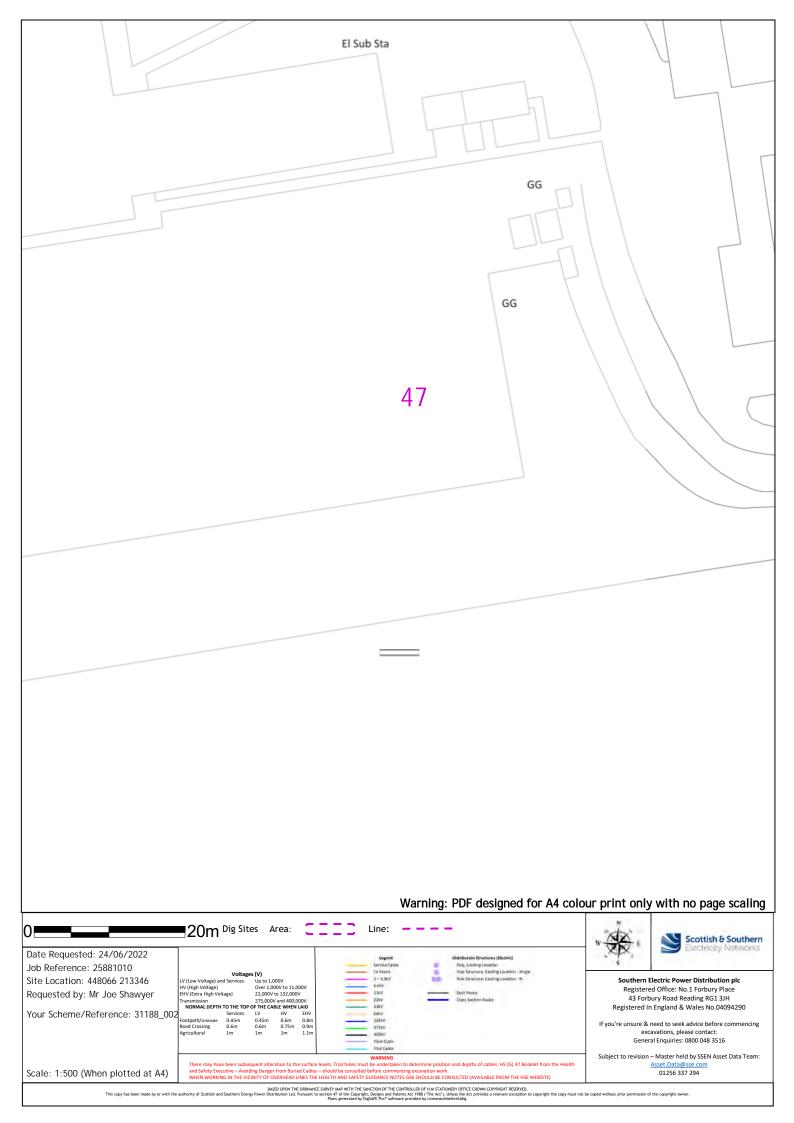


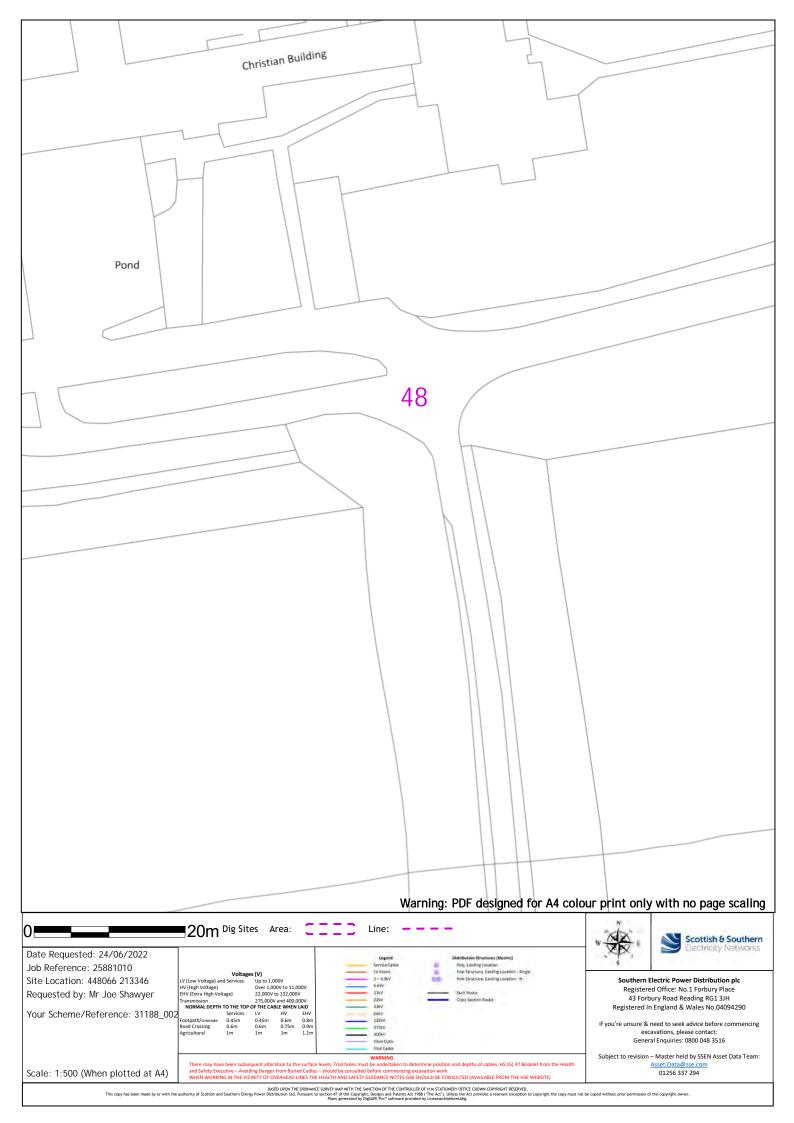


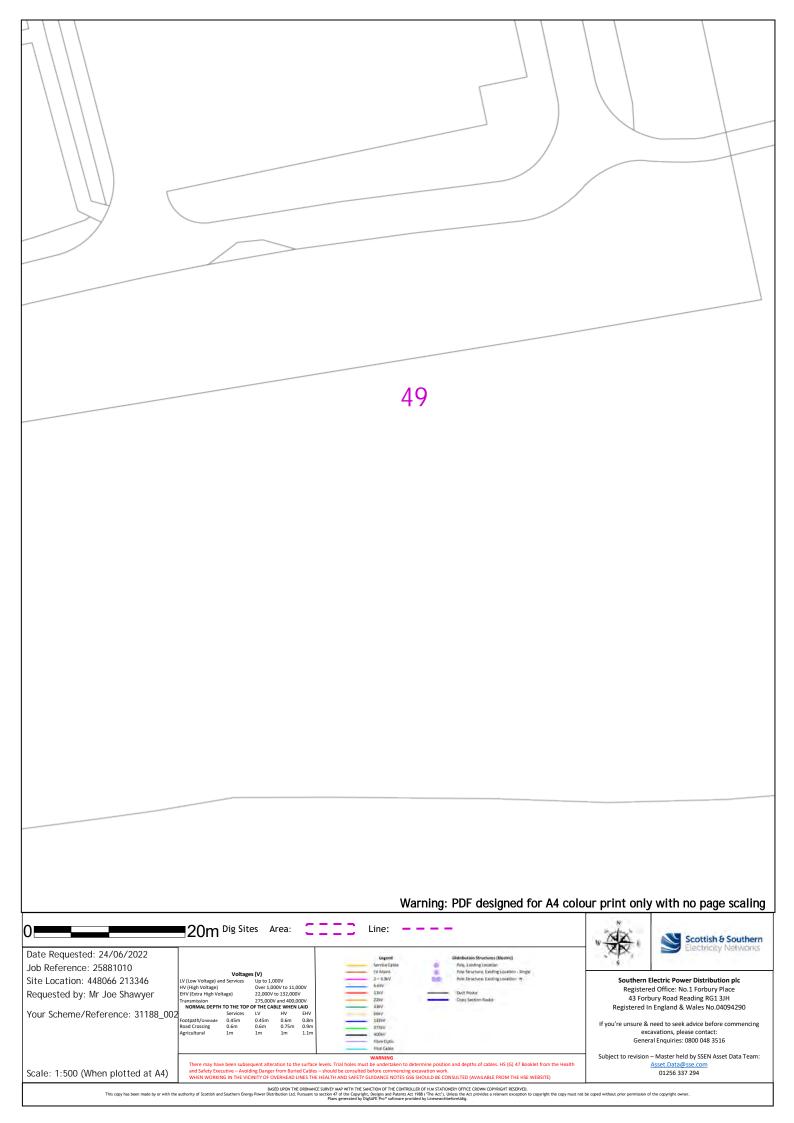


