

Hillingdon Hospital Redevelopment

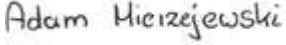
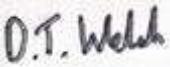
Utilities Survey Report

The Hillingdon Hospitals NHS Foundation Trust
RIBA Stage 2

THHR_01-ACM-ZZ-XX-RP-BS-125003

25 April 2022

Quality information

Prepared by	Checked by	Approved
		Paul Stannard
		
Harry Egan Mechanical Engineer	Adam Mierzejewski Associate Director	Paul Stannard Director
Daniel Welsh Graduate Electrical Engineer	Stephen Rowlands Associate Director	

Revision History

Revision	Revision date	Details	Authorized	Name	Position
P01	01/04/2022	Draft for Review	AM	Adam Mierzejewski	Associate Director
P02	25/04/2022	First Issue	AM	Adam Mierzejewski	Associate Director

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

The Hillingdon Hospitals NHS Foundation Trust
Hillingdon Hospital
Pield Heath Road
Uxbridge, UB8 3NN

Prepared by:

AECOM Limited
1 Callaghan Square
Cardiff CF10 5BT
United Kingdom

T: +44 (0)29 2005 1500
www.aecom.com

©April 2022 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

Table of Contents

1. Executive Summary.....	5
Project Overview	5
2. Existing Utility Services and Diversions.....	8
Existing Drainage Infrastructure / Diversions	8
Existing Gas Infrastructure / Diversions	8
Existing Water Infrastructure	9
Existing Electricity Infrastructure	9
Existing Telecommunications Infrastructure	9
3. Proposed Utility Services.....	10
Proposed Drainage Infrastructure	10
Proposed Gas Infrastructure	10
Proposed Water Infrastructure	10
Electricity Infrastructure.....	10
Telecommunications Infrastructure.....	11
Appendix A Document Copies (Utility Enquiries).....	12
A.1 Existing Drainage Infrastructure - Thames Water	12
A.2 Existing Gas Infrastructure - Cadent Gas	17
A.3 Existing Water Infrastructure - Affinity Water.....	18
A.4 Existing Electricity Infrastructure - Scottish & Southern Electricity Networks (SSEN).....	19
A.5 Existing Telecommunications Infrastructure - Openreach	43
Appendix B Utility Diversions	52
B.1 Drainage Infrastructure Diversions	52
B.2 Domestic Water Diversions.....	54
B.3 Gas Diversions	55
B.4 Electricity Infrastructure Diversions.....	56
B.5 Site Telecoms, Fire & Security Diversions	61
Appendix C Proposed Utility Services	62
C.1 Proposed Drainage Infrastructure	62
C.2 Proposed Domestic Water Infrastructure	63
C.3 Proposed Electrical Services	64
C.4 Proposed Telecommunication Services	66

Figures

No table of figures entries found.

Tables

No table of figures entries found.

1. Executive Summary

This Utilities Survey Report has been prepared by AECOM to accompany hybrid planning application being submitted by the Applicant, Hillingdon Hospital NHS Foundation Trust, to the London Borough of Hillingdon.

The proposal comprises of hybrid planning application for:

1. FULL application seeking planning permission for demolition of existing buildings and redevelopment of the site to provide the new Hillingdon Hospital, multi-storey car park and mobility hub, vehicle access, highways works, associated plant, generators, substation, new internal roads, landscaping and public open space, utilities, servicing area, surface car park/ expansion space, and other works incidental to the proposed development.
2. OUTLINE planning application (all matters reserved, except for access) for the demolition of buildings and structures on the remaining site (excluding the Grade II Furze and Tudor Centre) for a mixed-use development comprising residential (Class C3) and supporting Commercial, Business and Service uses (Class E), new pedestrian and vehicular access; public realm, amenity space, car and cycling parking. This report provides a summary of current and ongoing negotiations with incumbent utility providers. It demonstrates that a robust utility infrastructure strategy has been considered to support the application, ensuring that the development can be accommodated by the surrounding utility infrastructure, following appropriate reinforcements.

Two key elements have been considered to date:

1. Diversions, Disconnections and Accommodation strategy - the impact on existing infrastructure.
2. New Connections and Reinforcement strategy - the impact on the existing infrastructure locally and upstream in accommodating the increased infrastructure demand.

The following utility service providers have been consulted as part of this application. Note that searches are not exhaustive and other providers may exist in the locality. It is anticipated that new connections for the buildings will be derived from the following utility providers.

Drainage	Thames Water - Drainage/ Sewers Operator
Gas	Cadent Gas – Gas supplier
Water	Affinity Water - Incoming Mains water Operator
Electricity	Scottish & Southern Electricity Networks (SSEN) - Electricity Supplier
Telecommunications	Openreach – British Telecommunications Supplier

Project Overview

The Utilities Survey Report pertains to the phase 1A and phase 1B scope of works:

- Replacement hospital building (79,603.6 sqm GIA) of basement, ground plus seven storeys on the western extent of the site incorporating a linked mobility hub and multi storey car park (MSCP) for 781 car spaces.
- High quality landscaping buffer fronting Royal Lane.
- New Vehicle access to site.

Phase 1C is within the detailed boundary but will be completed following the demolition of the wider site.

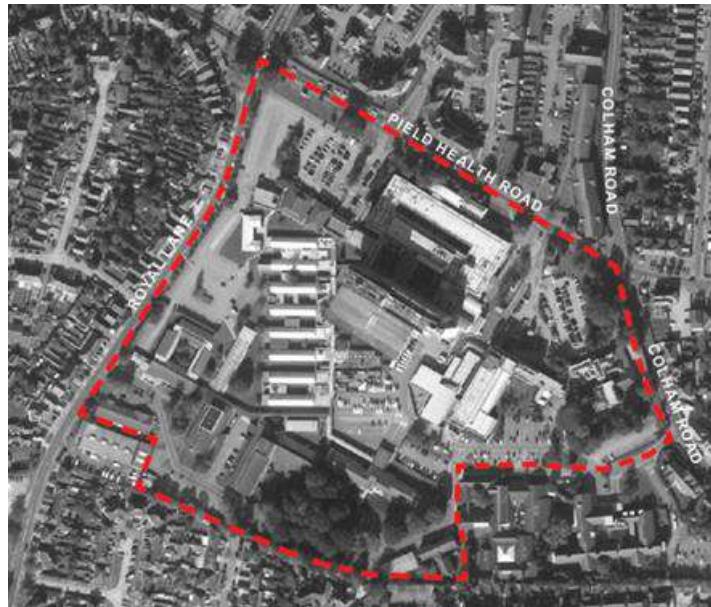
Phase 2 is outside of the detailed application boundary and is not within the scope of this utilities report. A developer will liaise with the relevant parties at the reserved matters stage.

The new Hospital & MSCP will be built on the site of the existing Hillingdon Hospital, where the existing Hospital building/s must stay operational until the new Hospital is completed, and services can be transferred across. On completion the existing Hospital will be demolished.

The design strategy for the new buildings will allow for future expansion/growth by incorporating Modern Methods of Construction (MMC), allowance for future plant, and allowance for maintenance via dedicated access routes.

Existing Hillingdon Hospital Site:

Site Address:
Hillingdon Hospital
Field Heath Road,
Uxbridge,
UB8 3NN



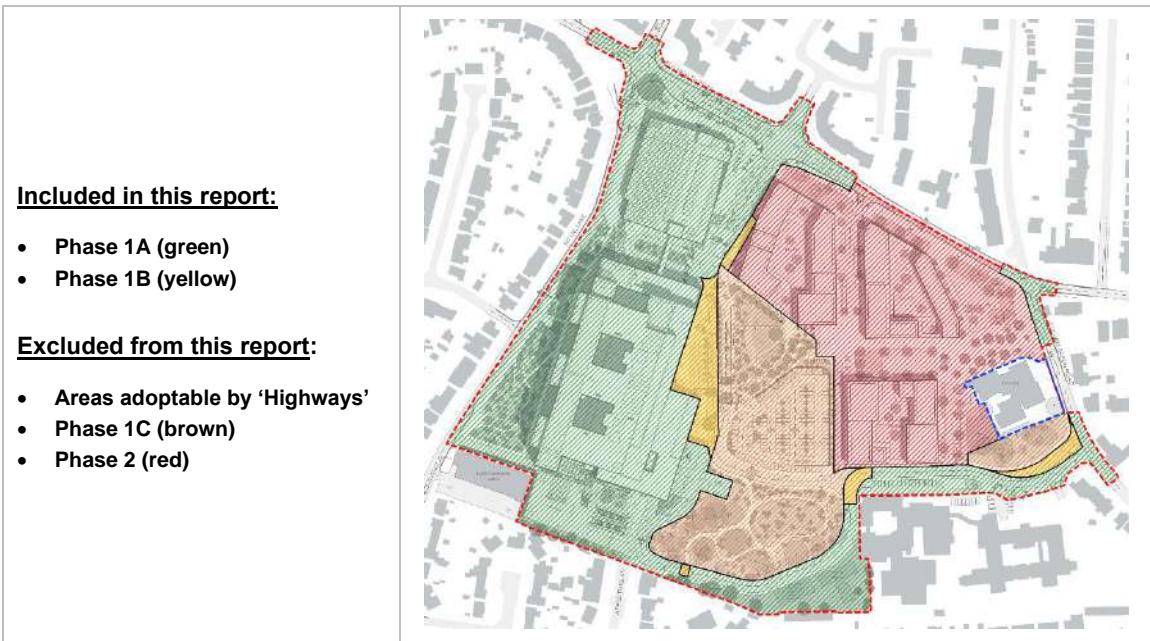
Proposed Hillingdon Hospital Site:

- New Hillingdon Hospital and Multi-storey Car Park (blue)
- Public Open Spaces (green)
- Surface Car Park (red)
- Residential Plots (yellow)
- FM/Service Yard (purple)

Red dotted line indicates application boundary.

Blue dotted line indicates other land in applicant's ownership.

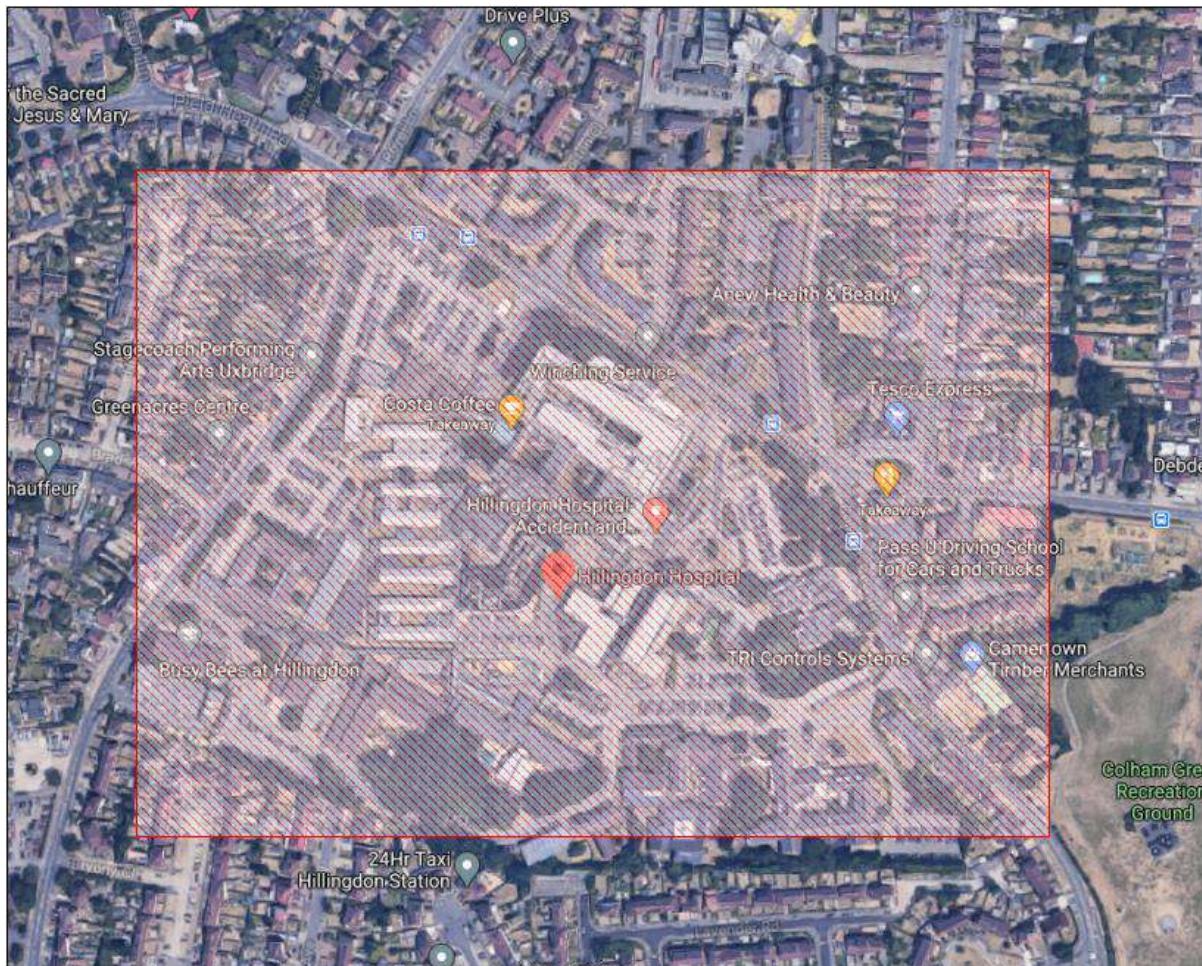




2. Existing Utility Services and Diversions

Investigations of the primary Utility Providers for Electricity, Gas, Water and Telecommunications have been carried out. This report identifies the organisations contacted, the information they have provided, and a summary dialogue on the content of the utility maps located in Appendix A of this document.

The following image indicates the extent of area of the search and enquiry area.



Note that further full utility record searches will be required to identify any services in the vicinity of the planned works area closer to the time of the works.

Any existing drawings obtained from the utility records search may be out of date, and so the statutory providers record information drawings are only to be taken as guidance. Any results of underground utility surveys done by the relevant design team would be prioritized to know and understand the constraints, positions and depths of the buried features to assist with the proposed design works.

Existing Drainage Infrastructure / Diversions

Thames Water owns the existing sewerage infrastructure. The proposed development is currently served by a mix of existing foul and surface water infrastructure both surrounding and within the site confines.

The investigations regarding the existing Drainage infrastructure have provided utility map information from Thames Water - located within Appendix A1 of this document.

Prior to the works starting on site, infrastructure works which involve moving the existing attenuation tank will be completed, details of this can be found within the Appendix B1. These works have been instructed and will be completed by July 2022.

Existing Gas Infrastructure / Diversions

Cadent Gas is the asset owner and supplier of the gas infrastructure.

The investigation regarding the existing Gas infrastructure have provided the utility map/s information from Cadent Gas - located in Appendix A2 of this document.

There are current Cadent gas low pressure (LP) mains encompassing the whole site and a 315mm medium pressure (MP) main running along Pield Heath road. A MP gas supply is currently serving the existing main hospital building to serve existing equipment.

During the preparation of the site, gas supplies will be stripped back to the edge of the site and capped. The detail for this diversion works has been completed by Northmores and can be found within Appendix B3.

Existing Water Infrastructure

The investigation regarding the existing water infrastructure has provided the utility map/s information from Affinity Water - located in Appendix A3 of this document.

The referenced utility map indicates that there are two high-capacity water mains routed close to the Hospital boundary to the west of the site, beneath Royal Lane. We anticipate that both of these supplies may have capacity to serve the new development however this will be investigated in the coming design stages.

From review of the utility map there are existing hydrants located around the new Hillingdon Hospital site. During the next design stages these will be investigated further to determine whether they will provide adequate coverage for the new development.

At this stage it is understood there are a number of existing, decommissioned, boreholes located on the current Hospital site. These will not be used in the coming design stages due to the importance of water supply to serve the new hospital.

Prior to the start of works on site diversions will take place on the site, this has been detailed by Northmores and is included within the Appendix B2.

Existing Electricity Infrastructure

The investigations regarding the existing Electricity infrastructure have provided the utility map/s information from Scottish & Southern Electricity Networks (SSEN) - located in Appendix A4 of this document.

There is currently an 11kV/LV network distribution located around the existing Hospital site, and the existing site electrical distribution will be modified, amended and/or removed from the new Hillingdon Hospital Redevelopment area. These works are with the intent of completely clearing the proposed site, and to ensure the existing Hospital facilities continue to deliver the current healthcare services. All these works will be carried out under an enabling works contract.

Discussions and negotiation have been carried out by the consultants Ridge and Reach Active Ltd (representing Scottish and Southern Electricity Networks), regarding the DNO services to be amended, modified or diverted. The negotiations formulated into the current SSEN Quote and Proposal Ref: ETP363/2 Dated 7th September 2021.

The DNO record information received from SSEN regarding these negotiations and proposals are provided in this report (Appendix B4), and summarised as follows:

- Removal of all SSEN Plant from the new Hillingdon Hospital site (Exclusion Zone)
- Removal and upgrade of temporary Hillingdon Hospital Substation for diverted services from Exclusion Zone.
- Diversions to relocate 2No. 1000kVA HV Meters from exclusion zone

Existing Telecommunications Infrastructure

The investigations regarding the existing Telecommunications infrastructure have provided the utility map/s information from Openreach - located in Appendix A6 of this document.

THHNFT is responsible for sourcing diversely routed incoming fibre and copper services. There are BT Openreach ducts in the vicinity of the site. If another communications/ fibre provider is to be utilised by THHNFT then duct provisions will need to be checked.

Prior to the start of works on site diversions will take place on the site, this has been detailed by Northmores and is included within the Appendix B4.

3. Proposed Utility Services

Proposed Drainage Infrastructure

The Trust has instructed AECOM to undertake a study on the proposed site and any future connections.

Full details including a drawing showing the future proposed connection locations can be found within the appendix section C1

An application has been made to Thames Water to complete a pre-development enquiry. It is likely that further modelling will be required and will be undertaken upon obtaining planning permission approval.

Thames Water predevelopment enquiry reference: PPLA DS6092936

Proposed Gas Infrastructure

There is no requirement for gas on the new Hillingdon Hospital Redevelopment site at this stage of the design.

Proposed Water Infrastructure

The Trust has instructed AECOM to undertake a study on the proposed site and any future connections which includes the potable water supply from Affinity Water.

Full details including a drawing showing the future proposed connection locations can be found within the appendix section C2

An application has been made to Affinity Water to complete a pre-planning enquiry and a capacity study (or similar) will be carried out to assess the impact on the existing water supply network. It is likely that further modelling will be required and will be undertaken upon obtaining planning permission approval.

It is currently assumed that there will be sufficient capacity to serve the new development from the existing 15" main located beneath Royal Lane.

Modifications may be required to the existing site following review of the GRP survey and site investigations a formal application will be made for both the modification and new site connections. This will be undertaken at the next stage.

Affinity Water pre-planning enquiry reference: DS0048774

The current proposal (which has been submitted to Affinity Water) is for the following:

- 1No Potable Water Connection to serve the main Hospital
- 1No Potable Water Connection to serve the multi-storey Car Park
- 1No Fire main connection to serve the main Hospital

Electricity Infrastructure

All existing site 11kV and LV systems will be modified, amended and removed from the new Hillingdon Hospital Redevelopment area under Enabling works to form an 'exclusion area'.

Discussions and negotiation have been carried out by the consultants Ridge (for the Customer), with Reach Active Ltd (representing Scottish and Southern Electricity Networks) to provide a new incoming Primary Electrical Supply - SSEN Quote and Proposal Ref: ETP363/2 Dated 7th September 2021. Information received regarding these negotiations and proposals are provided in this report and summarised as follows:

New Hillingdon Hospital:

Incoming Primary Electrical Supply (PES) Capacity – it was originally established that the PES capacity would be in the order of 7 MVA for the all-electric application and design, and delivered to site from two Scottish & Southern Electricity Networks (SSEN) Primary Sub-Stations, giving alternative supply in the event of fault or loss of one Primary DNO 11kV service.

During the Design Stages 1 & 2 the SSEN Proposal for this service was reviewed by AECOM, Reach Active and the Customer to consider interruption time options, and the SSEN network capacity availability. Consequently, amendments were agreed and a revised SSEN proposal (Ref: ETP363/2 Dated 7th September 2021), was then secured by the consultant Reach Active Ltd to deliver the following service on diverse routes:

- 10 MVA @ 11kV Primary Supply from the SSEN Yiewsley Primary SS as the normally 'normally live' service.