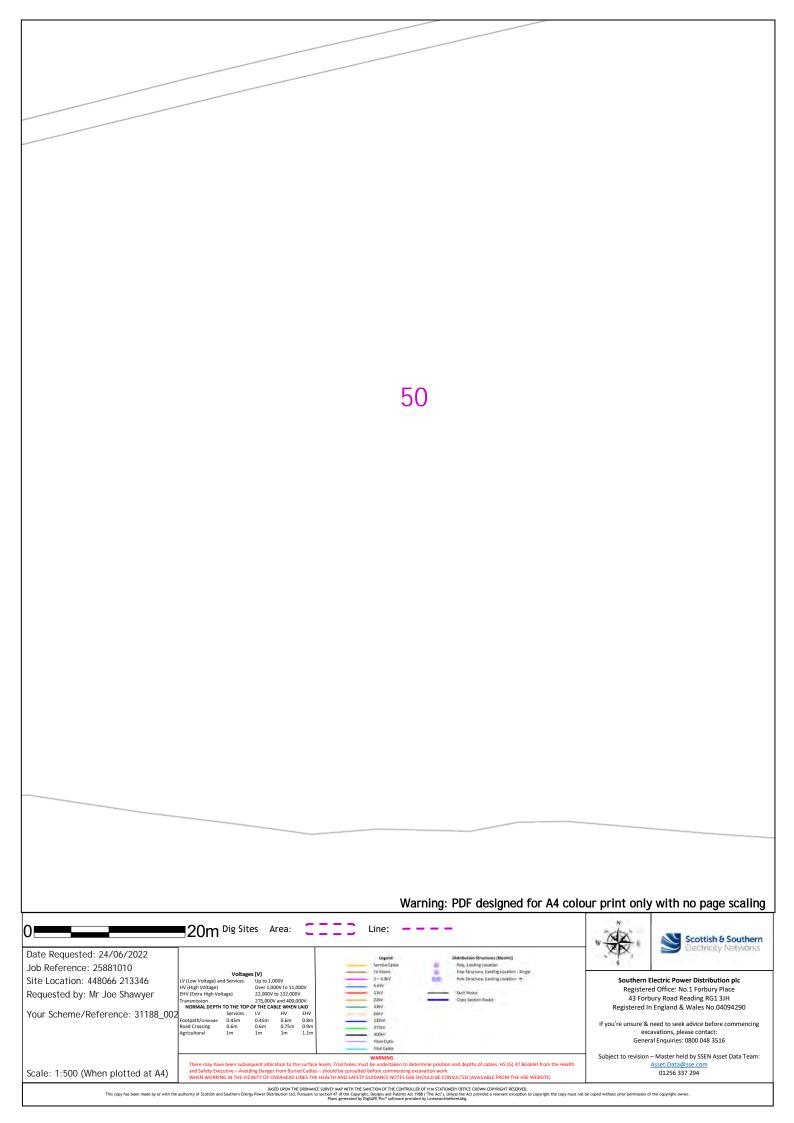


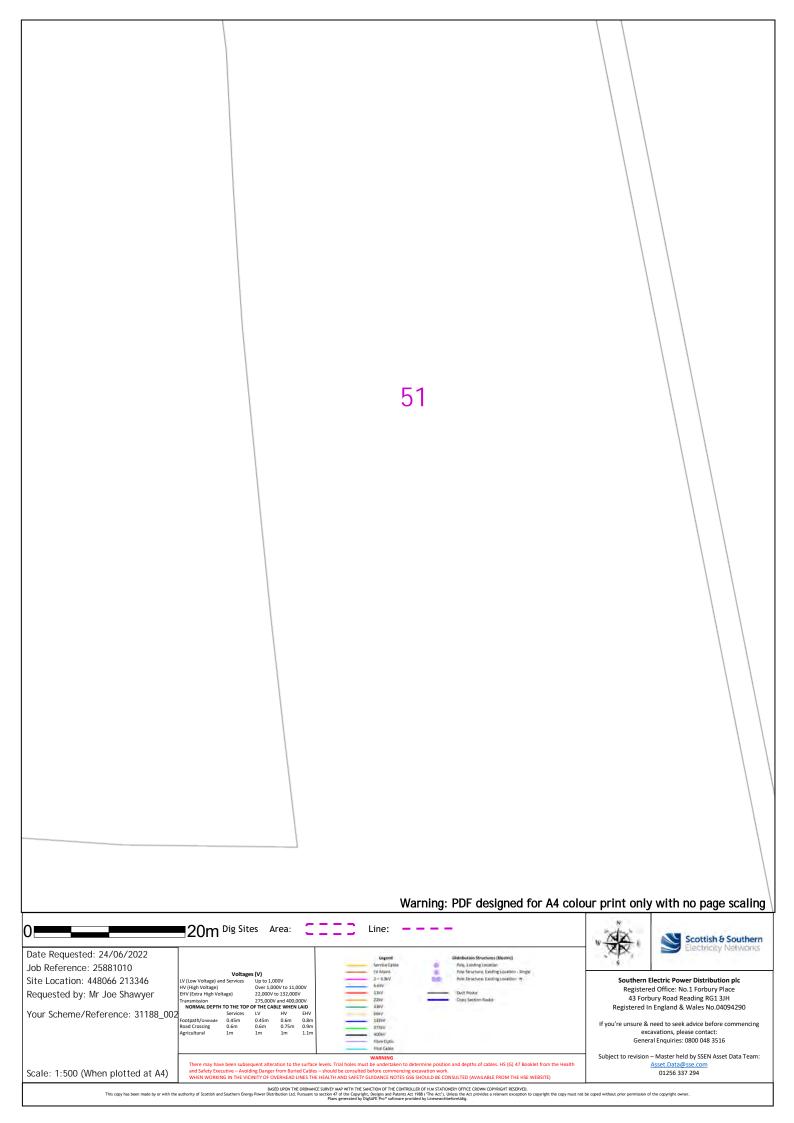




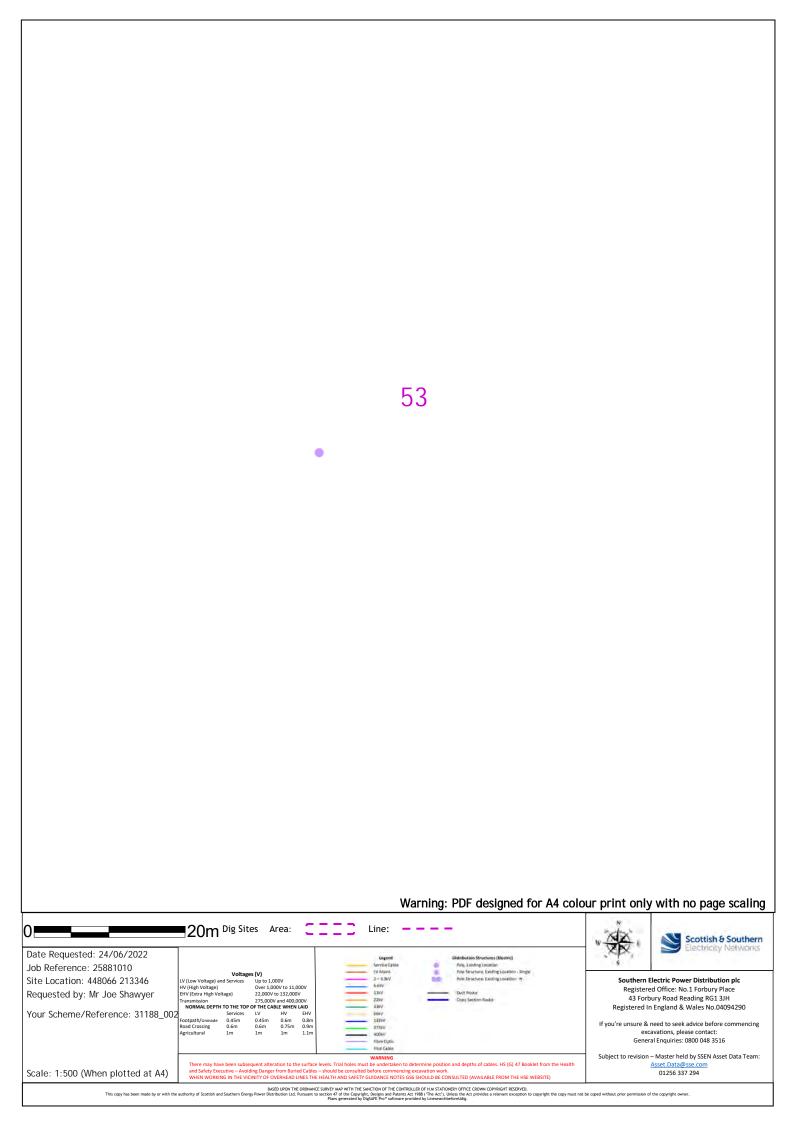