Note: this increased capacity to 10 MVA will now have allowance for future site growth in addition to agreed spare capacity for future growth of the new Hospital building.

- 10 MVA @ 11kV Primary Supply from the SSEN Hillingdon Primary SS as the secondary support service.

Note: this increased capacity to 10 MVA will now have allowance for future site growth in addition to agreed spare capacity for future growth of the new Hospital building.

- Refer to Appendix C3 for map information.

Within the later Design Stage process the load assessment will be regularly reviewed, when building accommodation spaces (SoA's) and in particular when Low Carbon technologies and selected Medical Equipment become known. However, the current estimated load analysis has indicated that a peak estimate electrical load will be in the order of 7 to 7.5 MVA – with the remaining spare capacity allocated to future growth.

New Multi-storey Car Park:

The new MSCP indicated on this site will be served from the new Hillingdon Hospital Incoming 10 MVA Supply described above, and from the customers side of the Meter. The MSCP will utilise the spare capacity allocated and described above for future growth.

Telecommunications Infrastructure

The new incoming service/s will be developed in the next design stage, where discussion will take place with agreed Service Providers and Trust ICT team.

It is proposed that the existing Telecoms connections are cut back to the boundary during construction as detailed within the diversions section.

The current assumption is:

- 4x BEFS to serve the main site
- A retail unit within the MSCP that is assumed to require an independent telecommunications feed
- A requirement to connect to other buildings on the wider masterplan

The current design is to provide common meet-me chambers on the site boundary to allow different service providers to get connections into the building from Royal Lane, then access around the East side for connections to Pield Health Road / Colham Green Road with the aim to provide access to many service providers to allow flexibility at the next stage.

All companies will be contacted at the next design stage to undertake their design and agree incoming service route into the development.

Full details including a sketch showing the future proposed connection locations can be found within the Appendix section C4

Appendix A Document Copies (Utility Enquiries)

A.1 Existing Drainage Infrastructure - Thames Water



Public Sewer Types (Operated & Maintained by Thames Water)

	A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks), to rivers or watercourses.
	Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Trunk Surface Water
	Storm Relief
	Vent Pipe
	Proposed Thames Surface Water Sewer
	Gallery
	Surface Main
	Sludge Rising Main
	Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve
	Dam Chase
	Fitting
	Merlet
	Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Control Valve
	Drop Pipe
	Auxiliary
	Weir

End Items

	Foul Rising Main
	Combined Rising Main
	Proposed Thames Water Rising Main
	Outfall
	Undefined End
	Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

	Public/Private Pumping Station
	Change of characteristic indicator (C.O.C.I.)
	Invert Level
	Summit
	Areas
	Lines denoting areas of underground surveys, etc.
	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

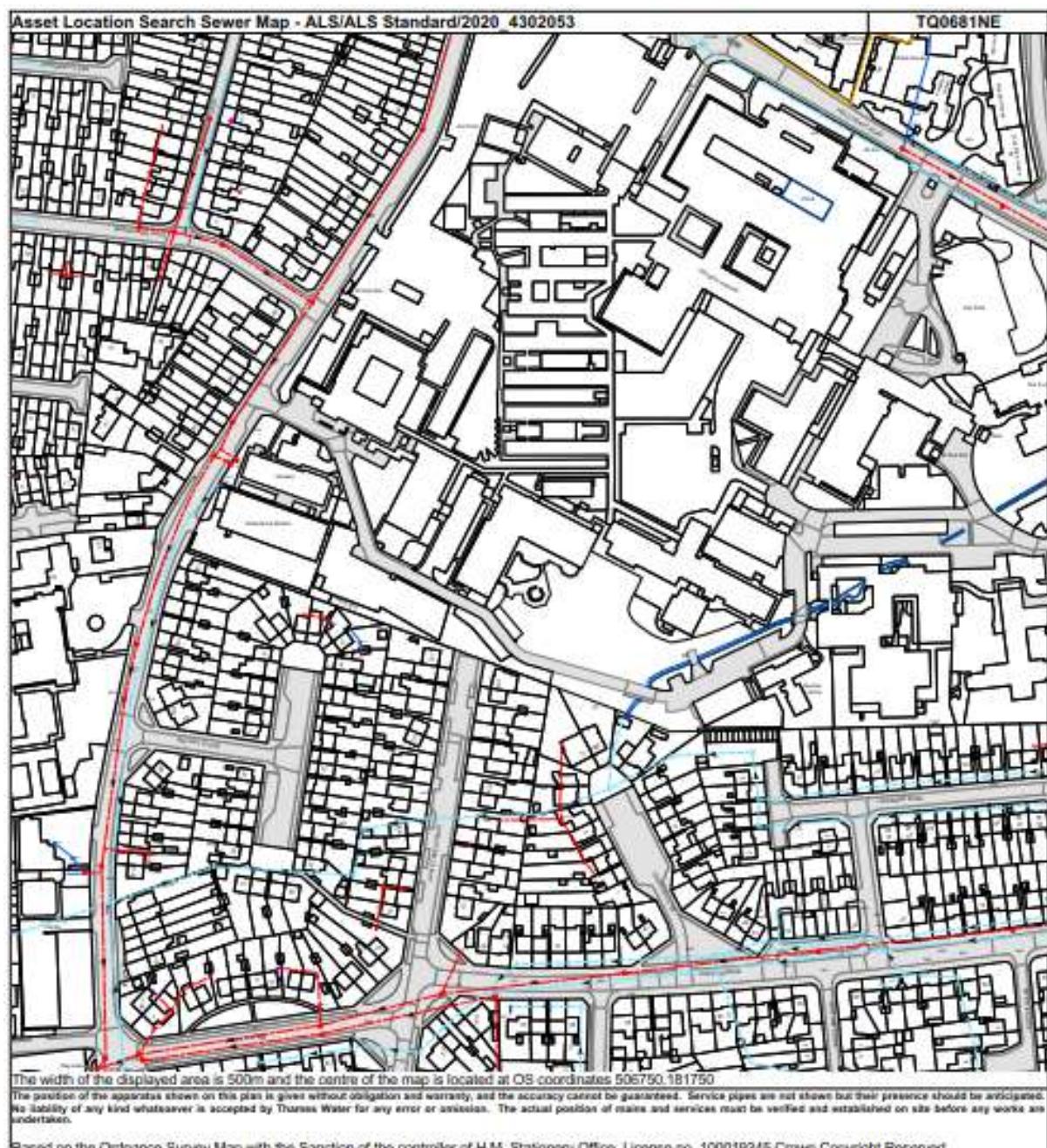
	Foul Sewer
	Combined Sewer
	Culverted Watercourse
	Proposed
	Abandoned Sewer

Notes:

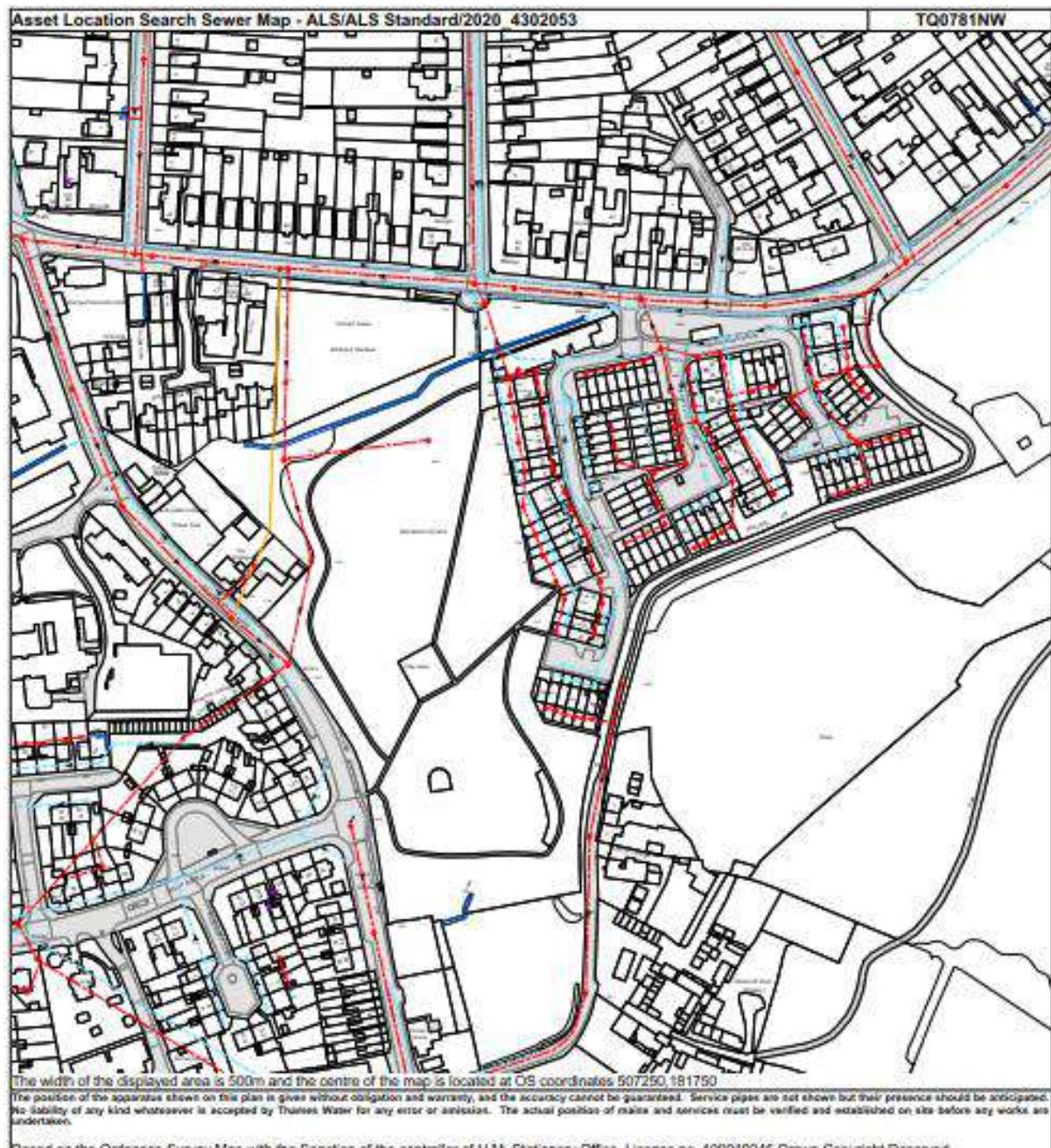
- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9146.





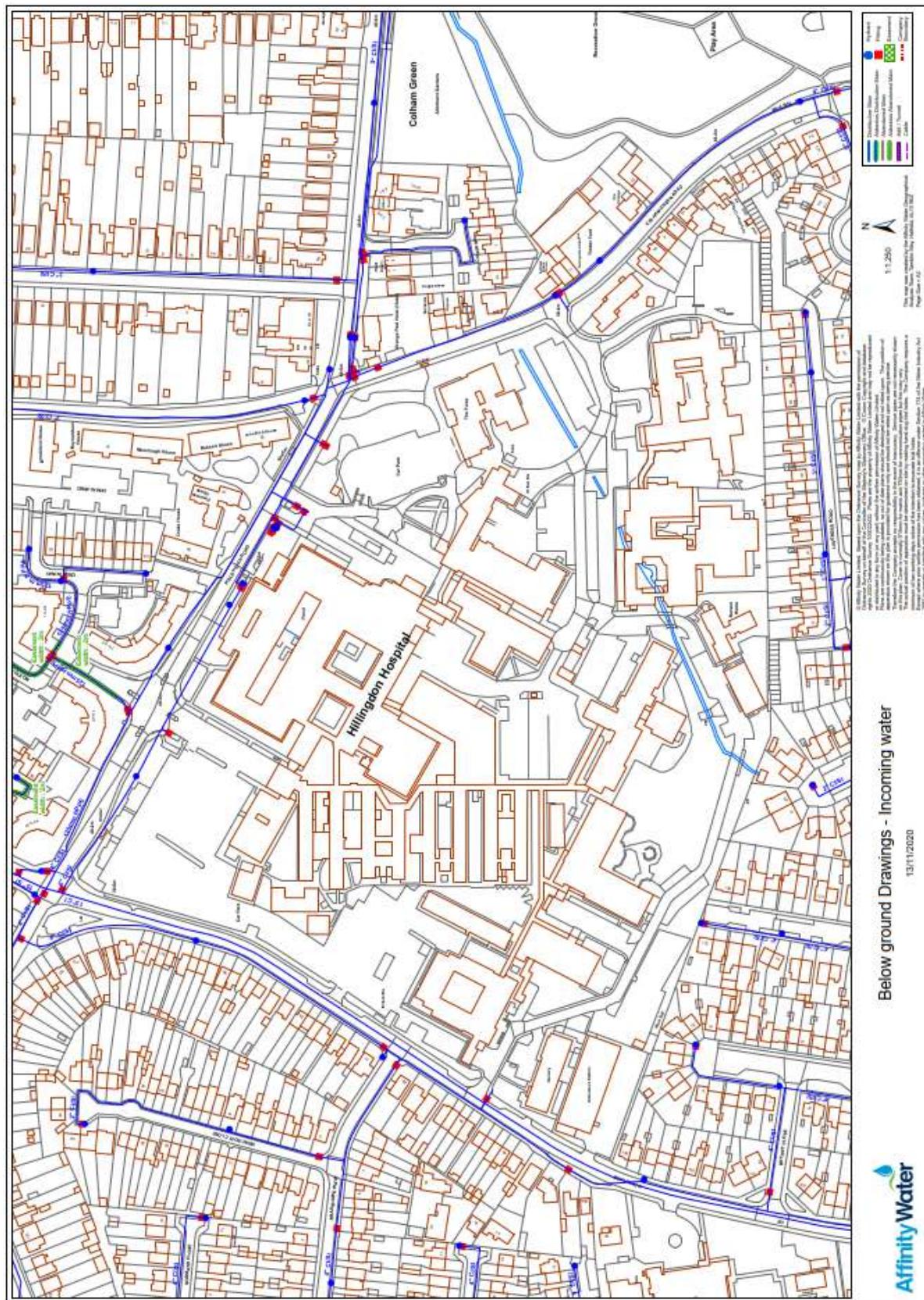




A.2 Existing Gas Infrastructure - Cadent Gas

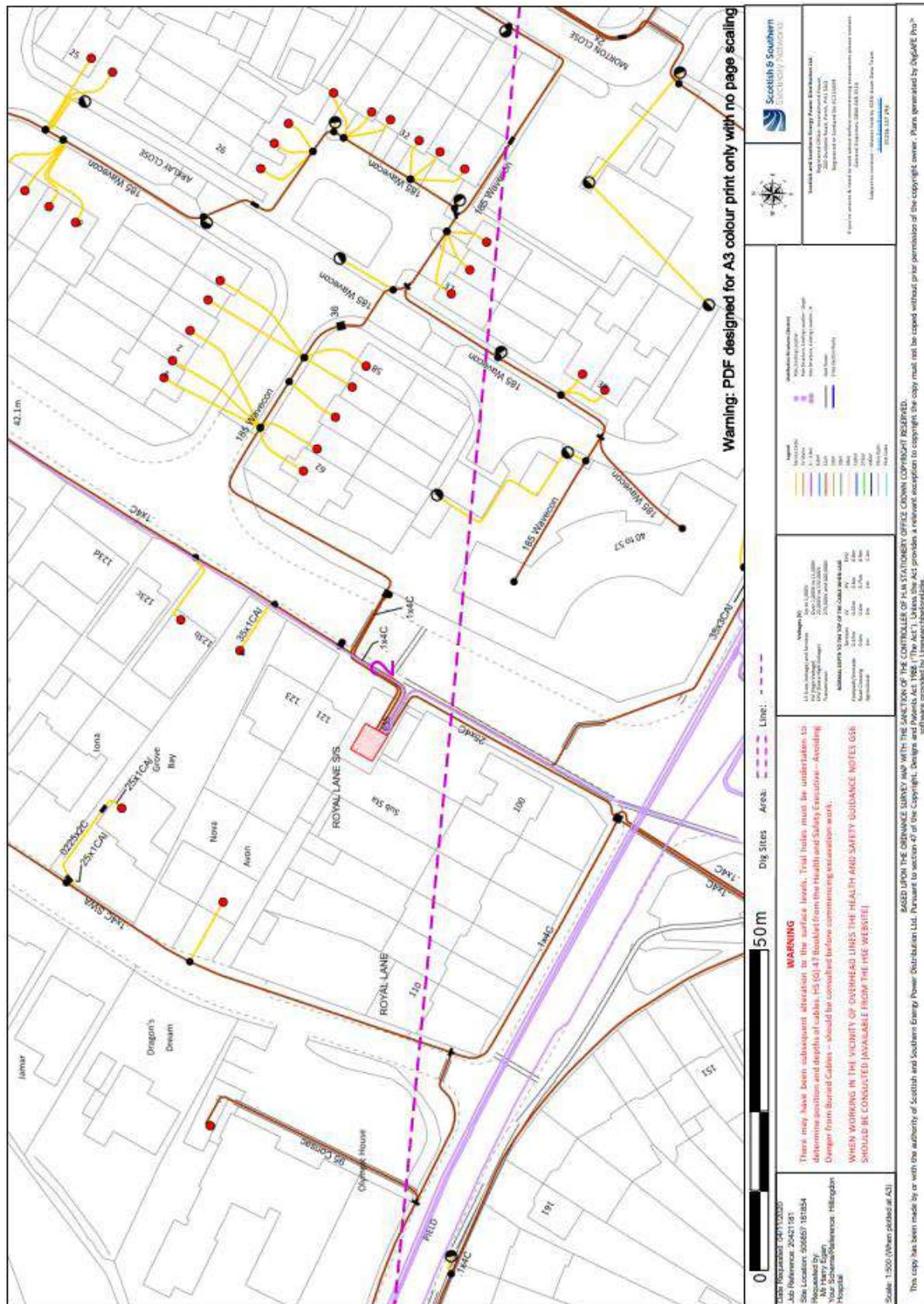


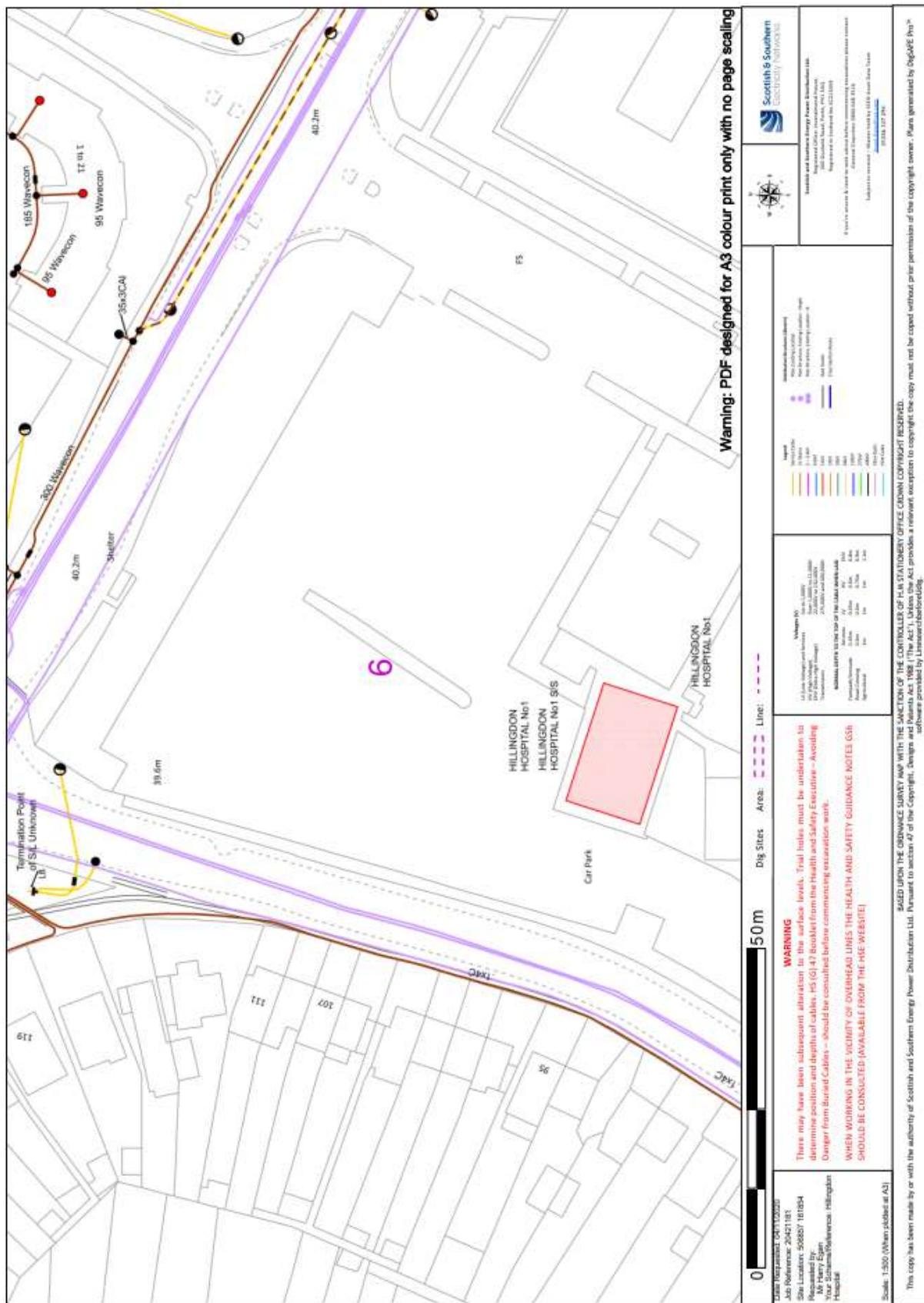
A.3 Existing Water Infrastructure - Affinity Water

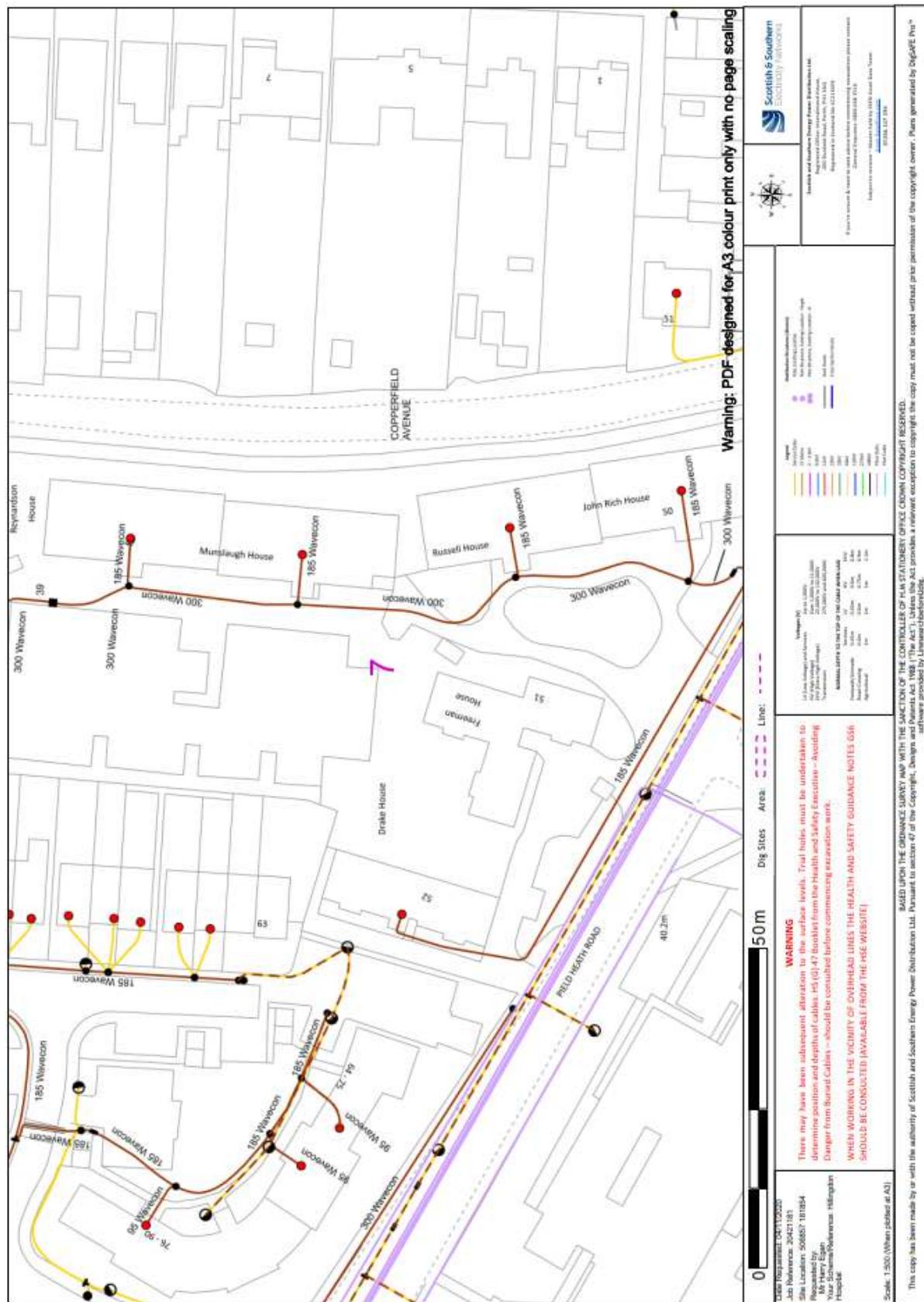


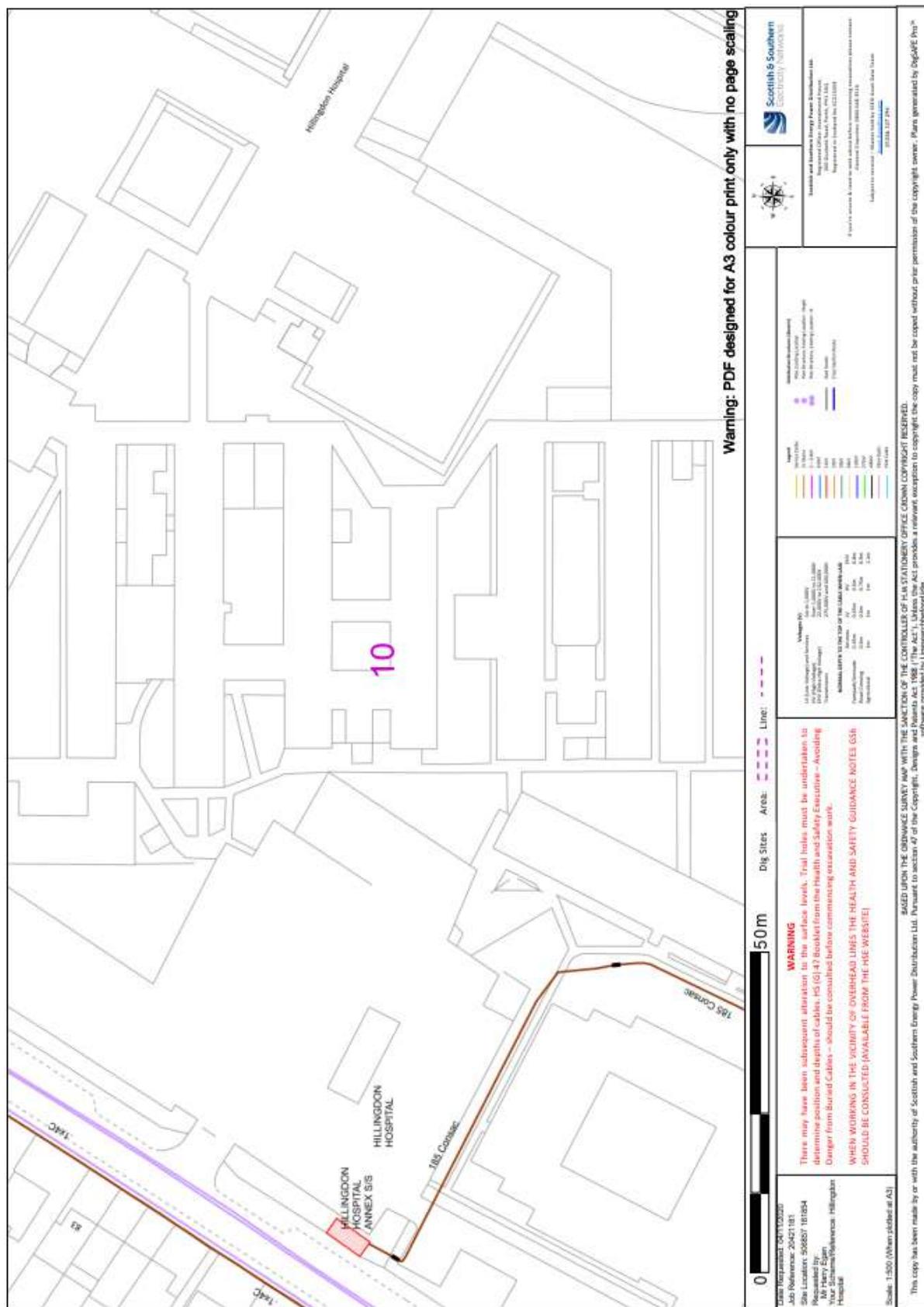
A.4 Existing Electricity Infrastructure - Scottish & Southern Electricity Networks (SSEN)