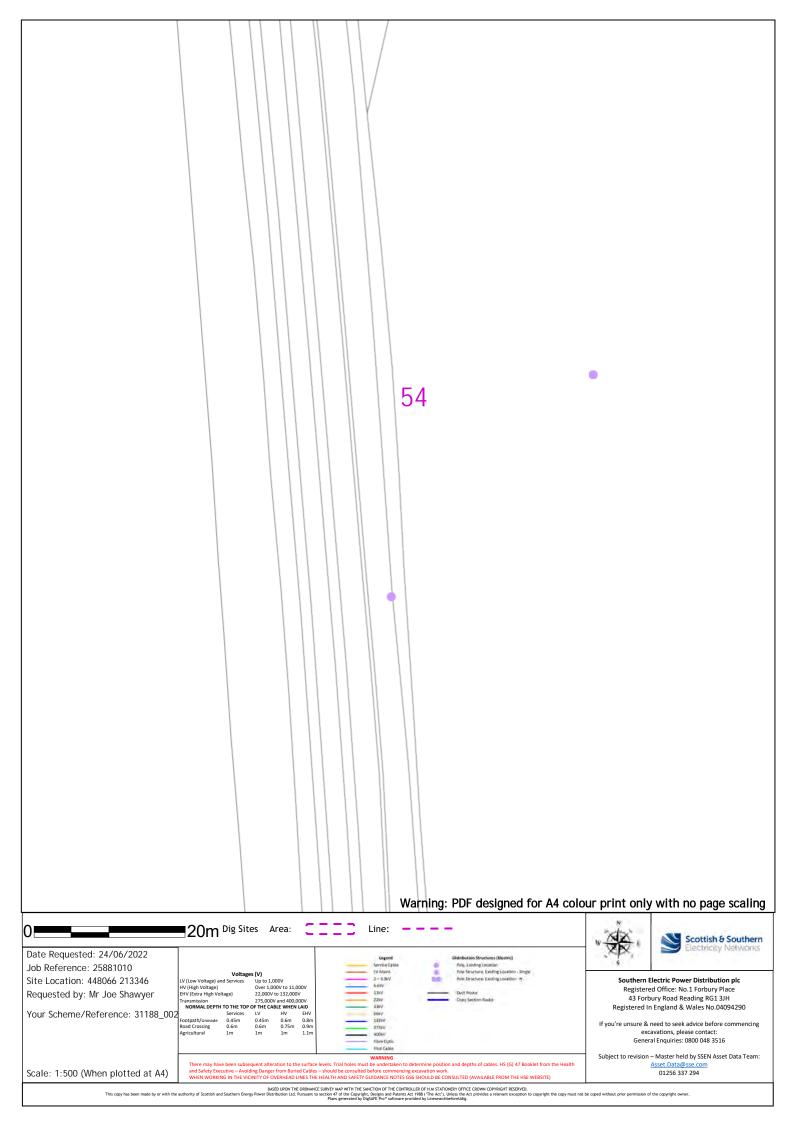




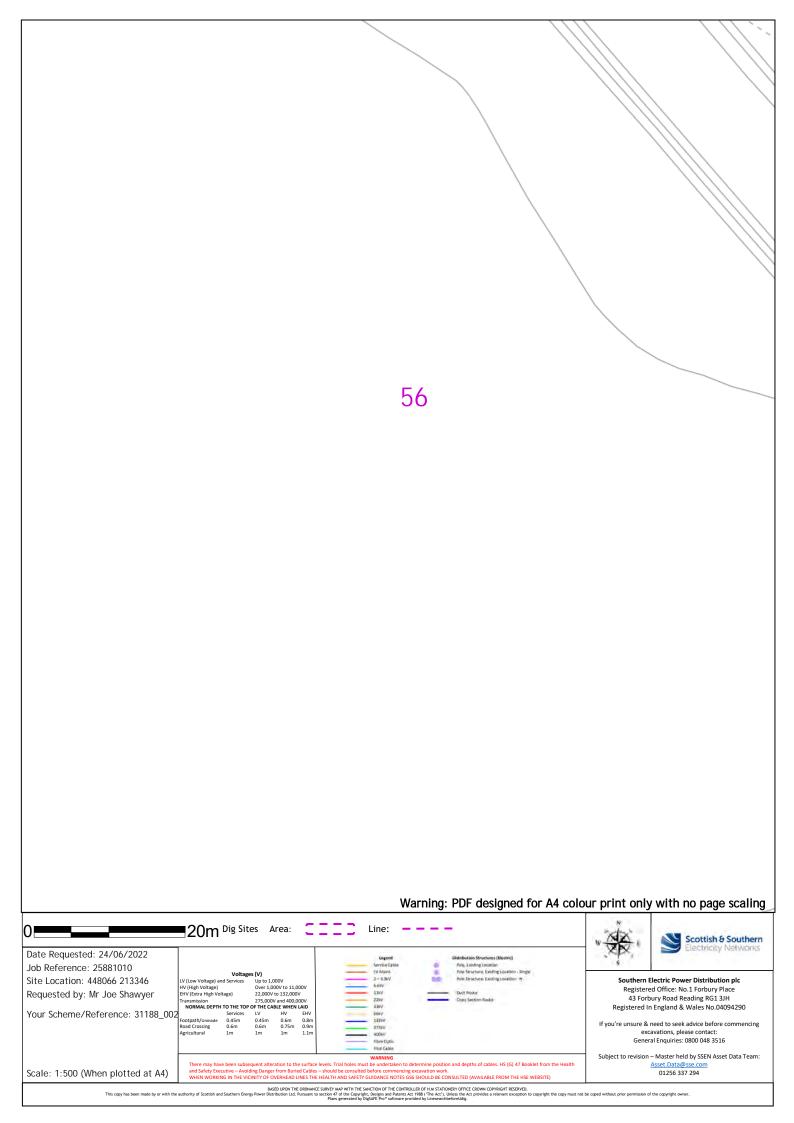