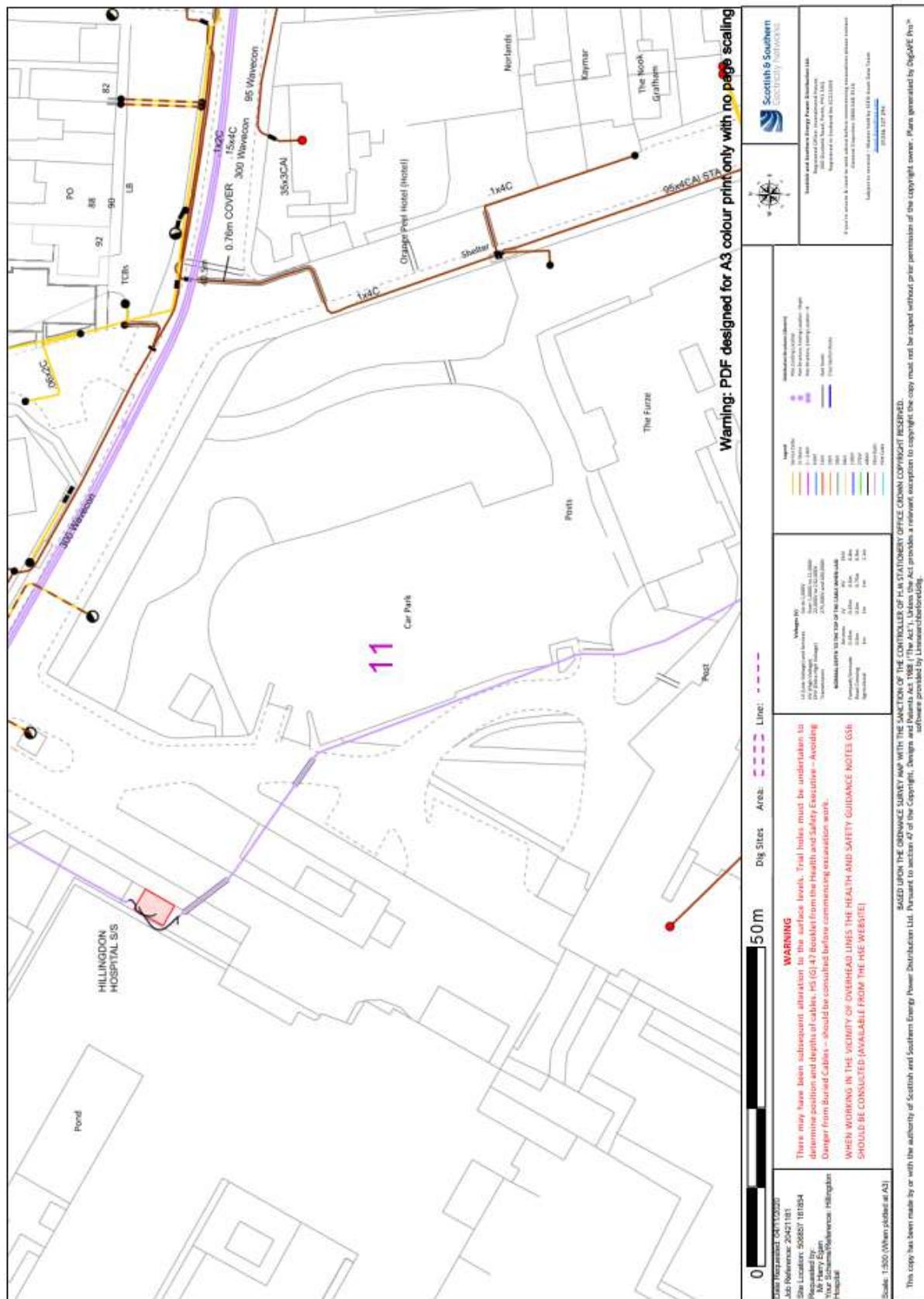


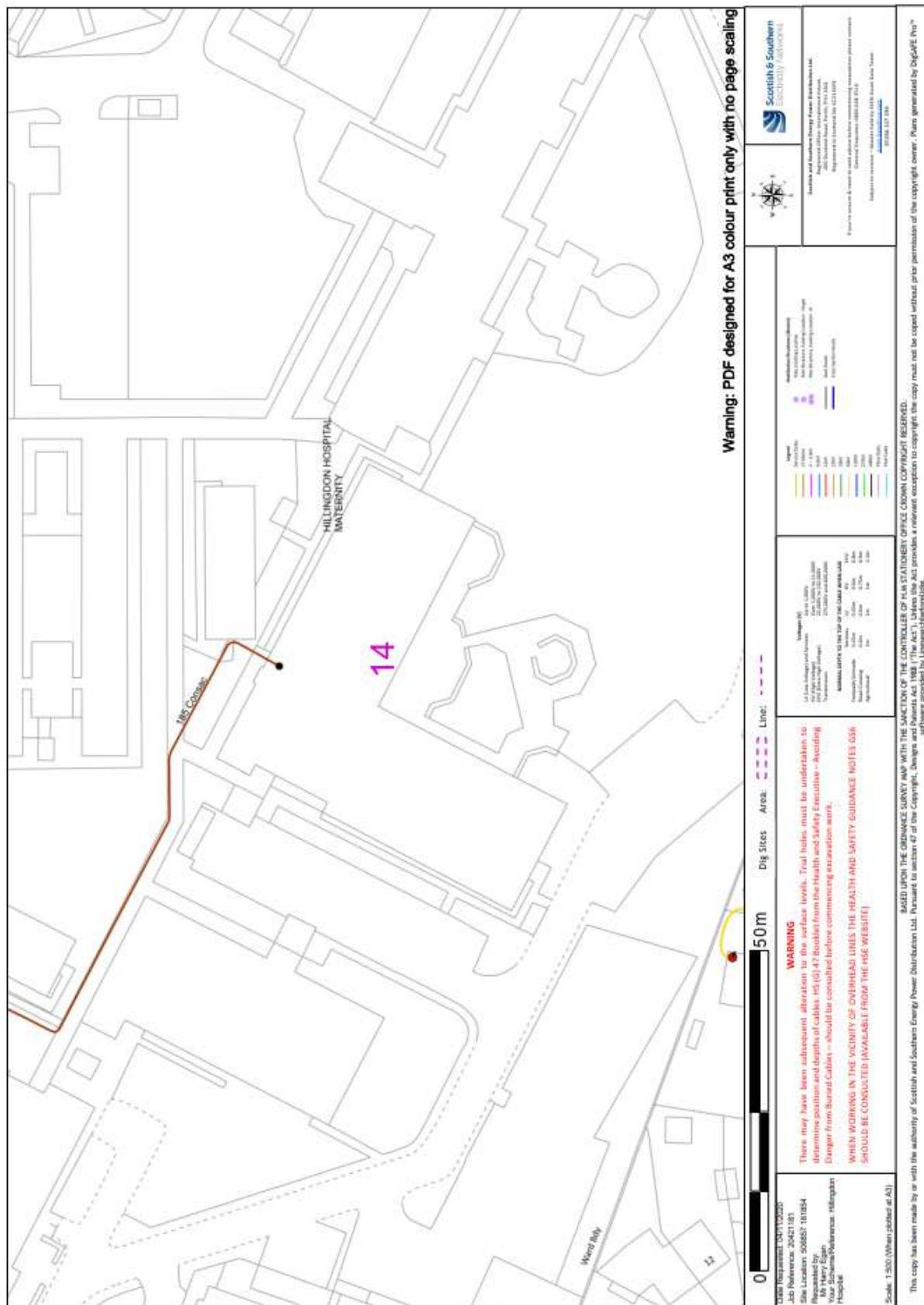


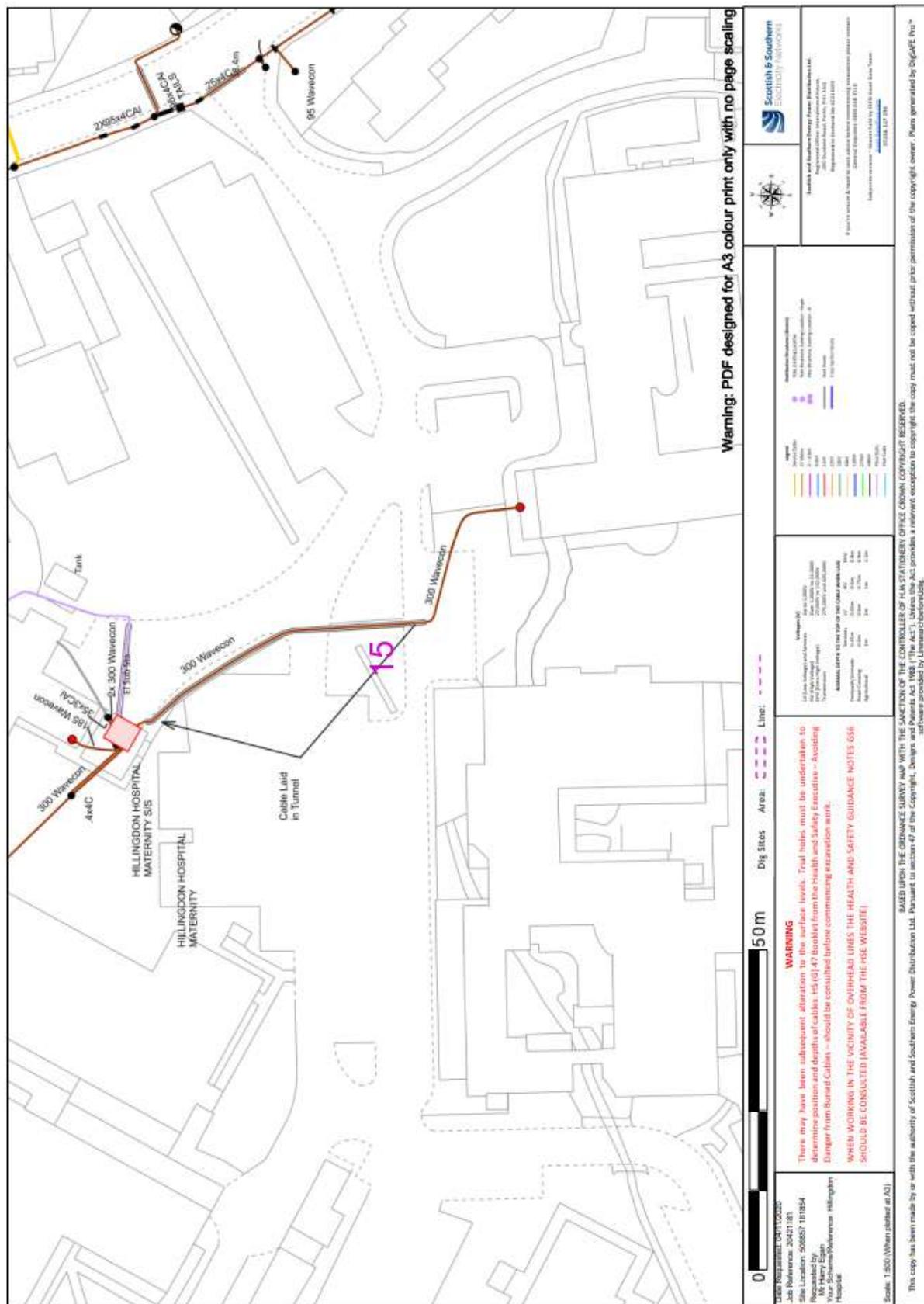


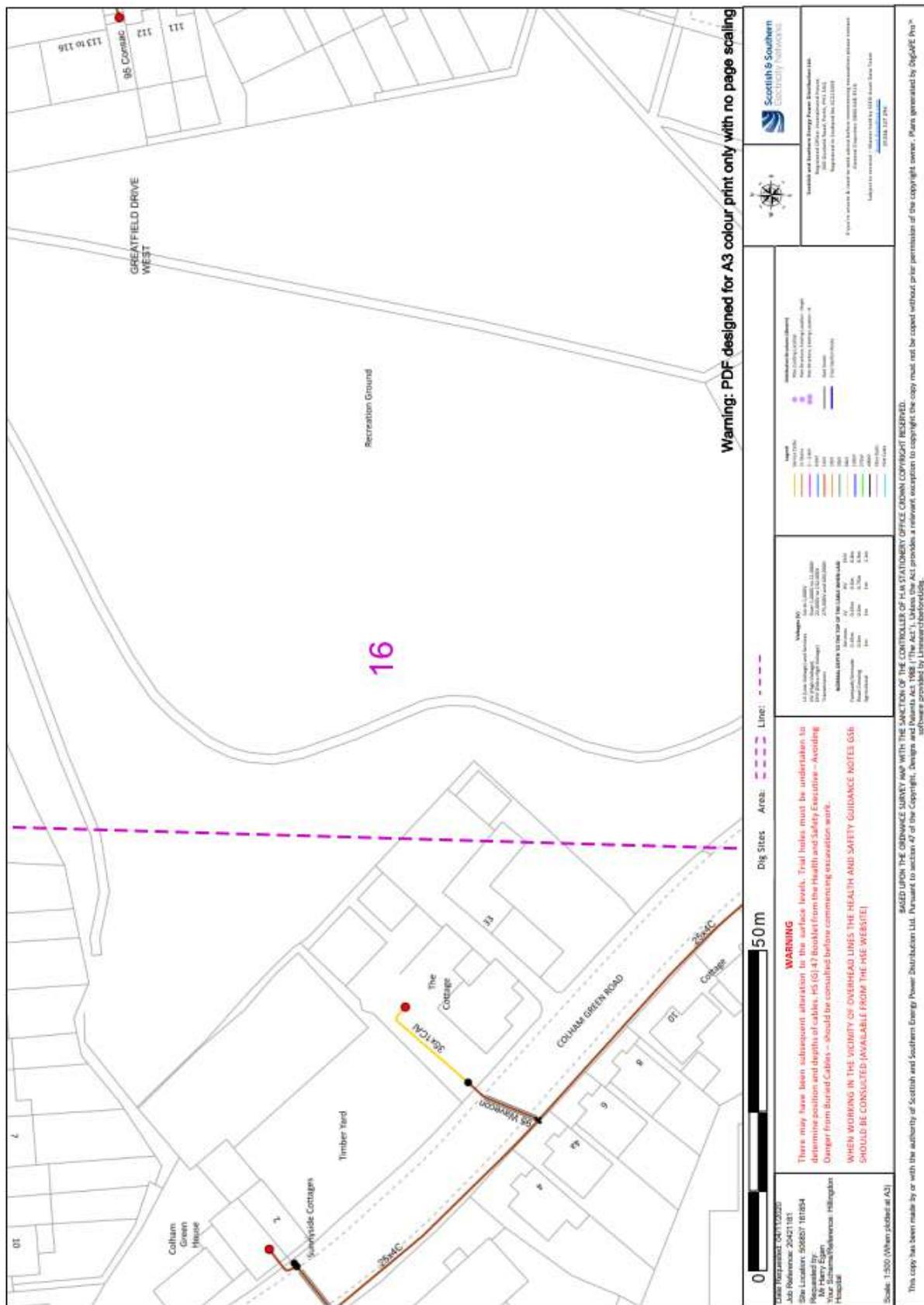


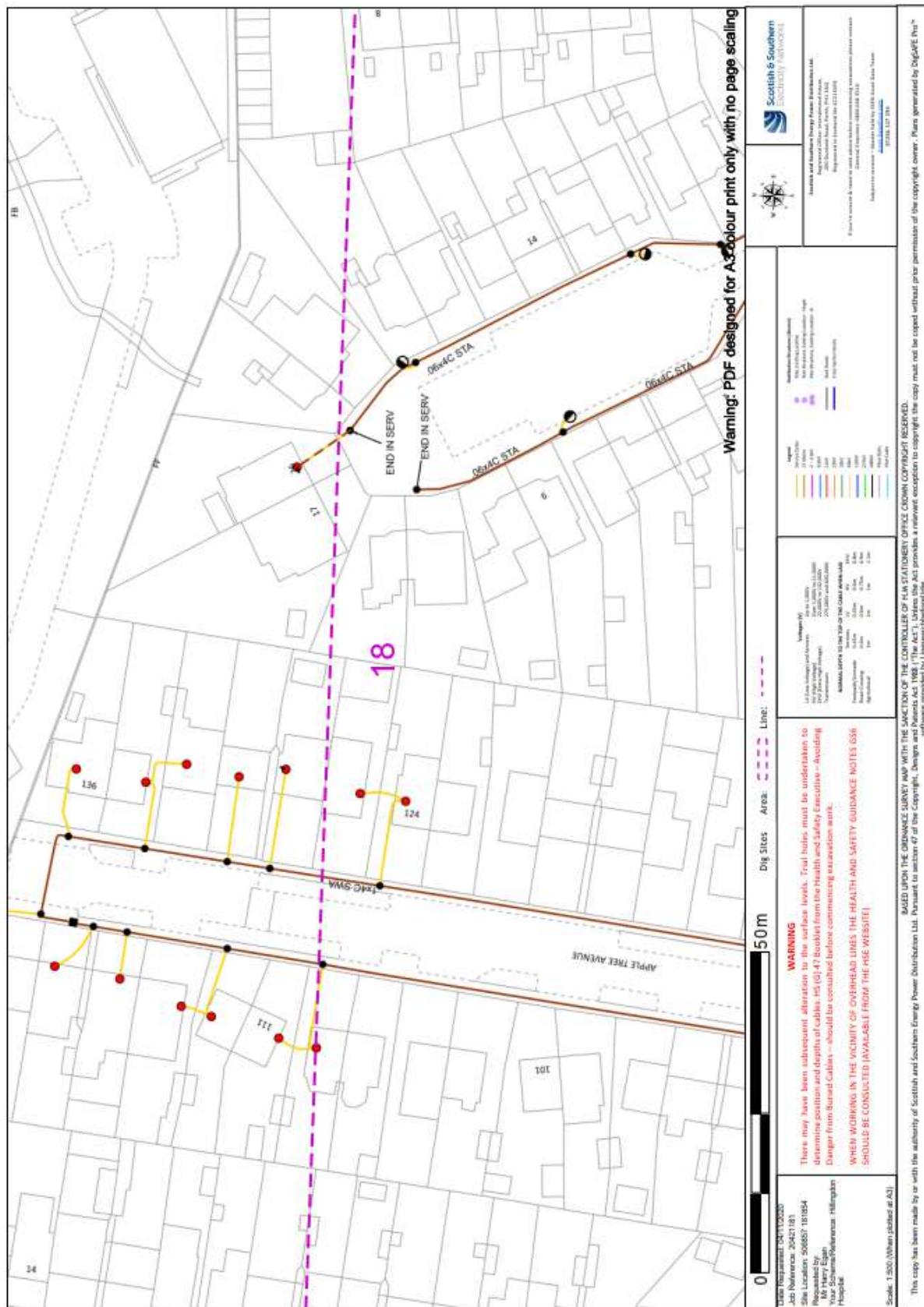


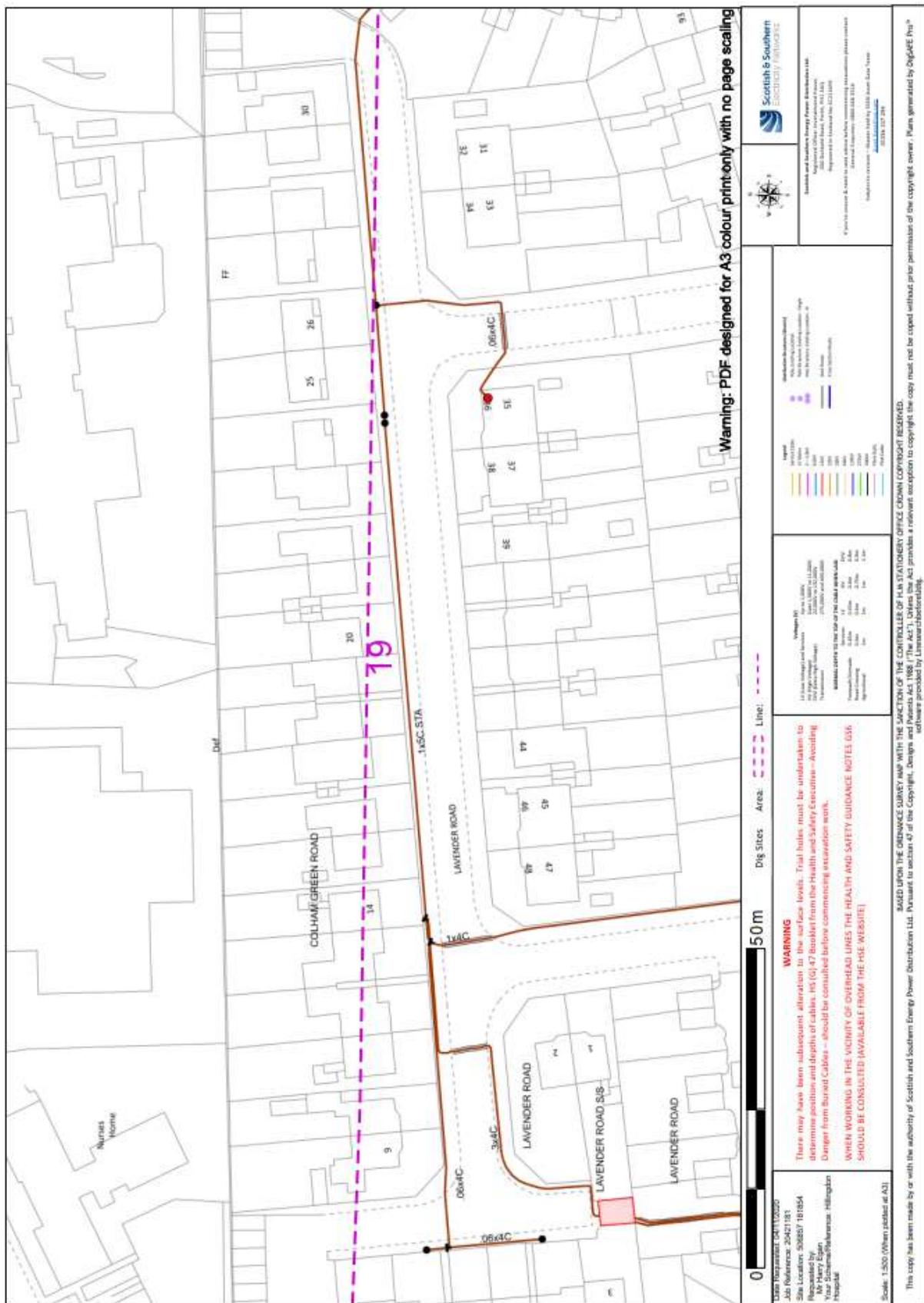