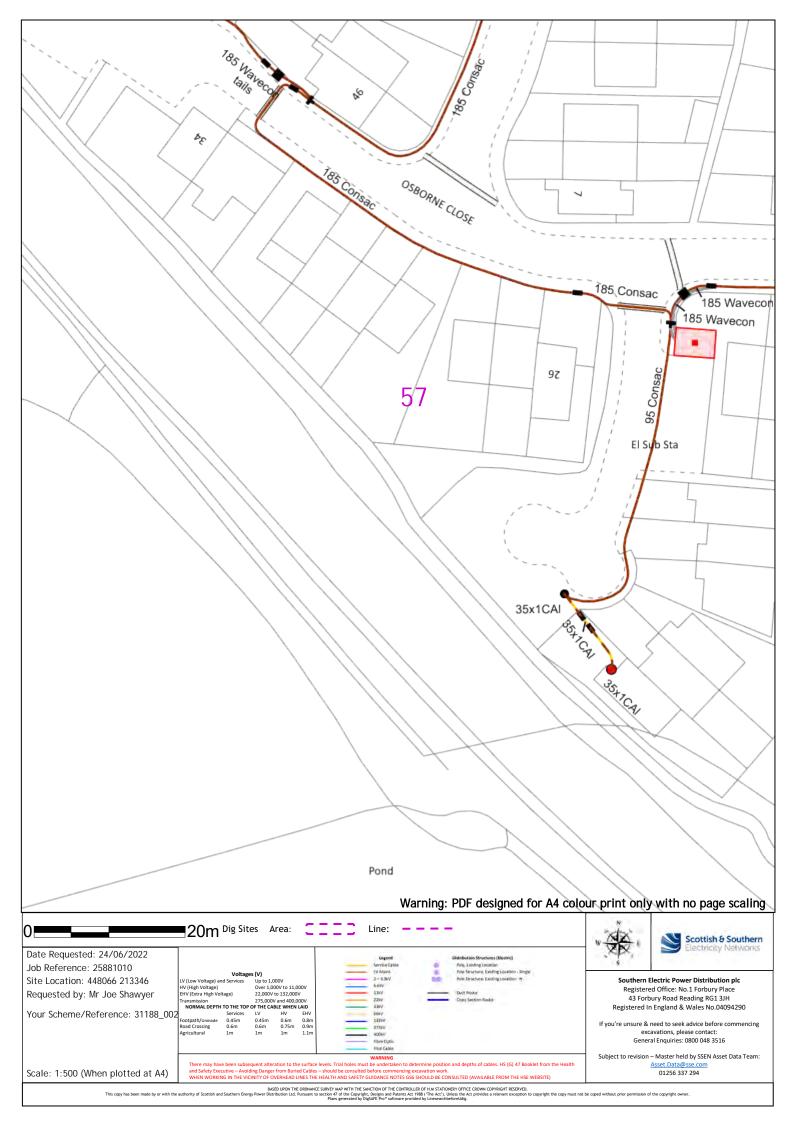
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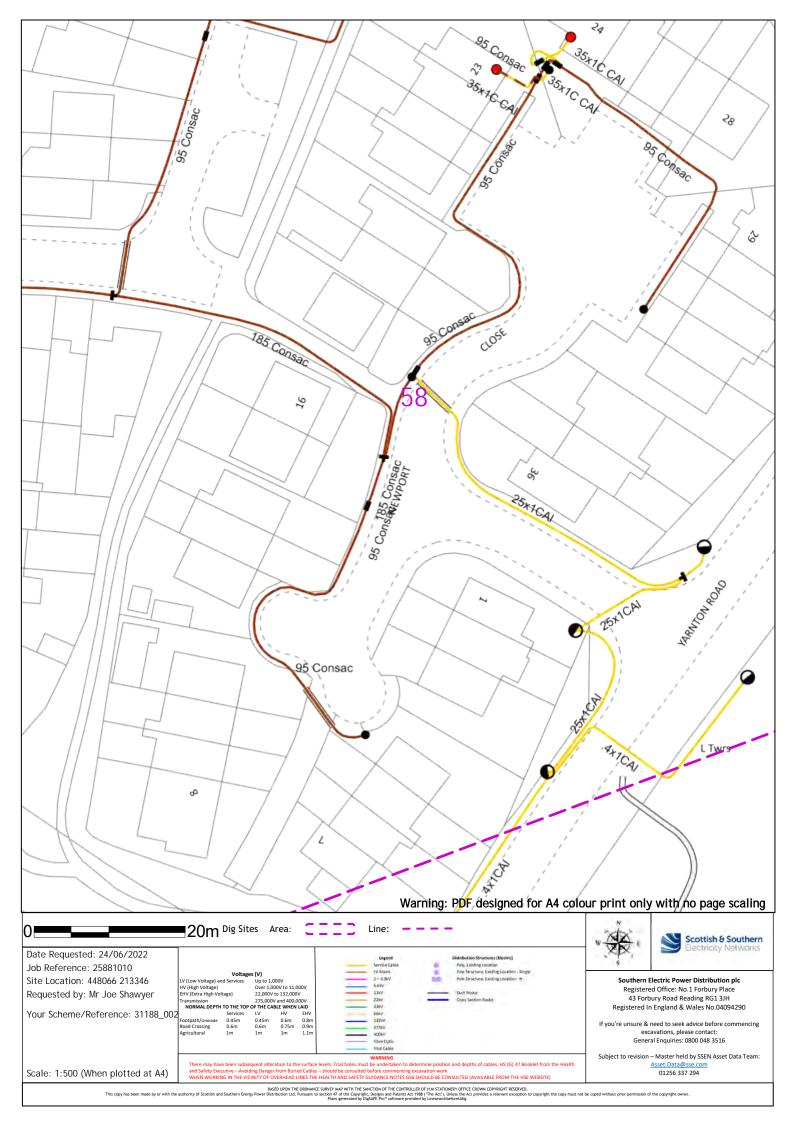


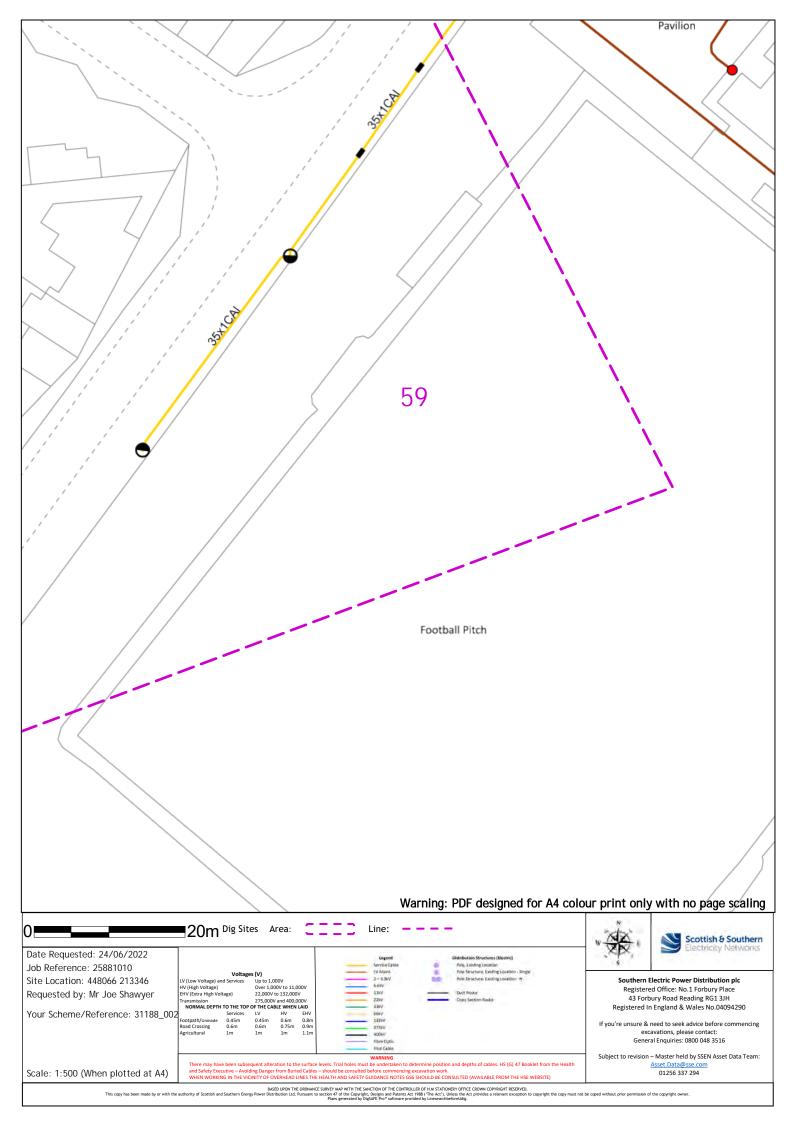


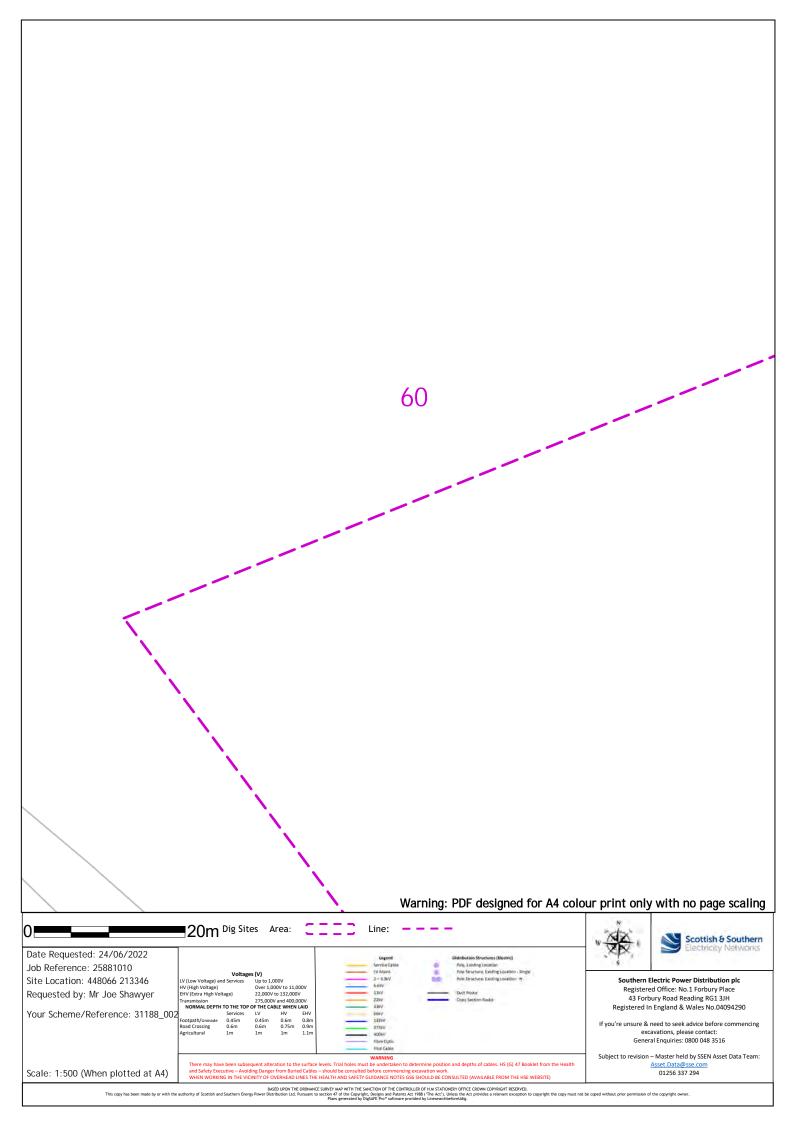
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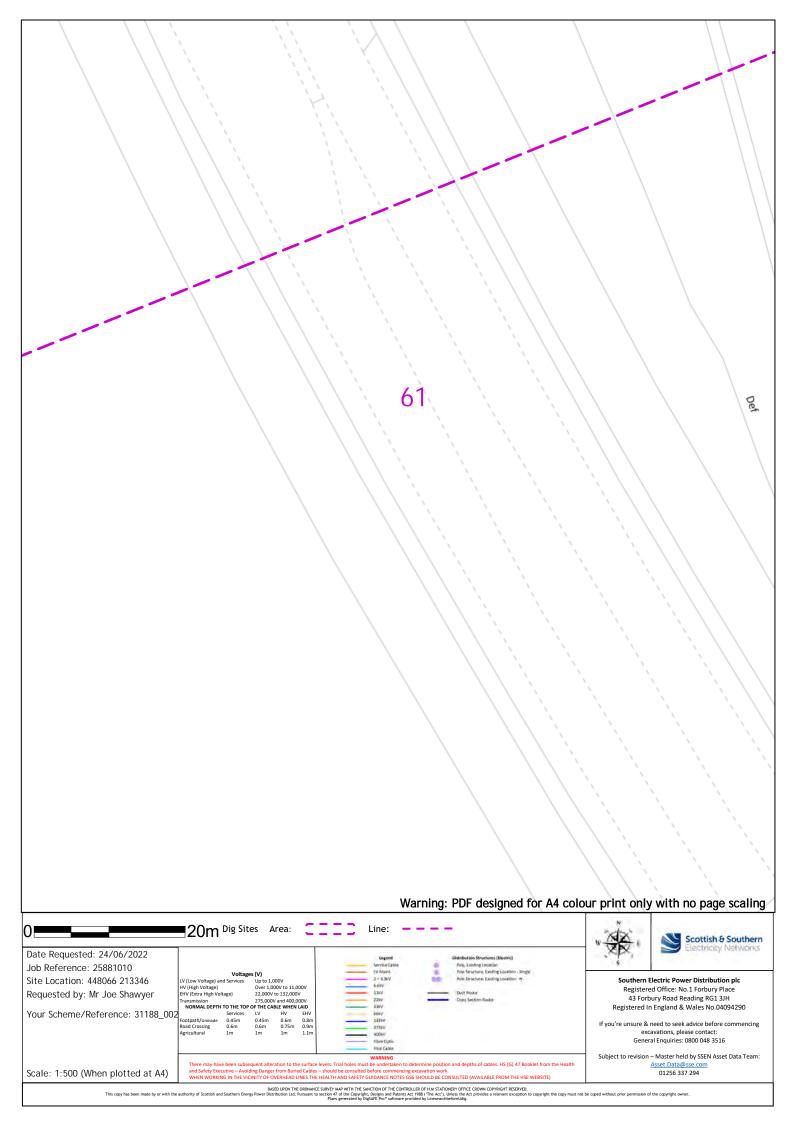