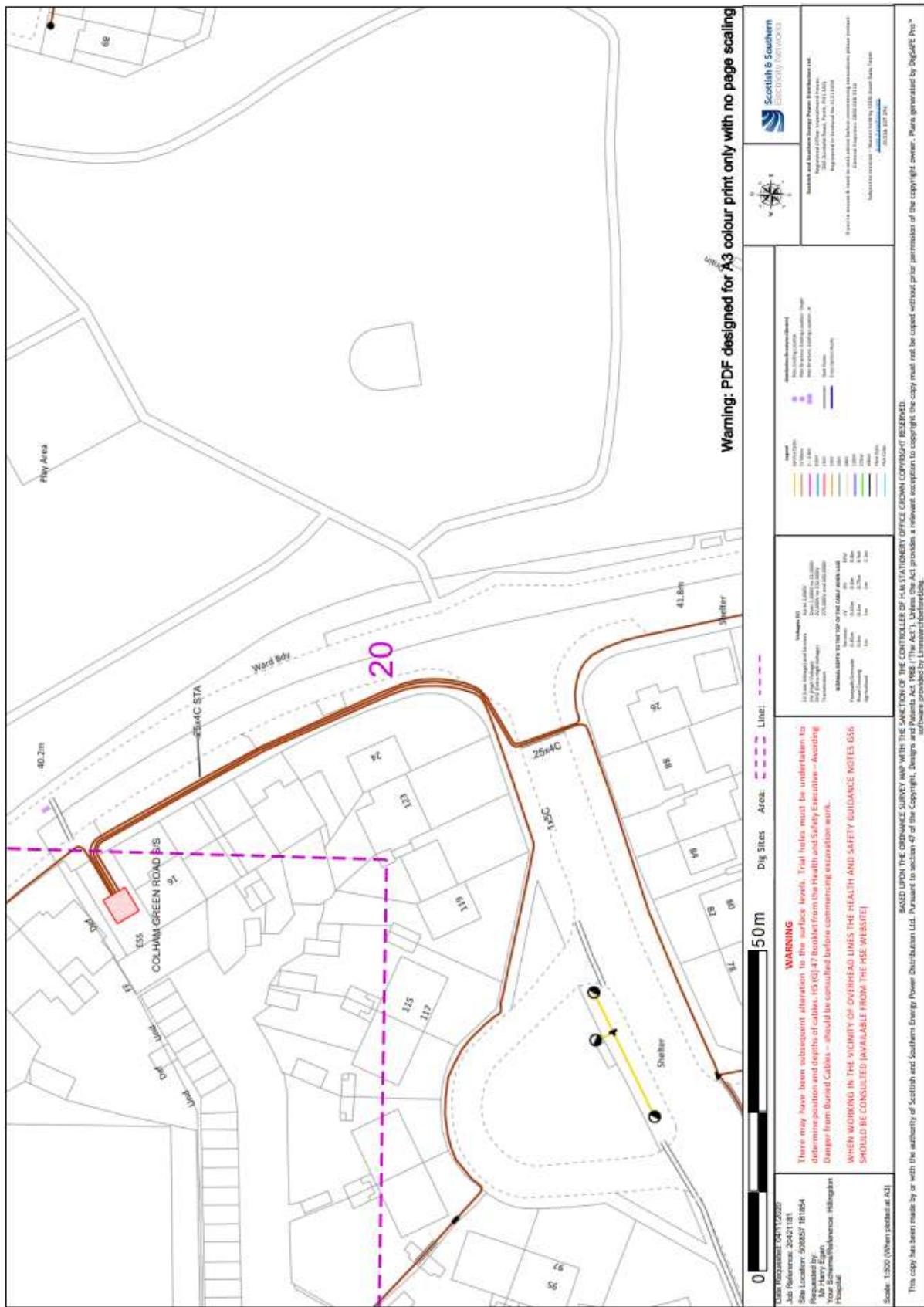


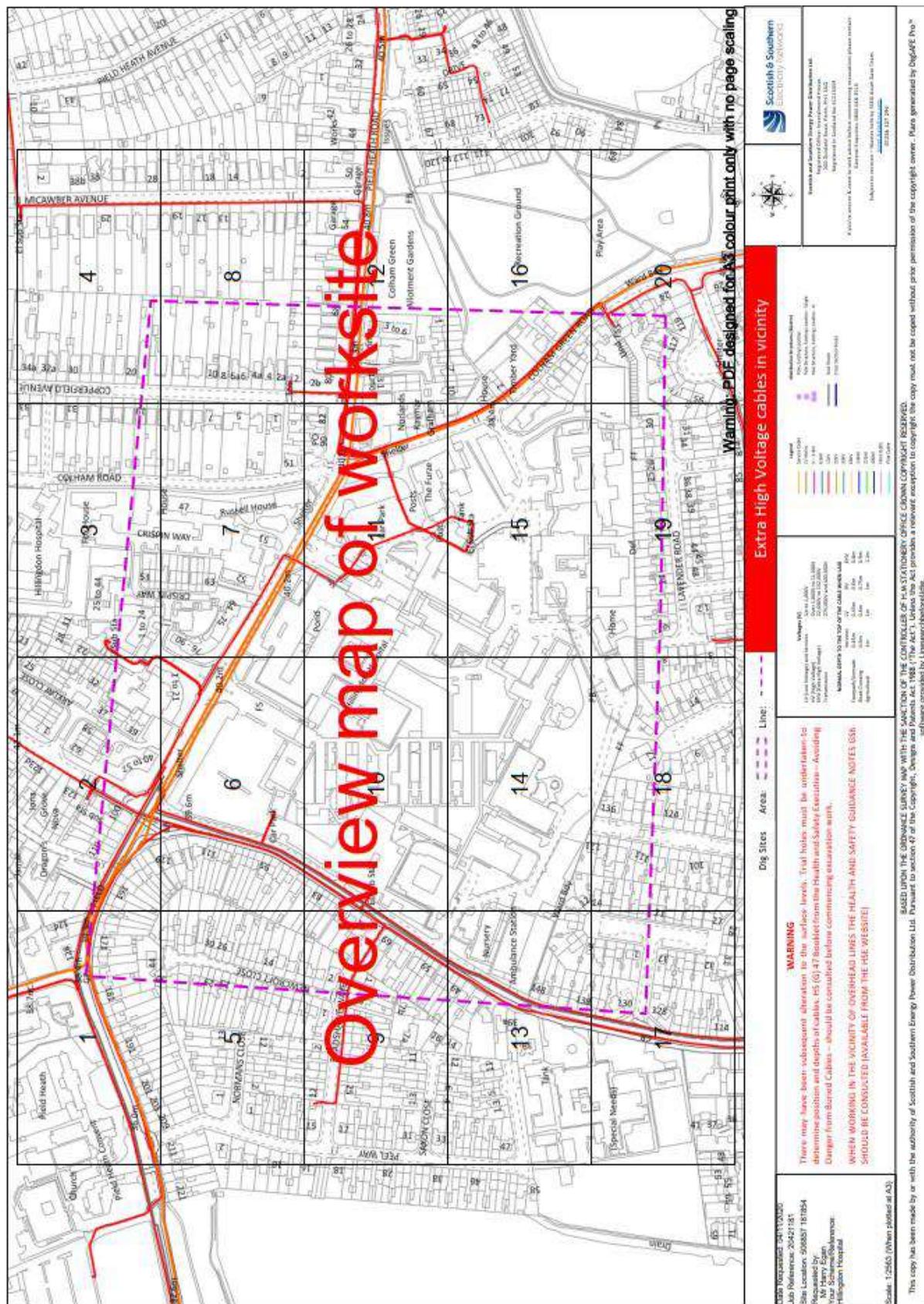


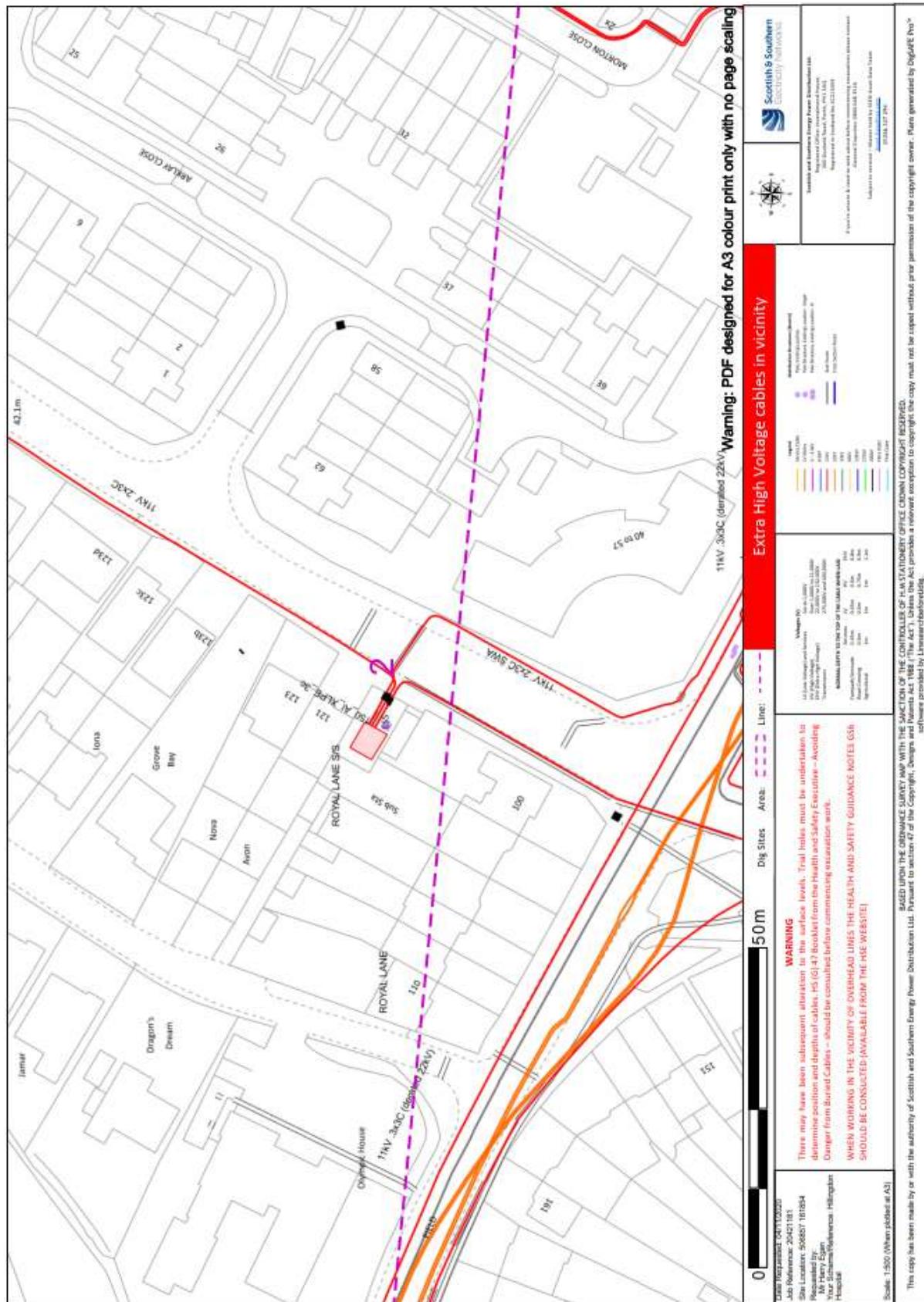


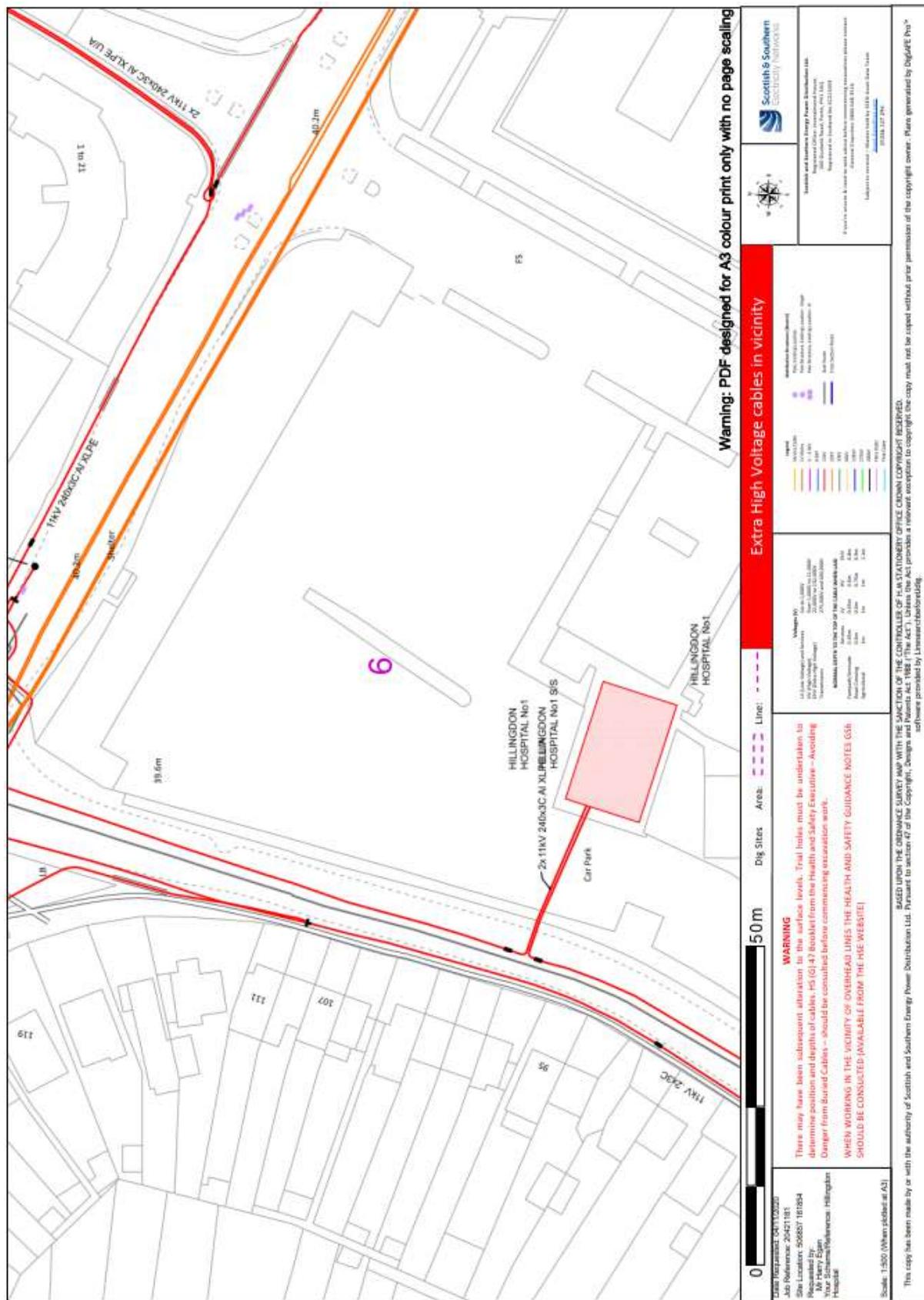


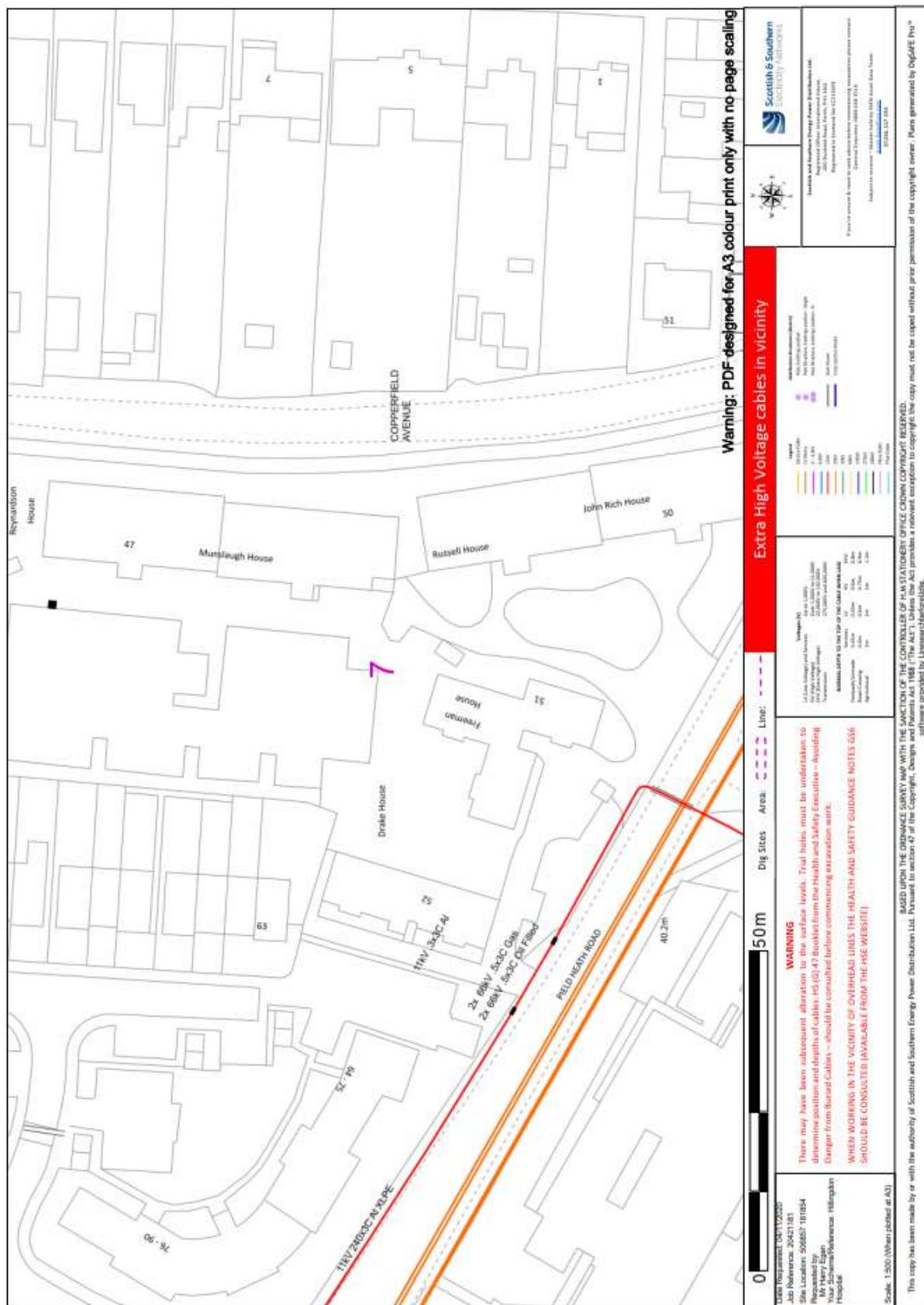


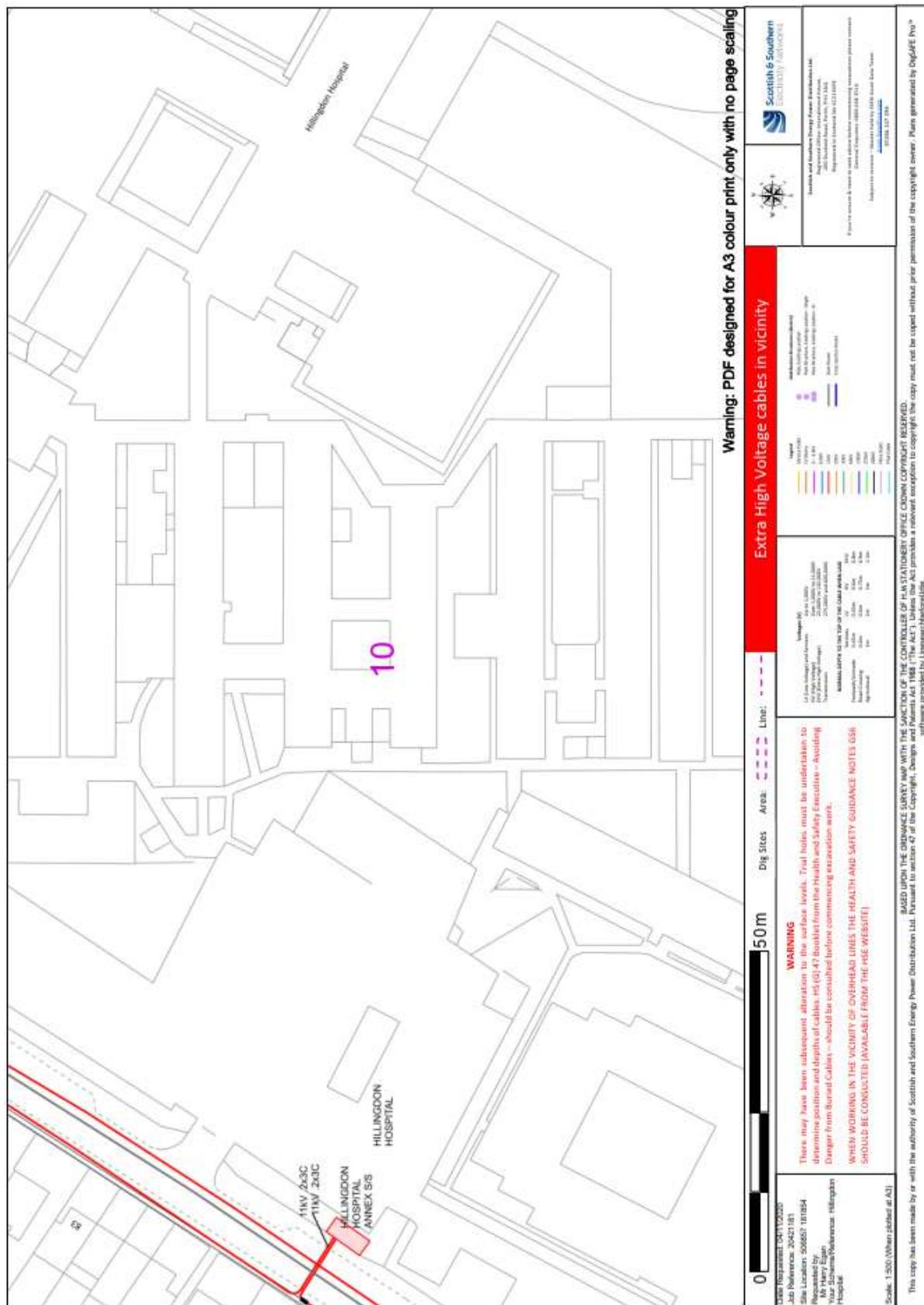