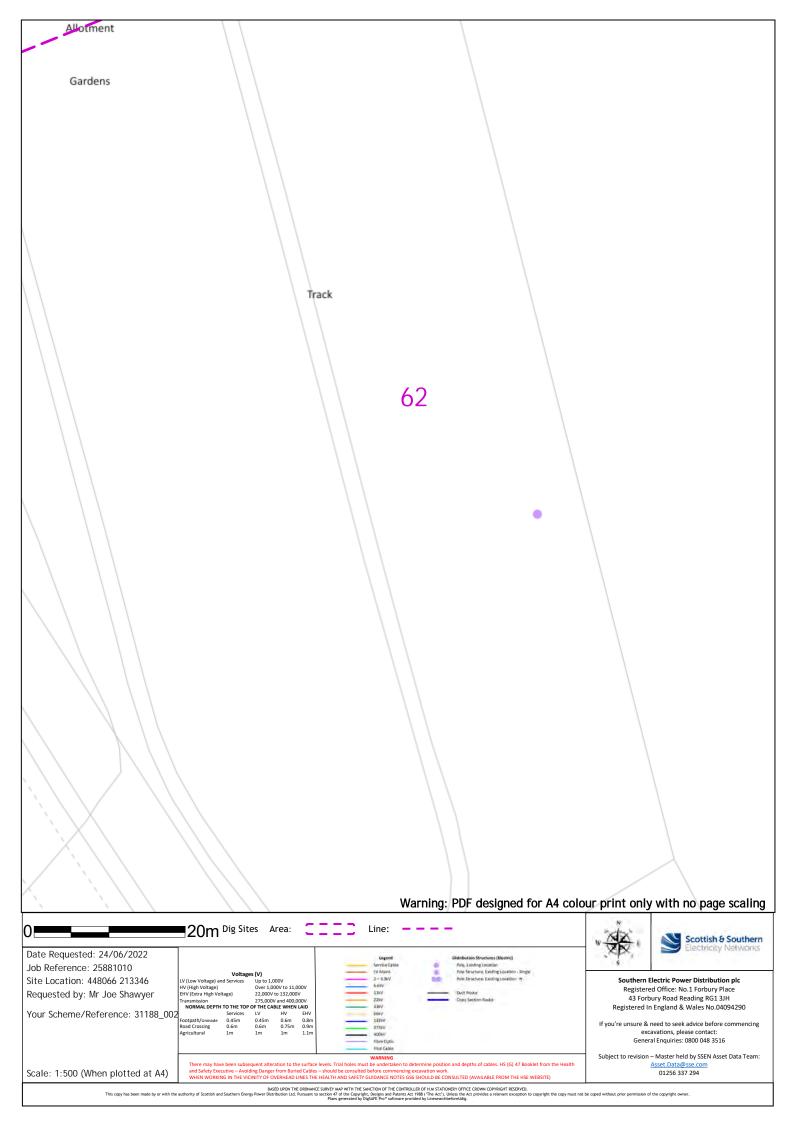


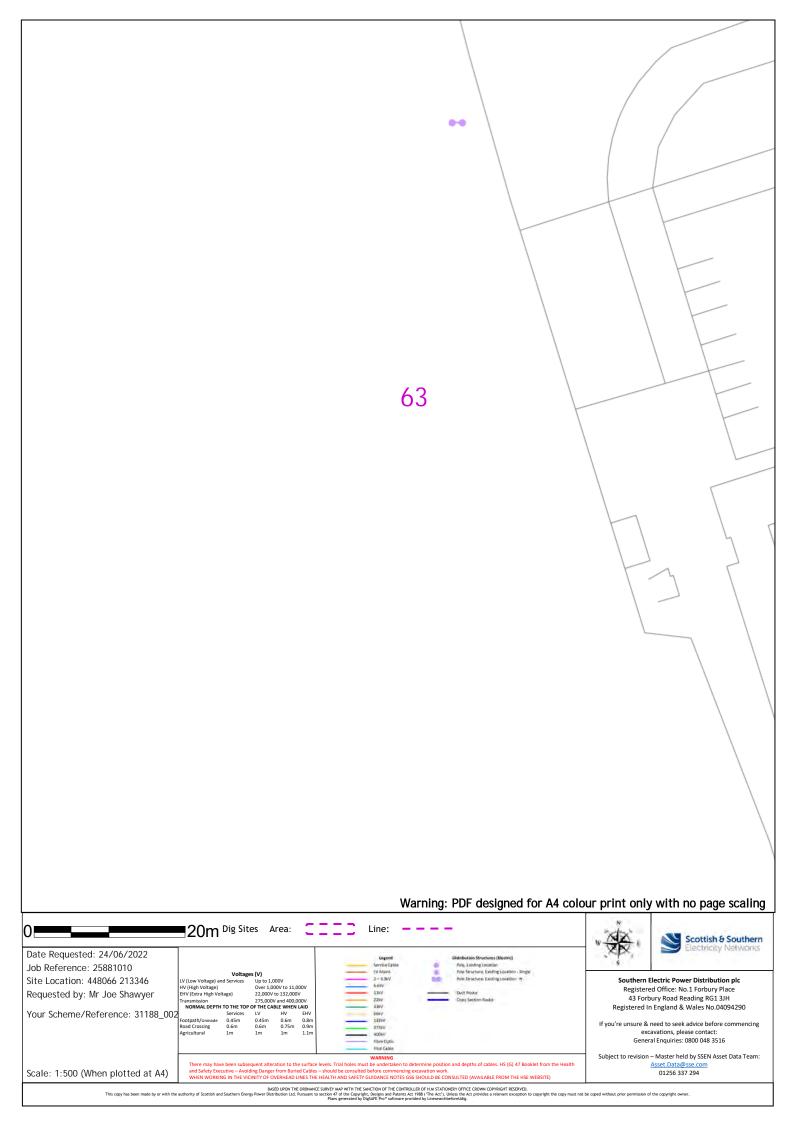


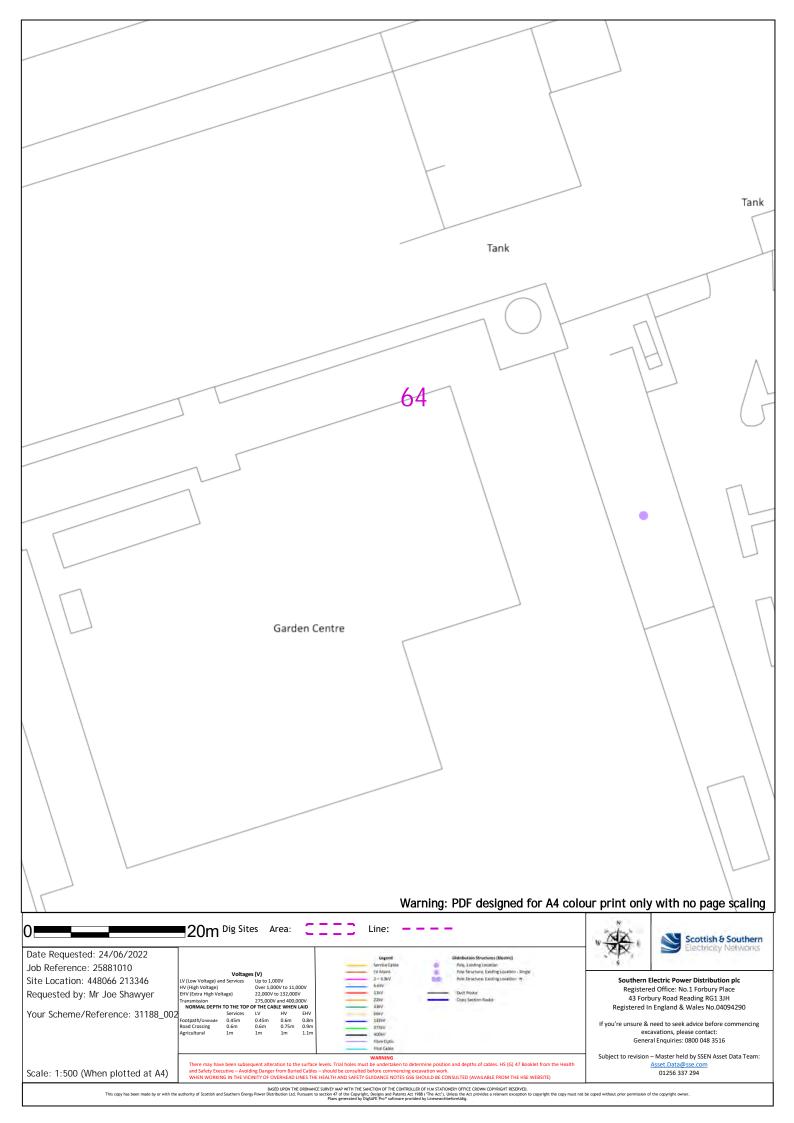