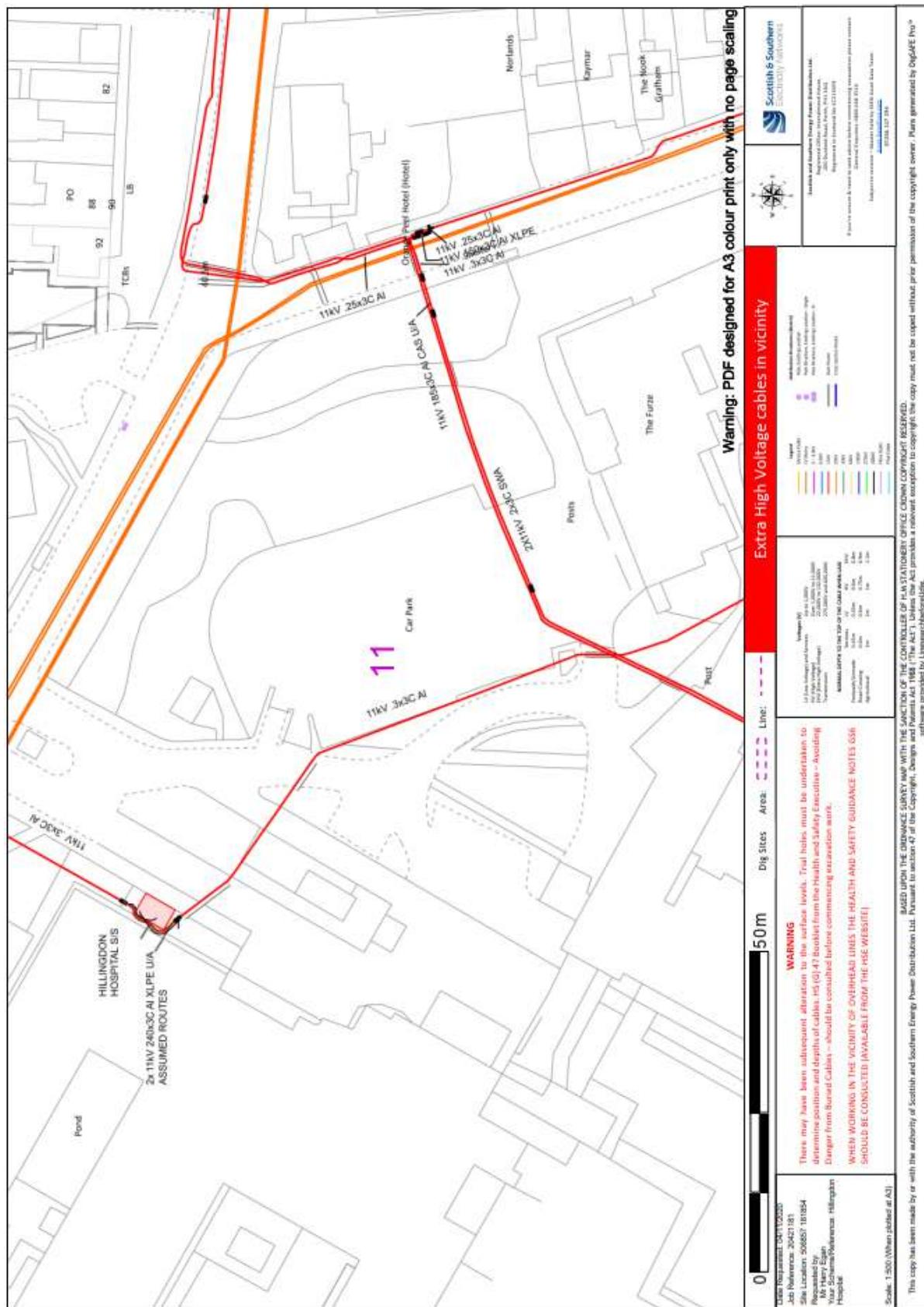


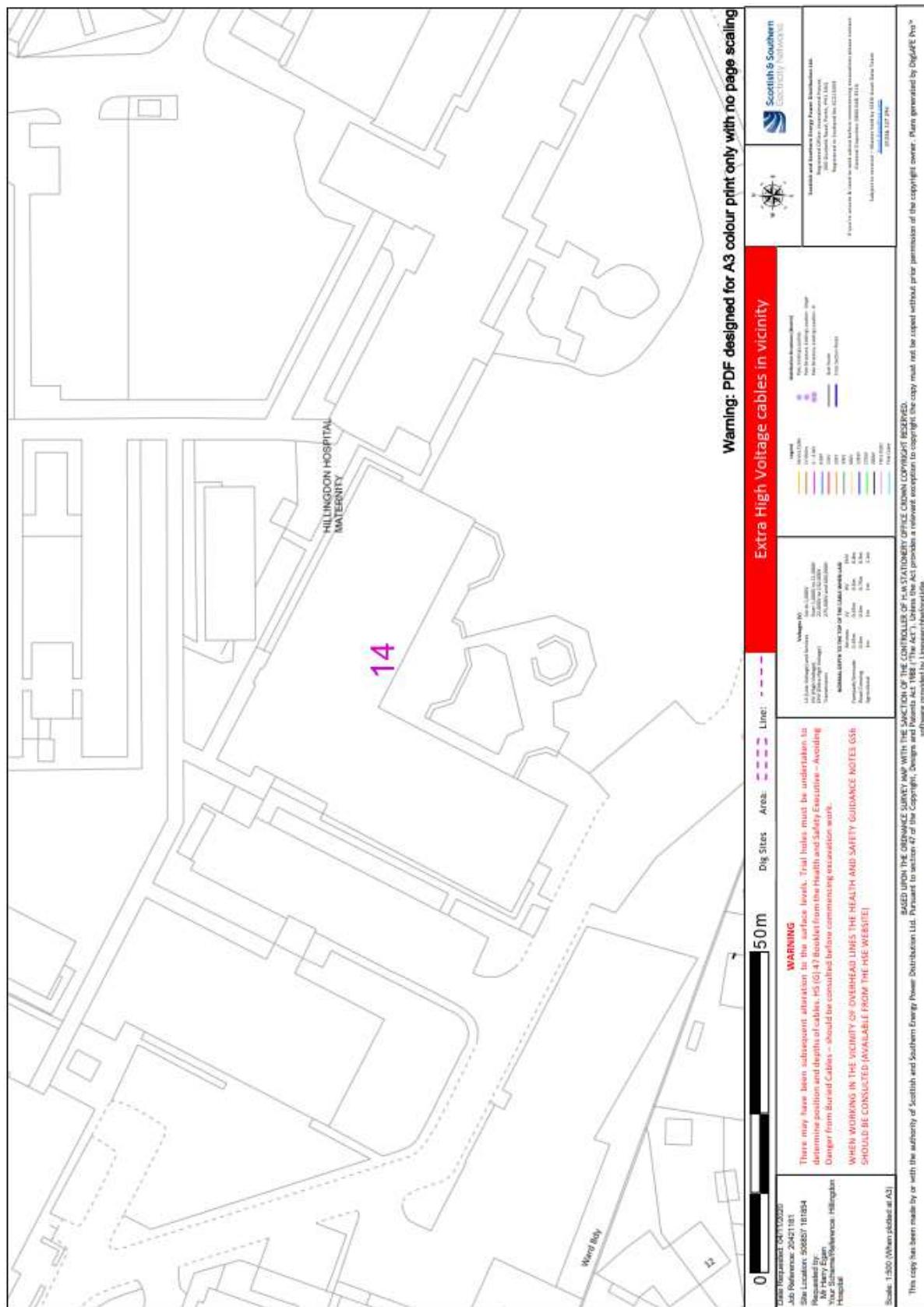


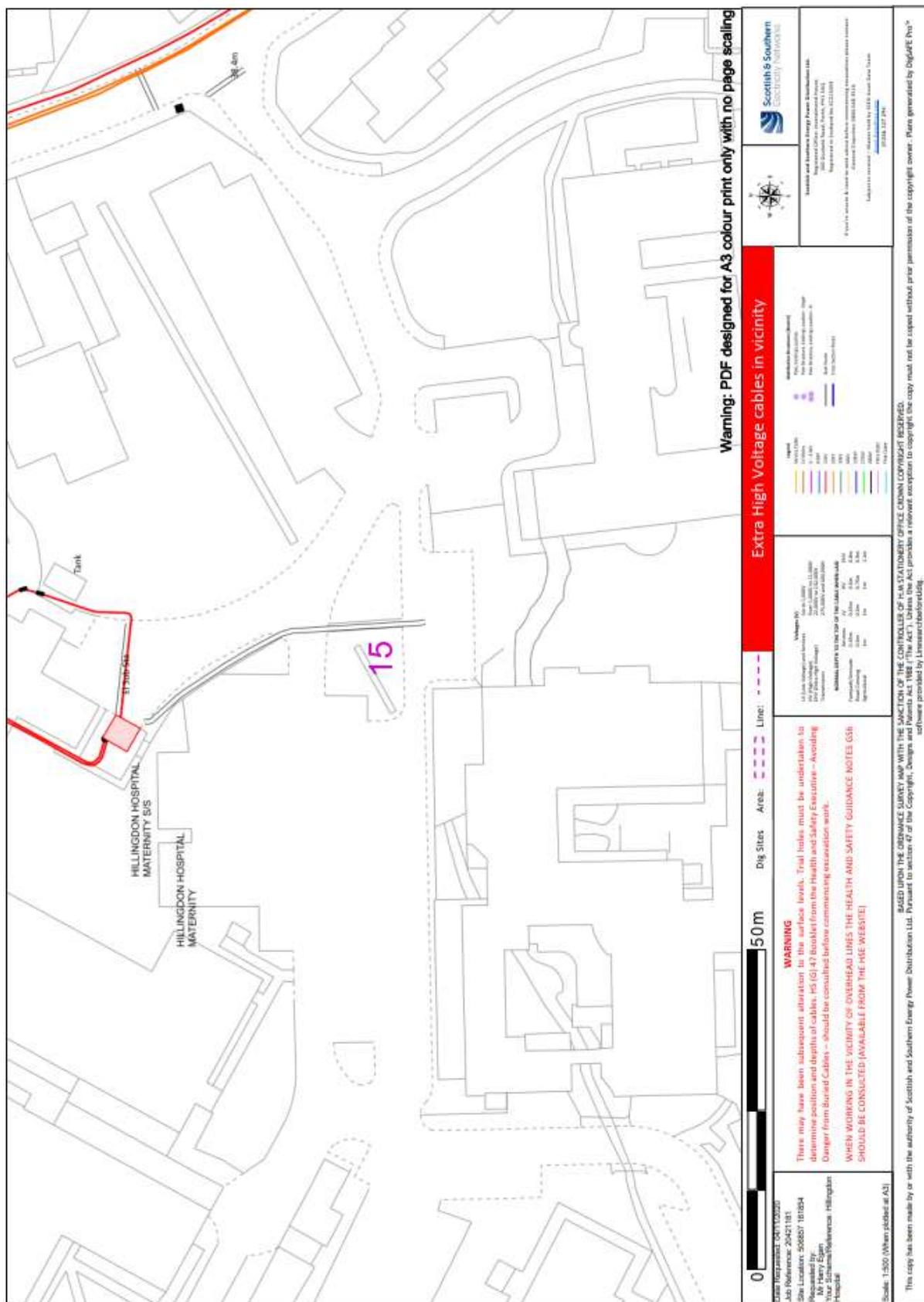


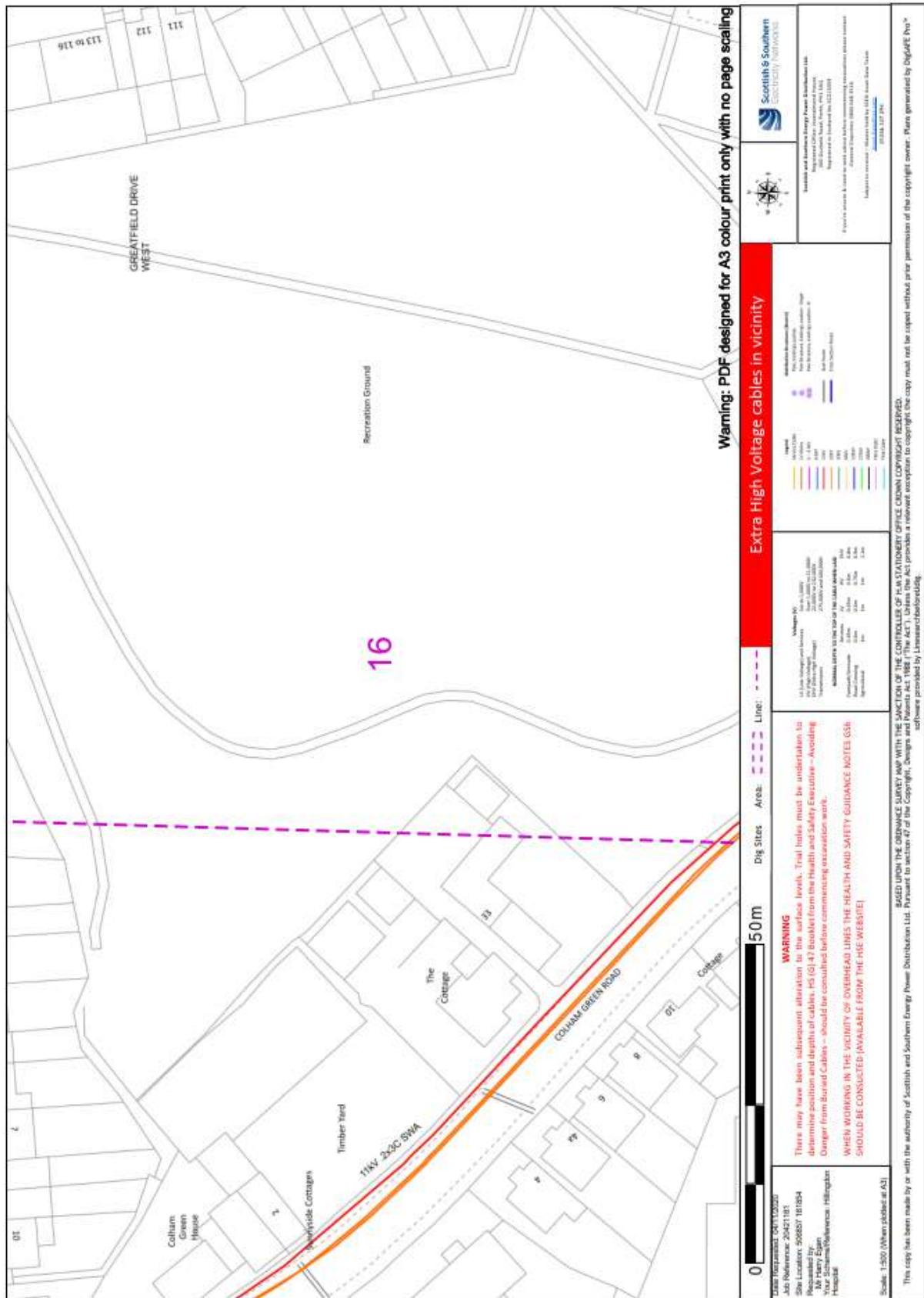


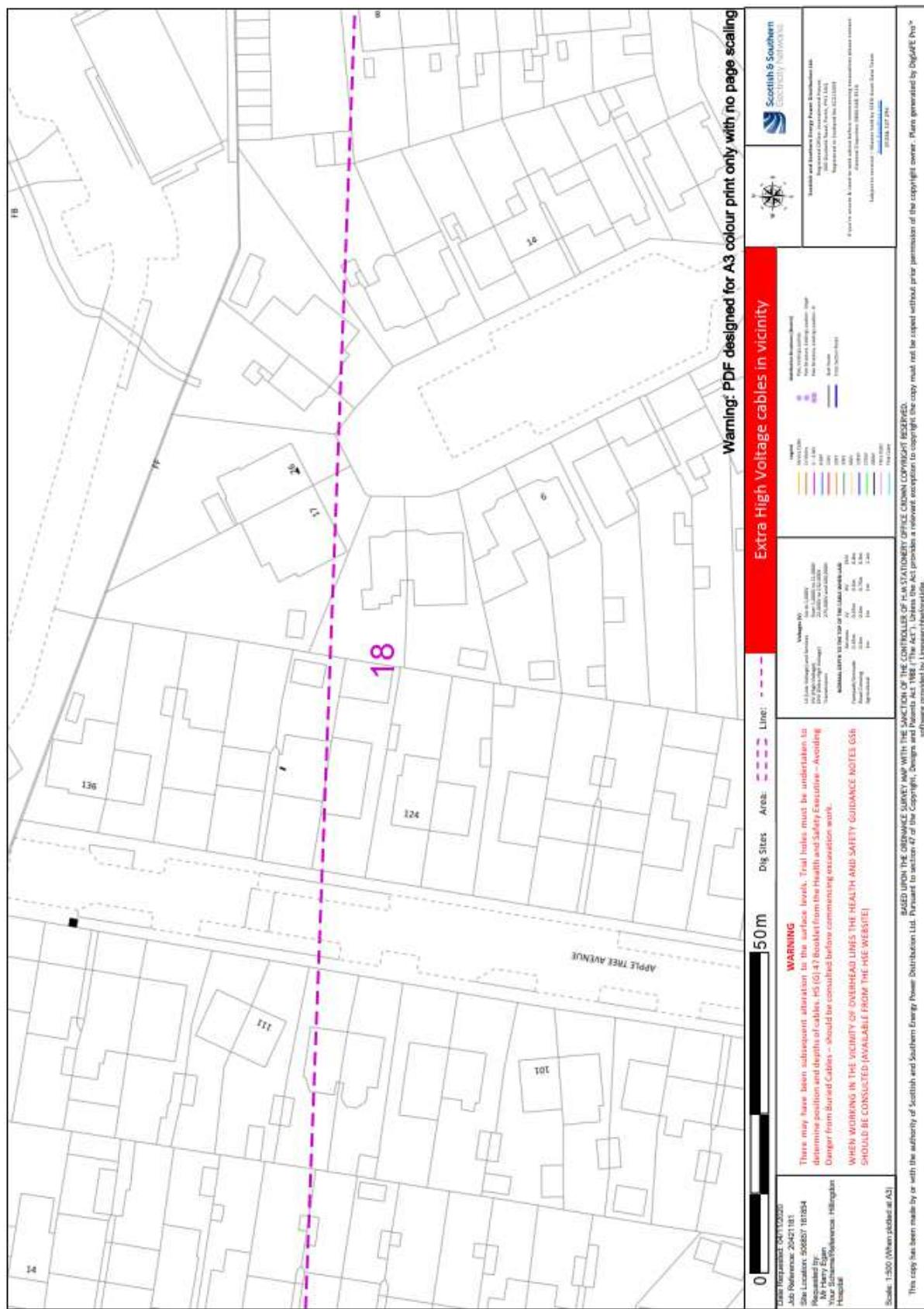


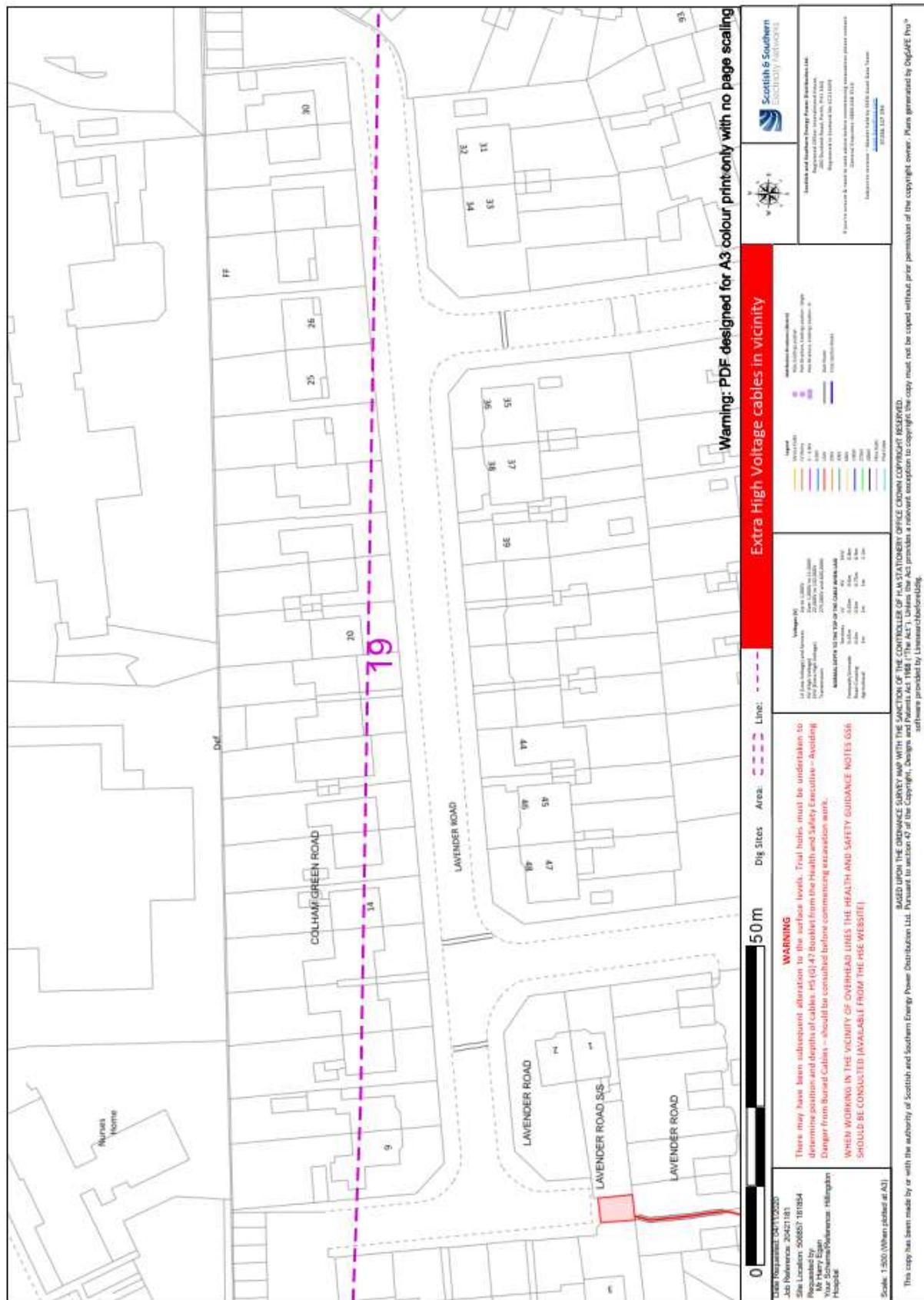


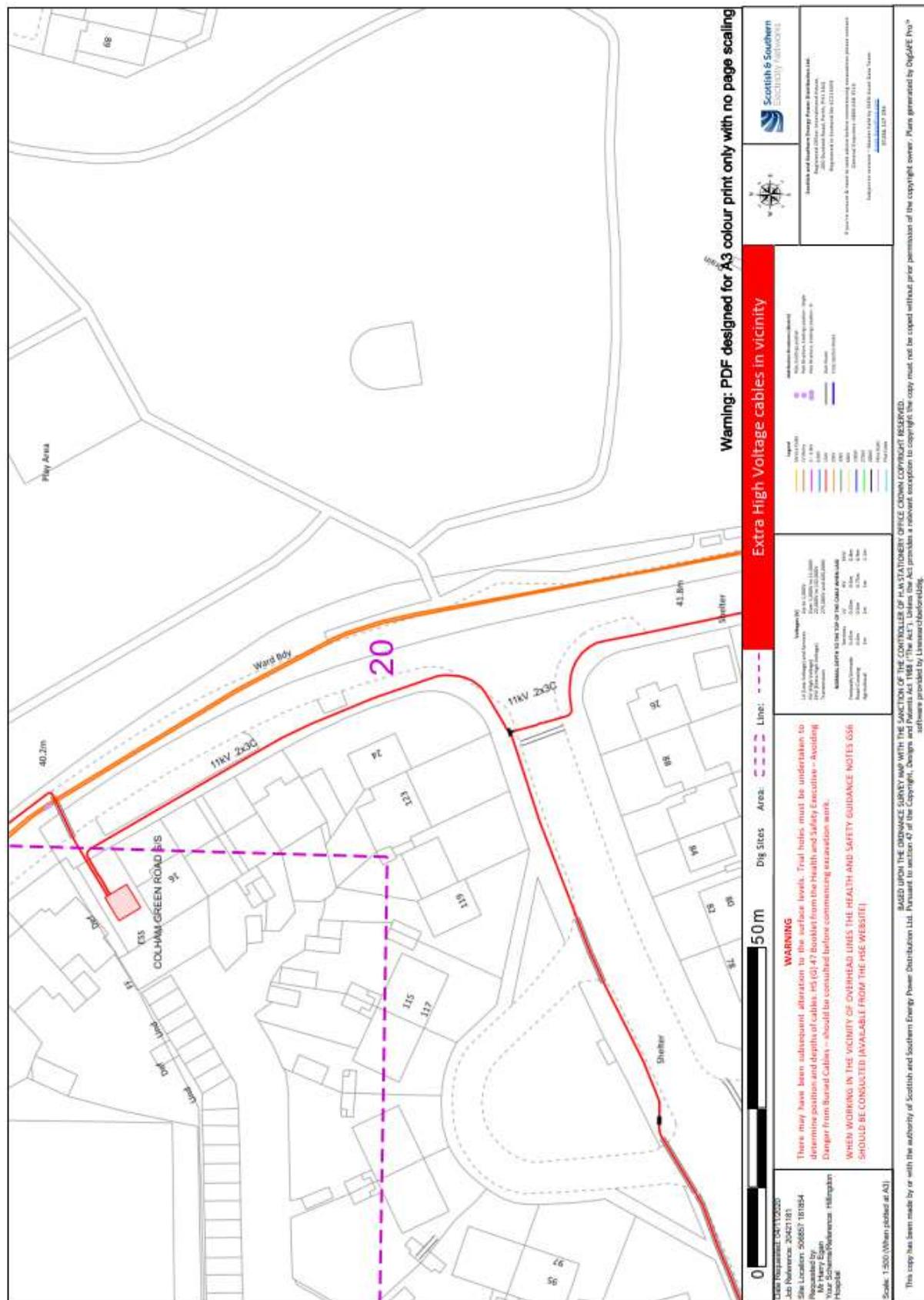




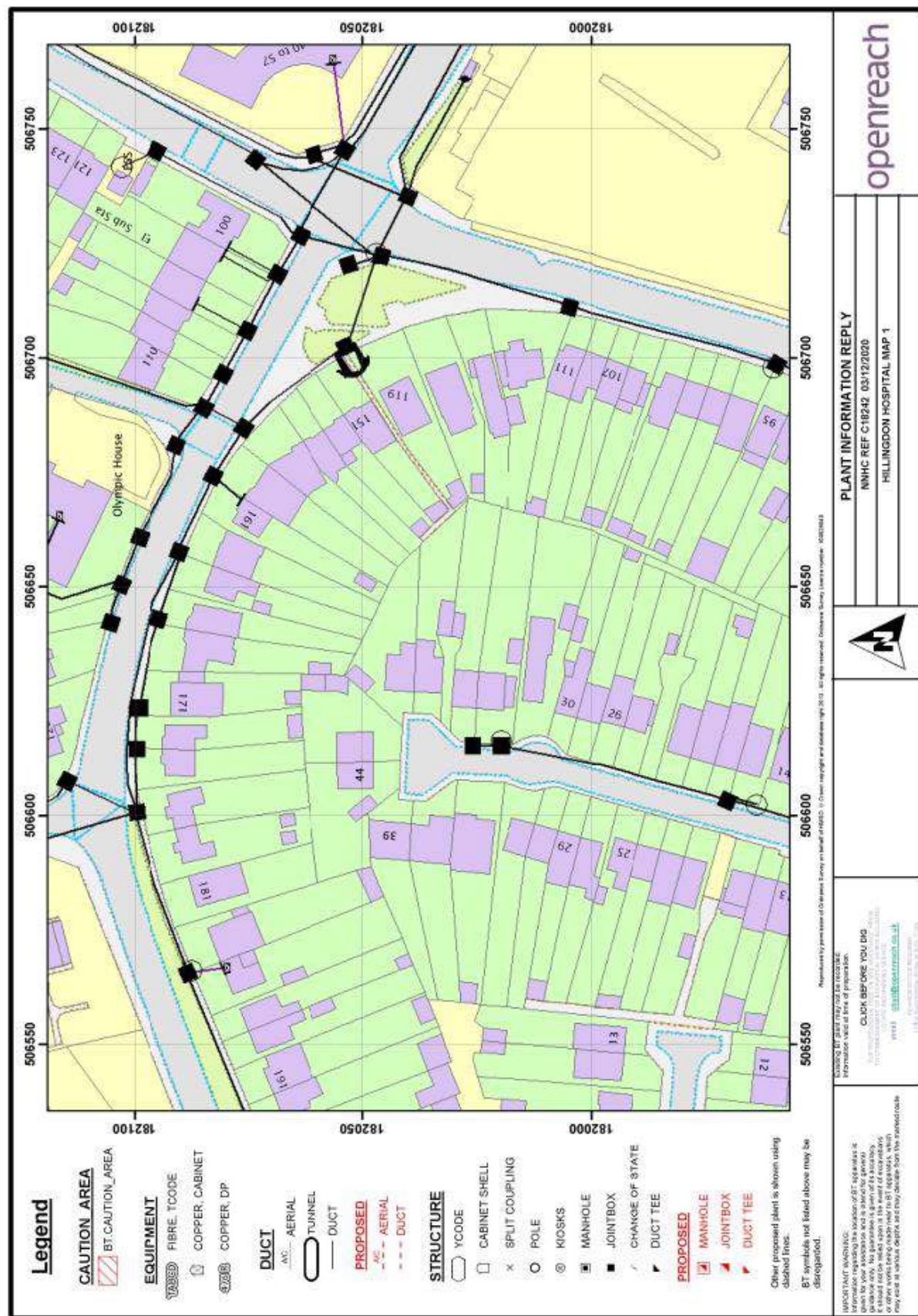


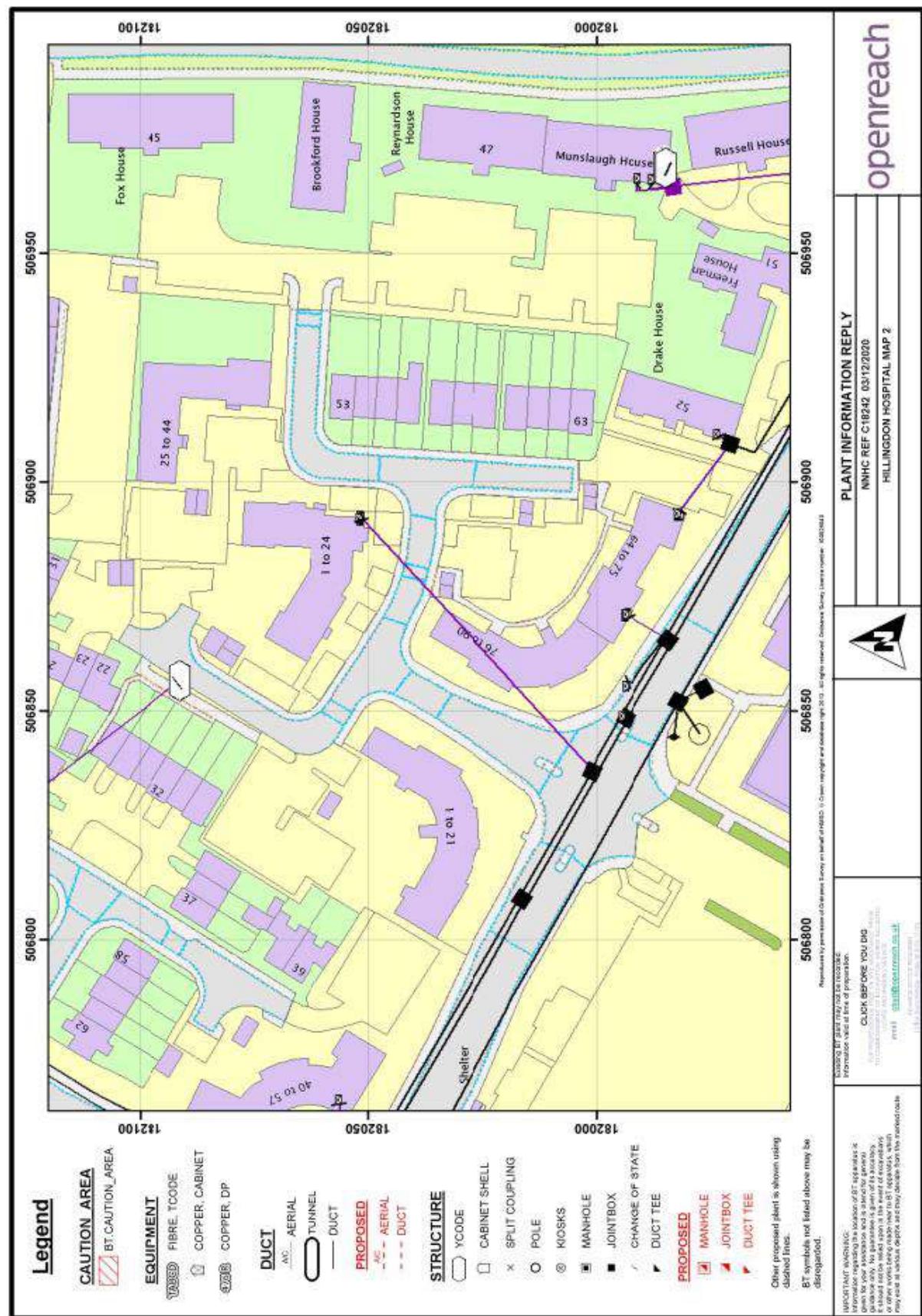




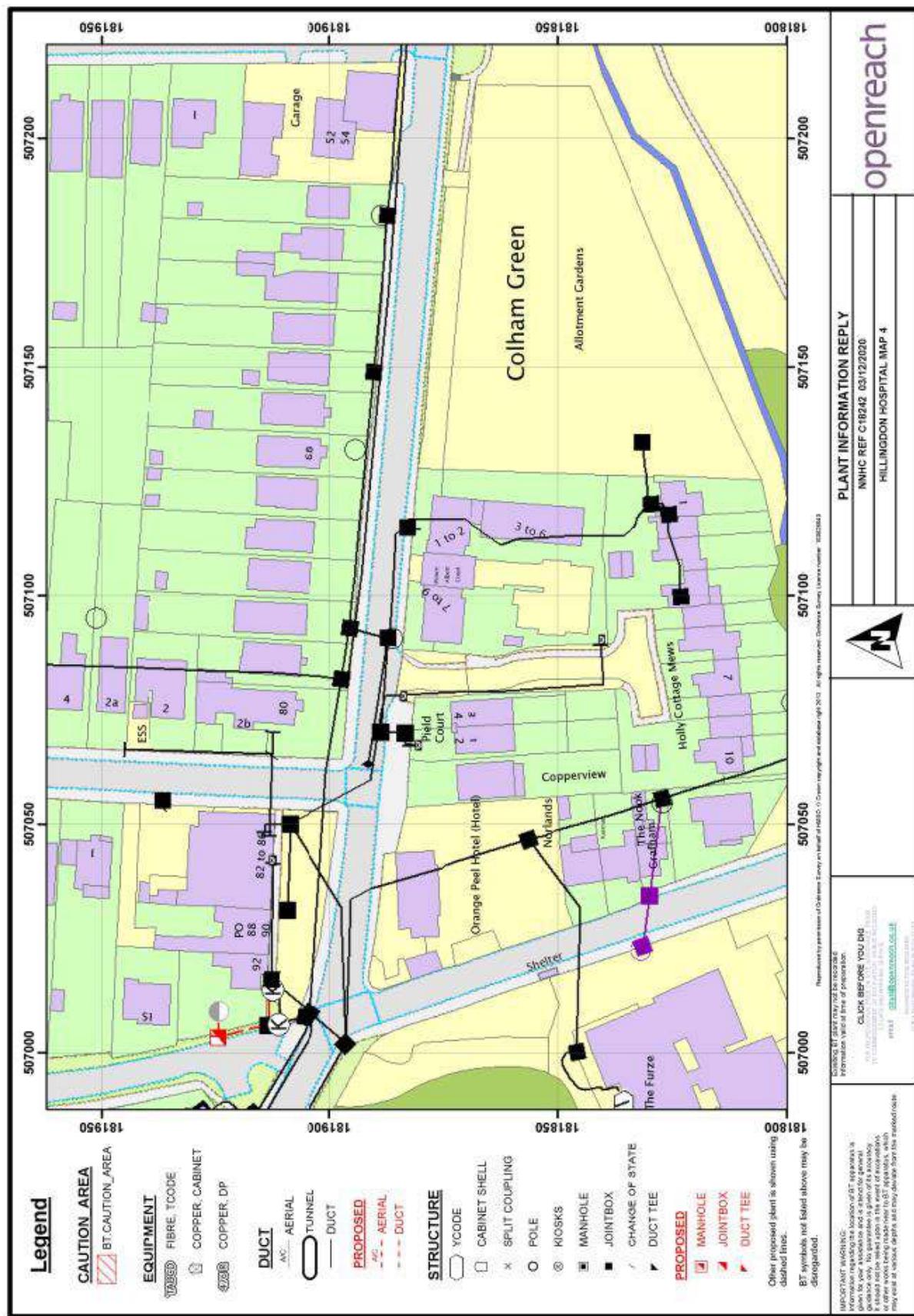


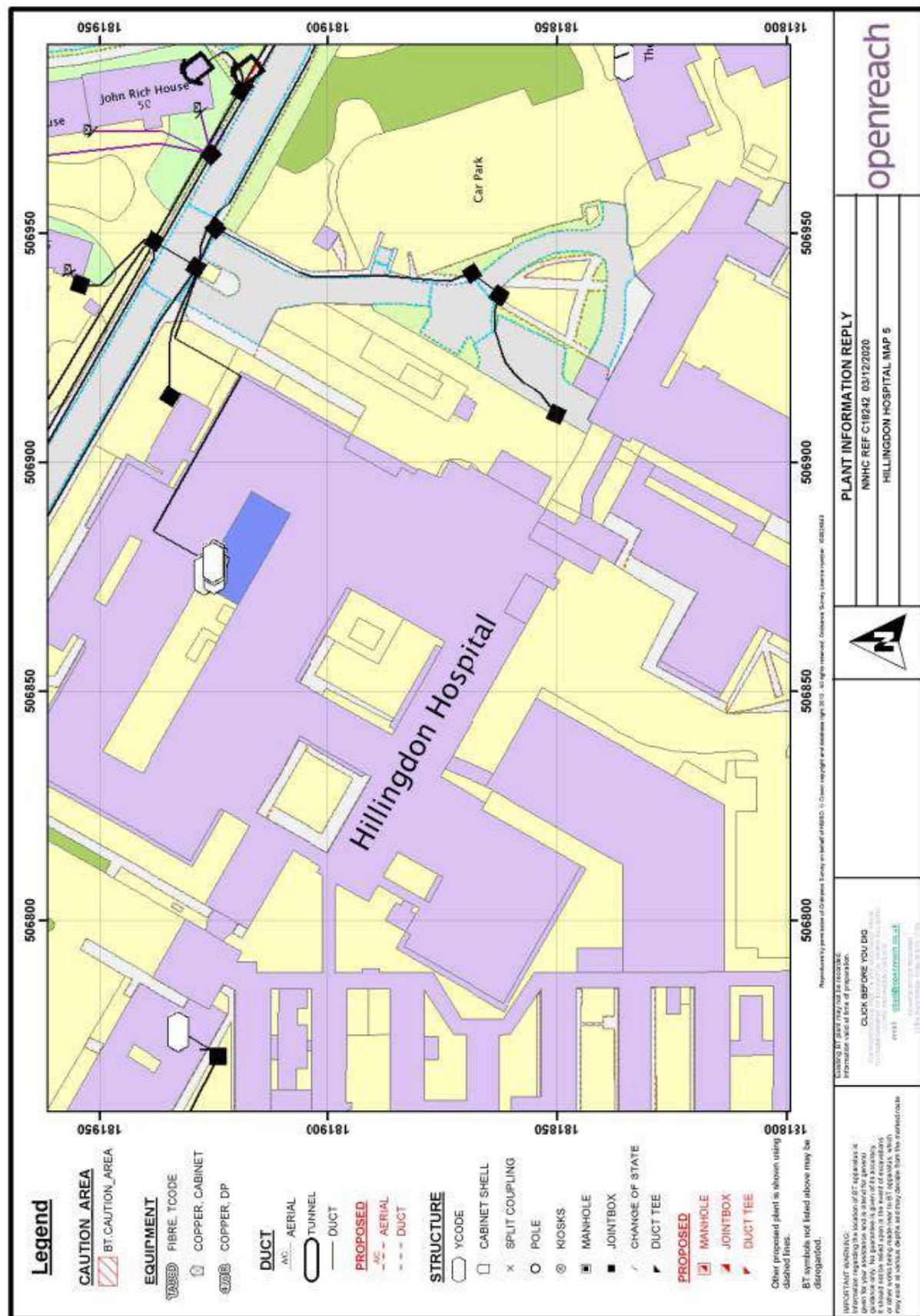
A.5 Existing Telecommunications Infrastructure - Openreach