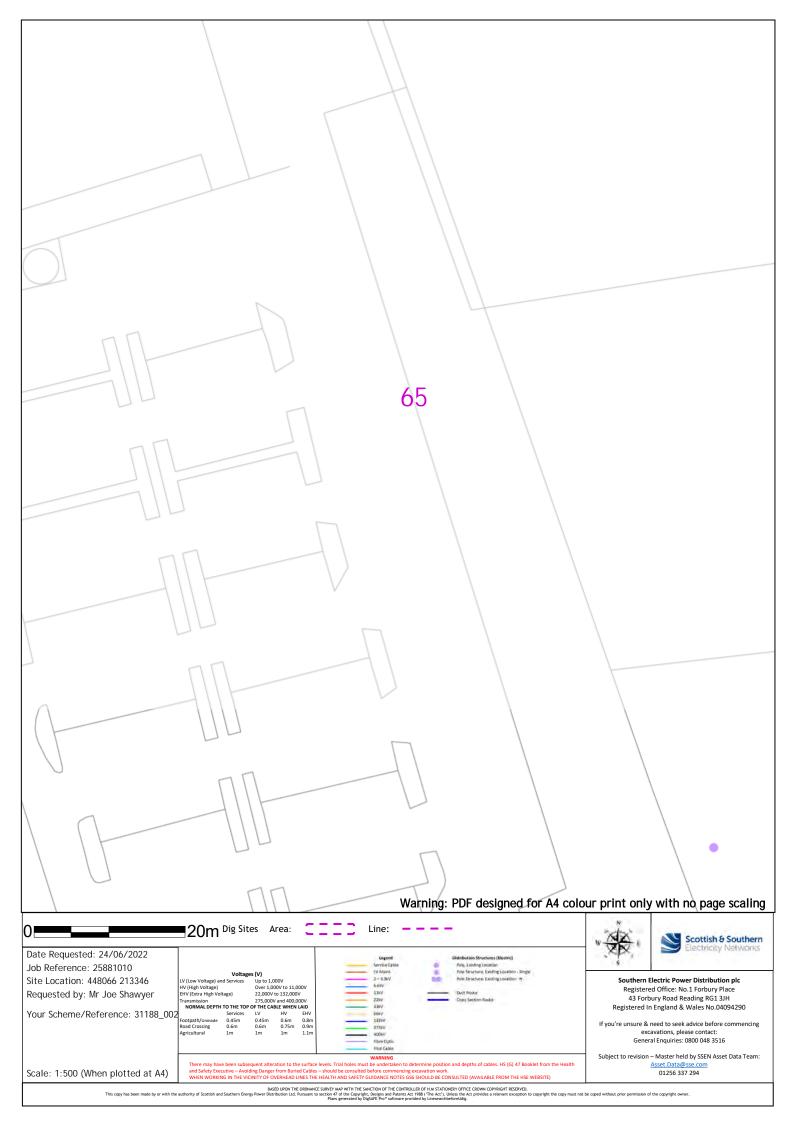


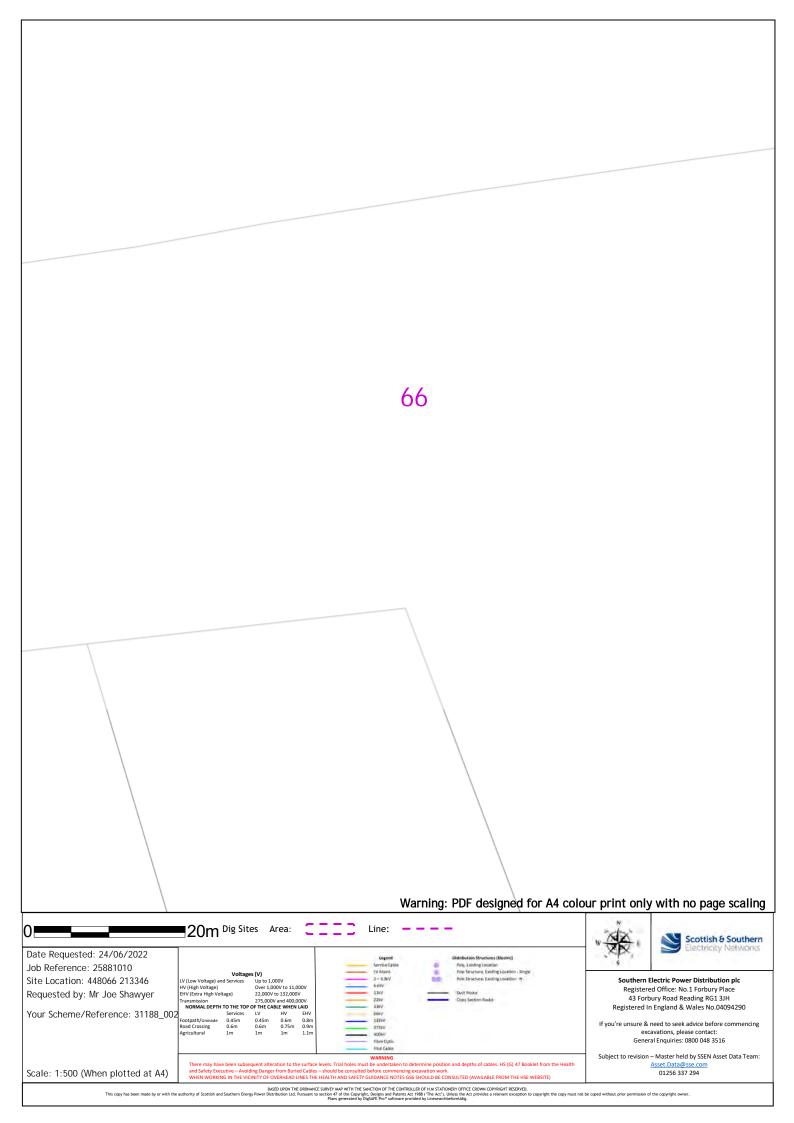


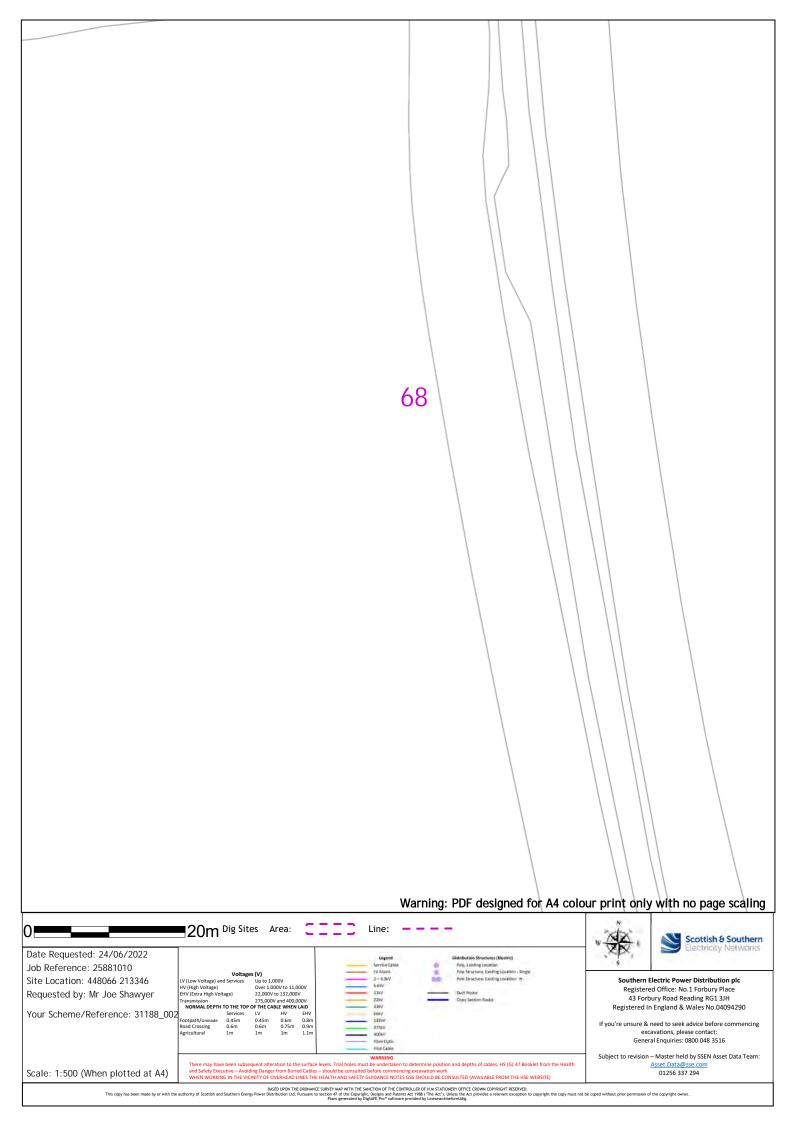


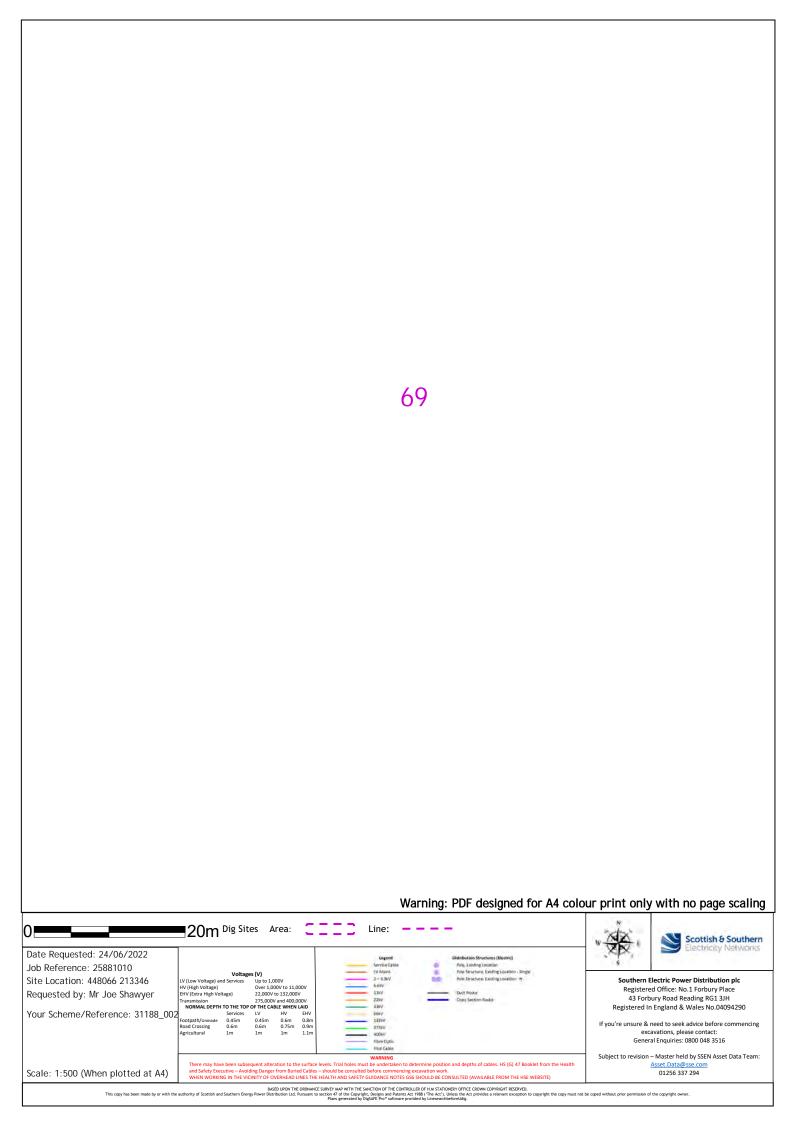












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