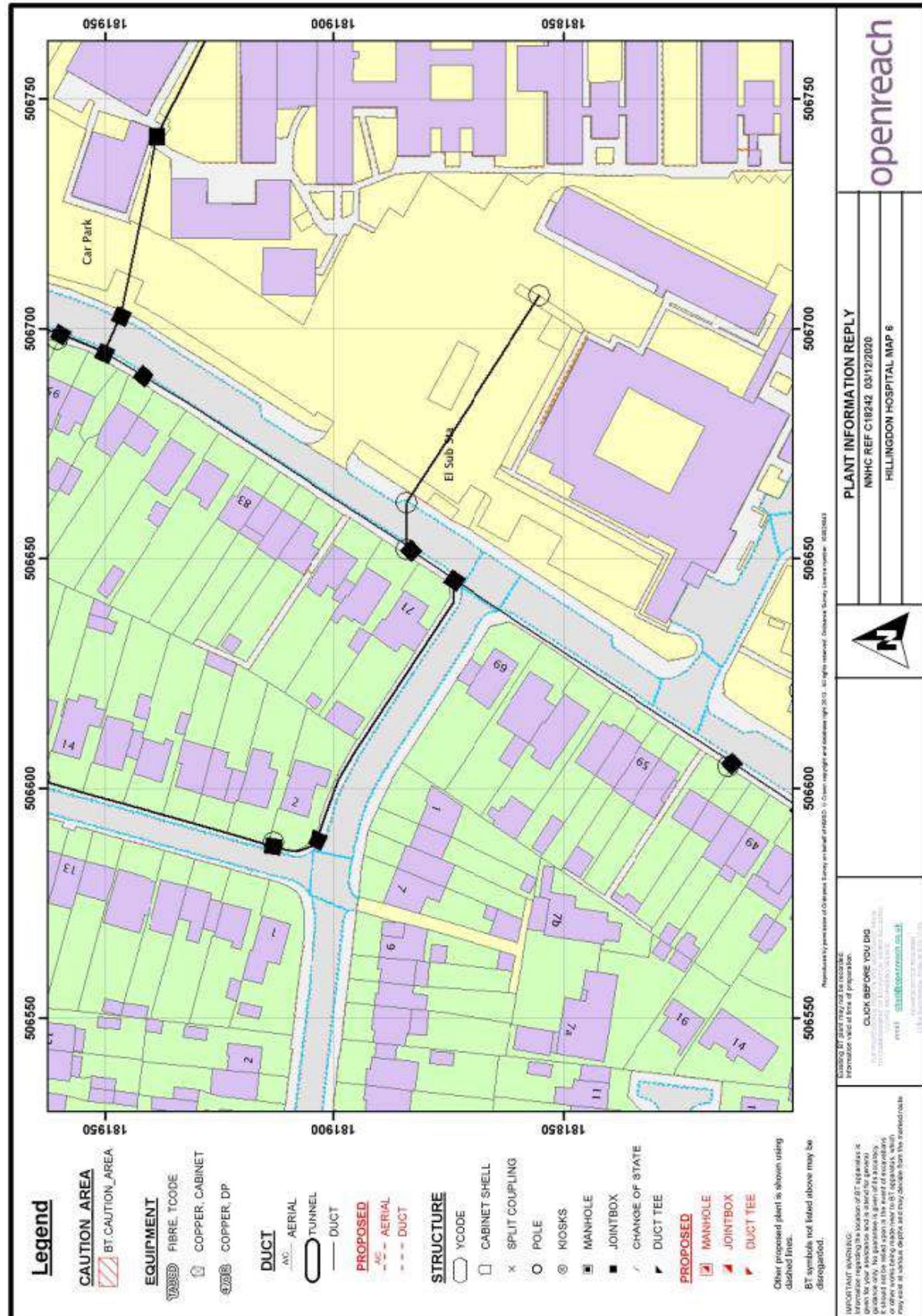


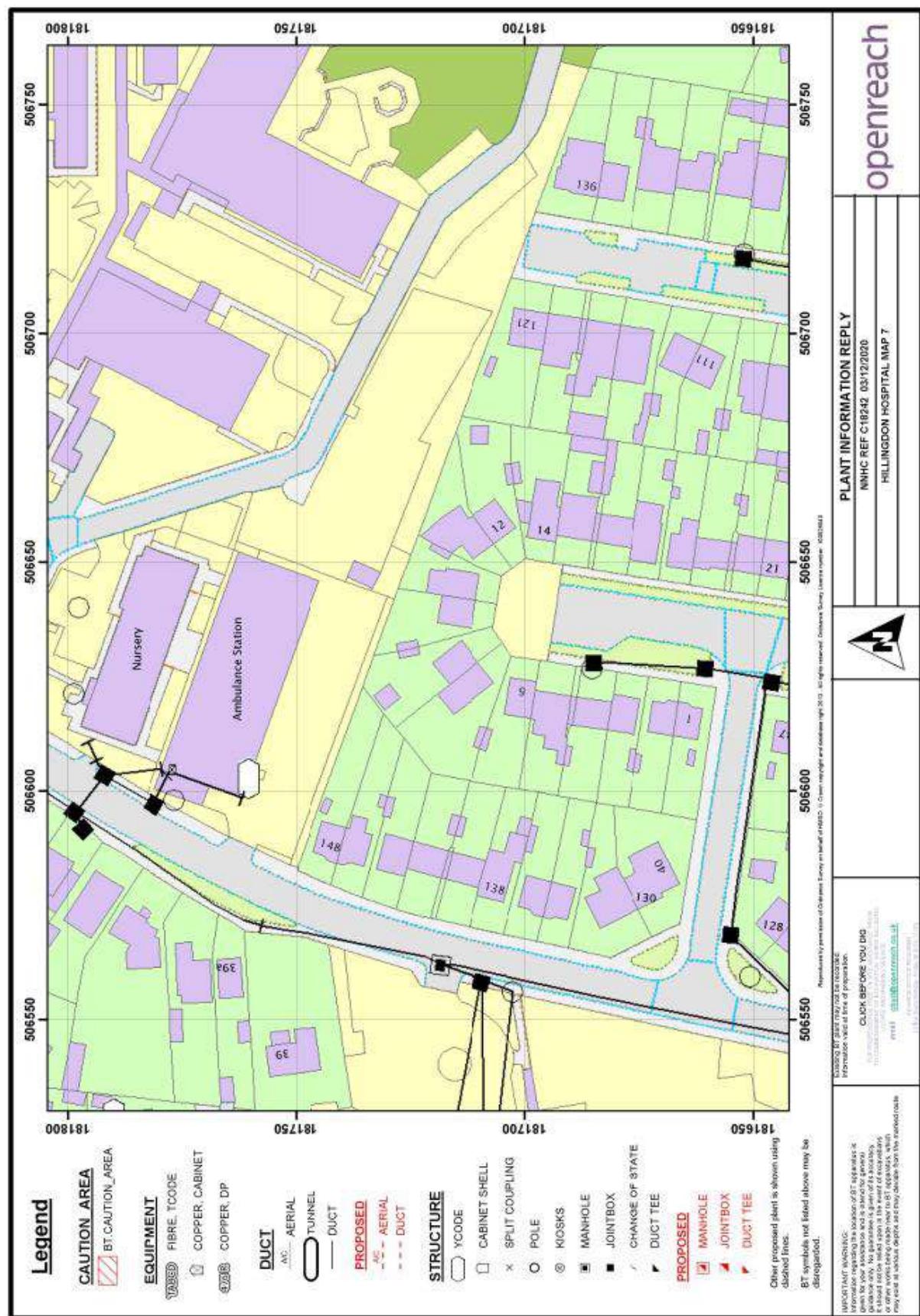


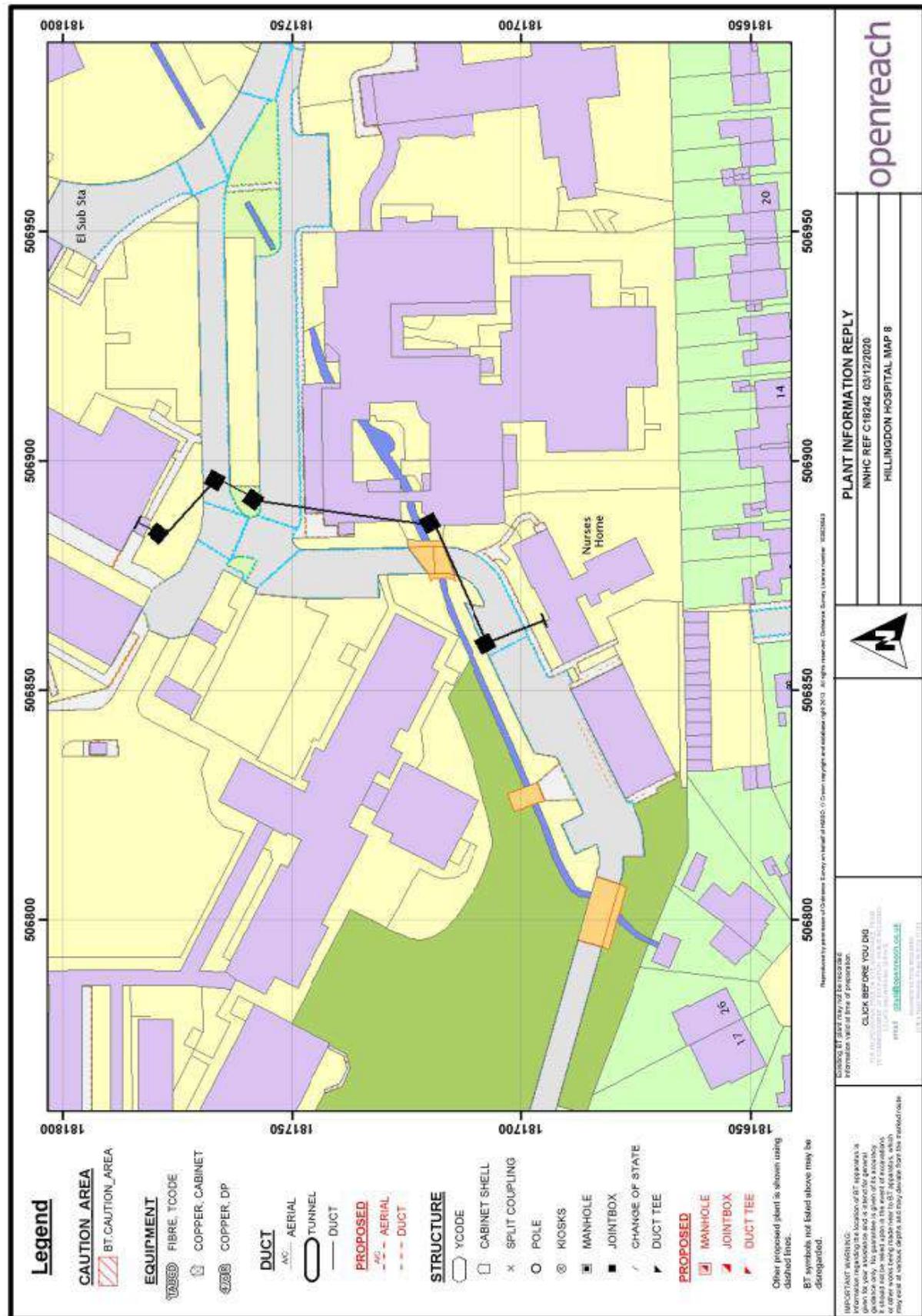


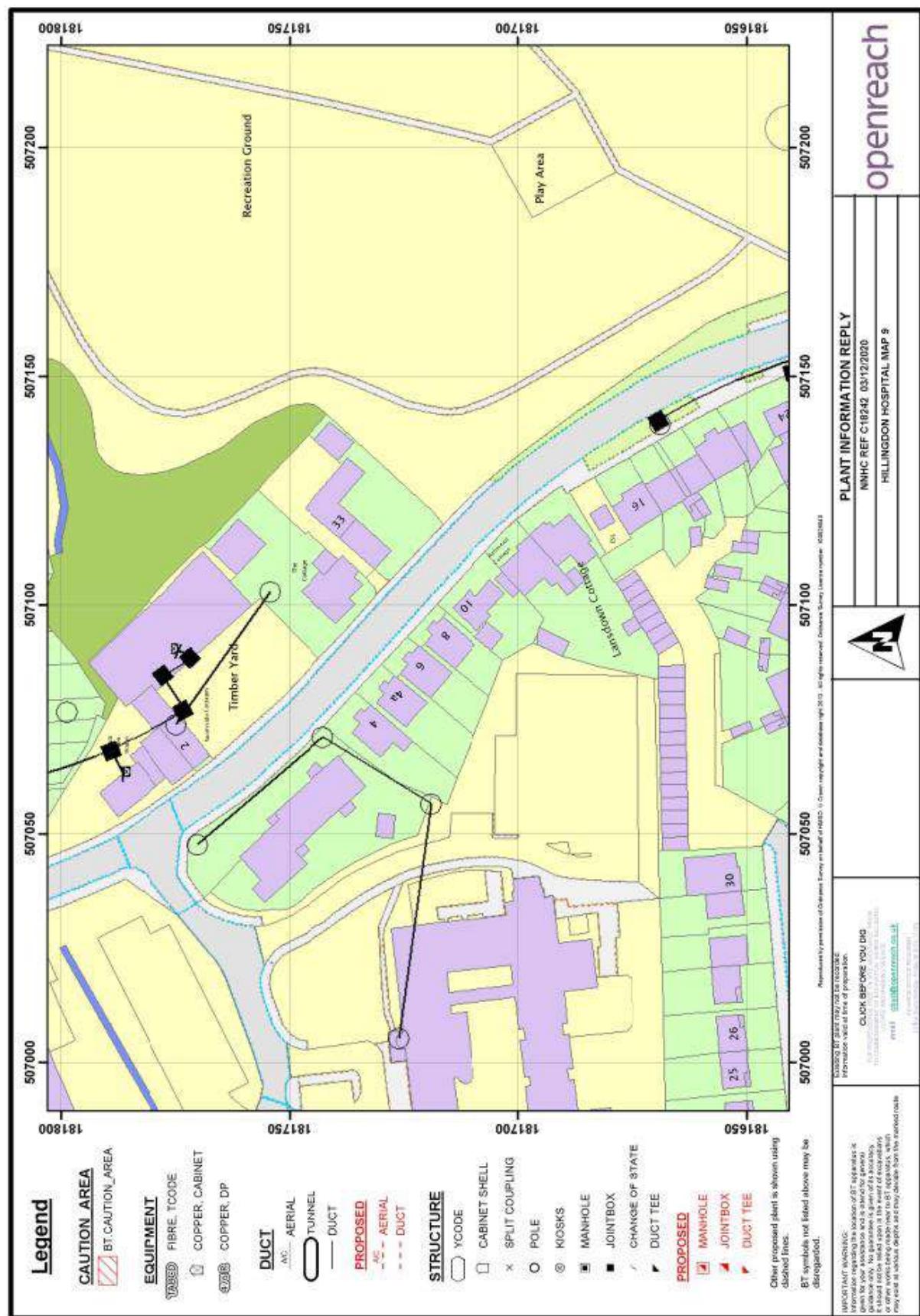








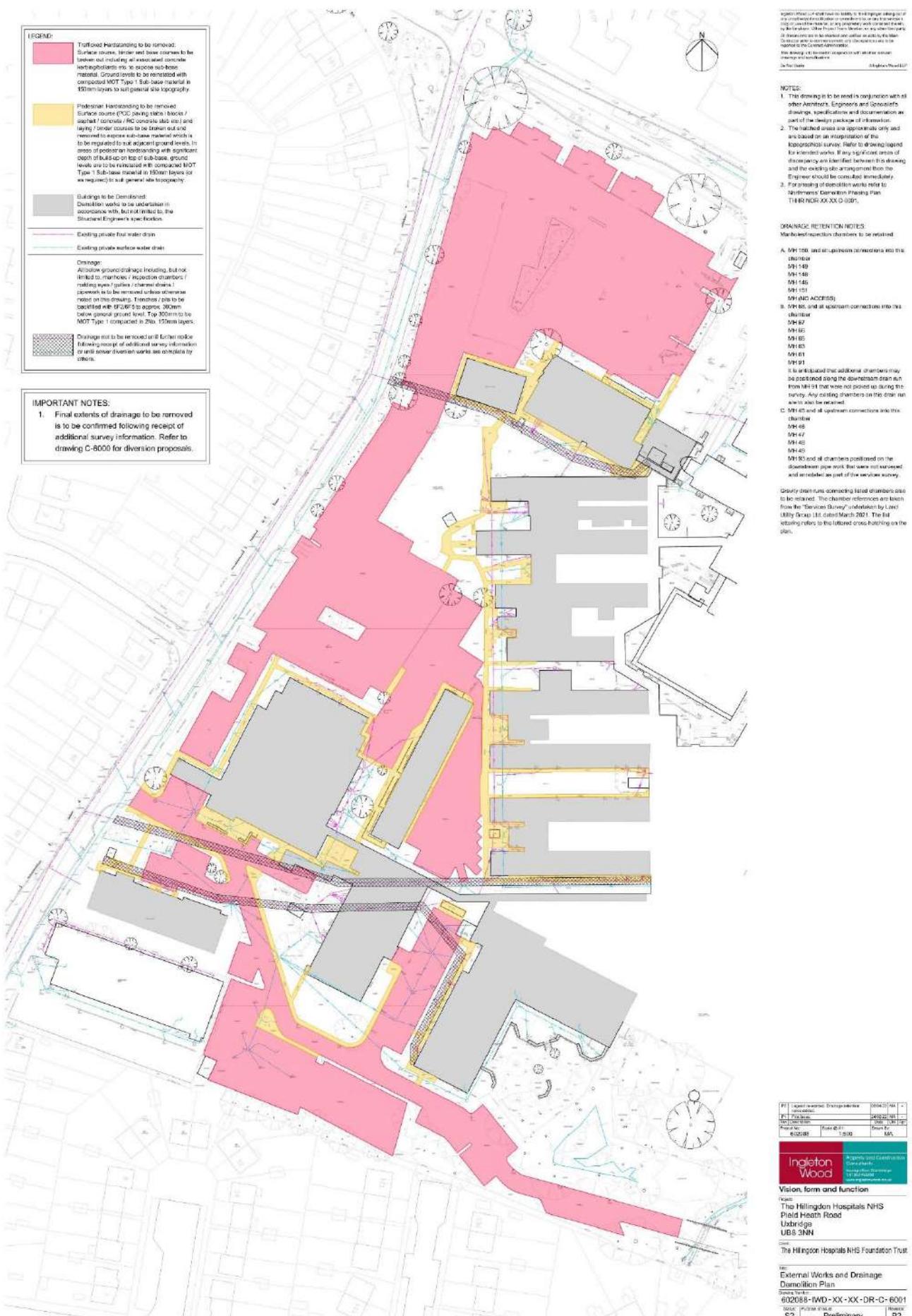




Appendix B Utility Diversions

B.1 Drainage Infrastructure Diversions





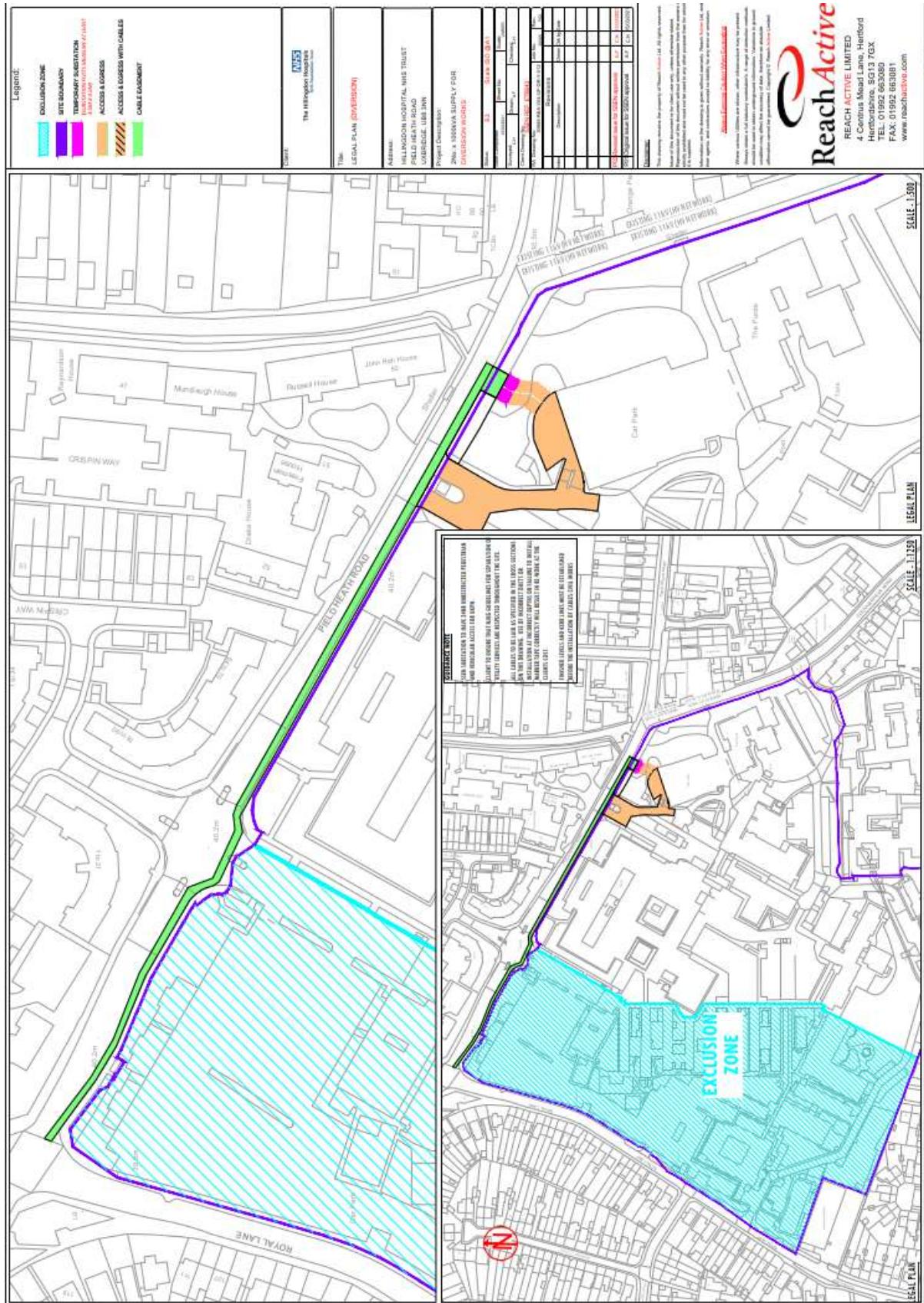
B.2 Domestic Water Diversions

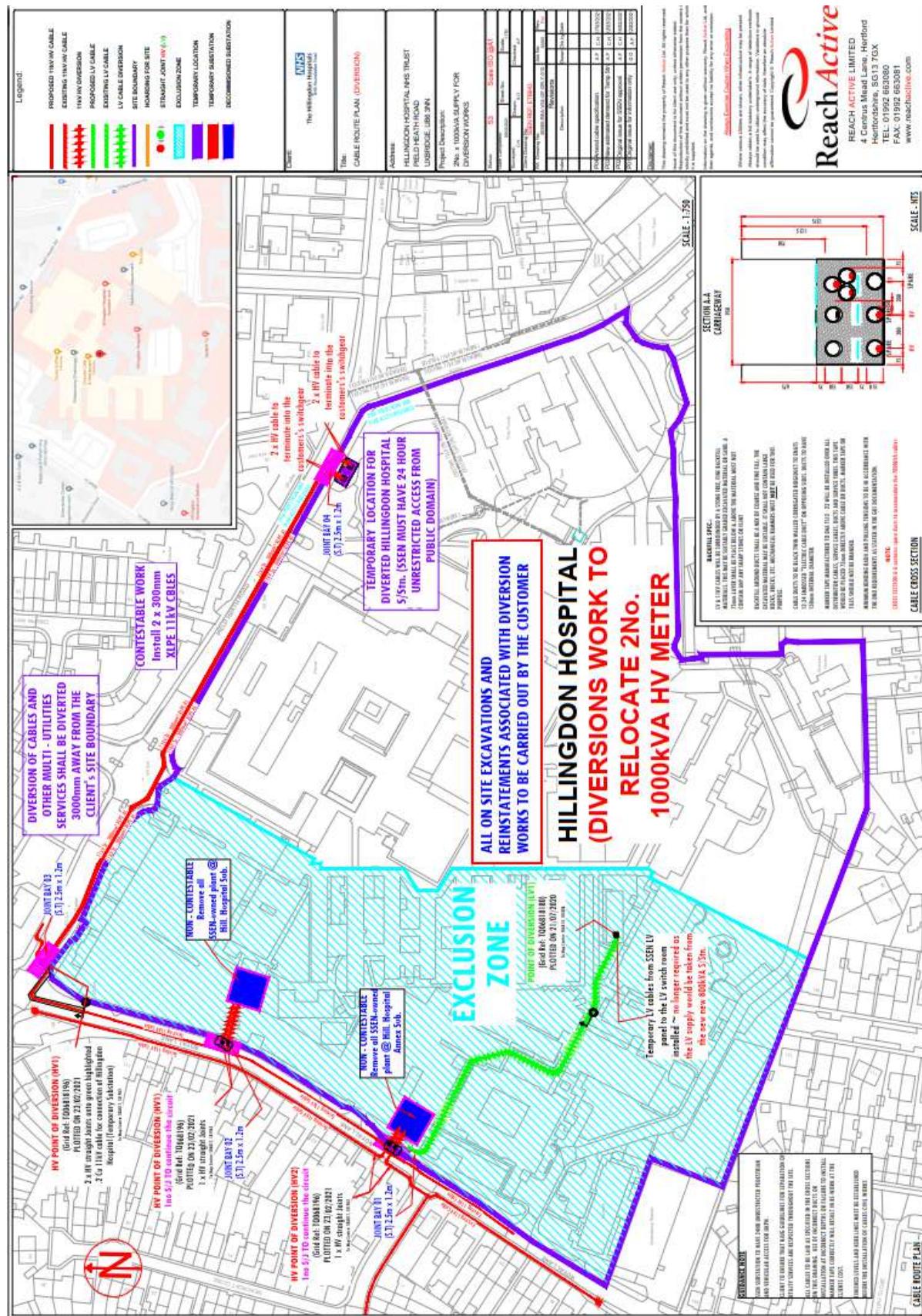


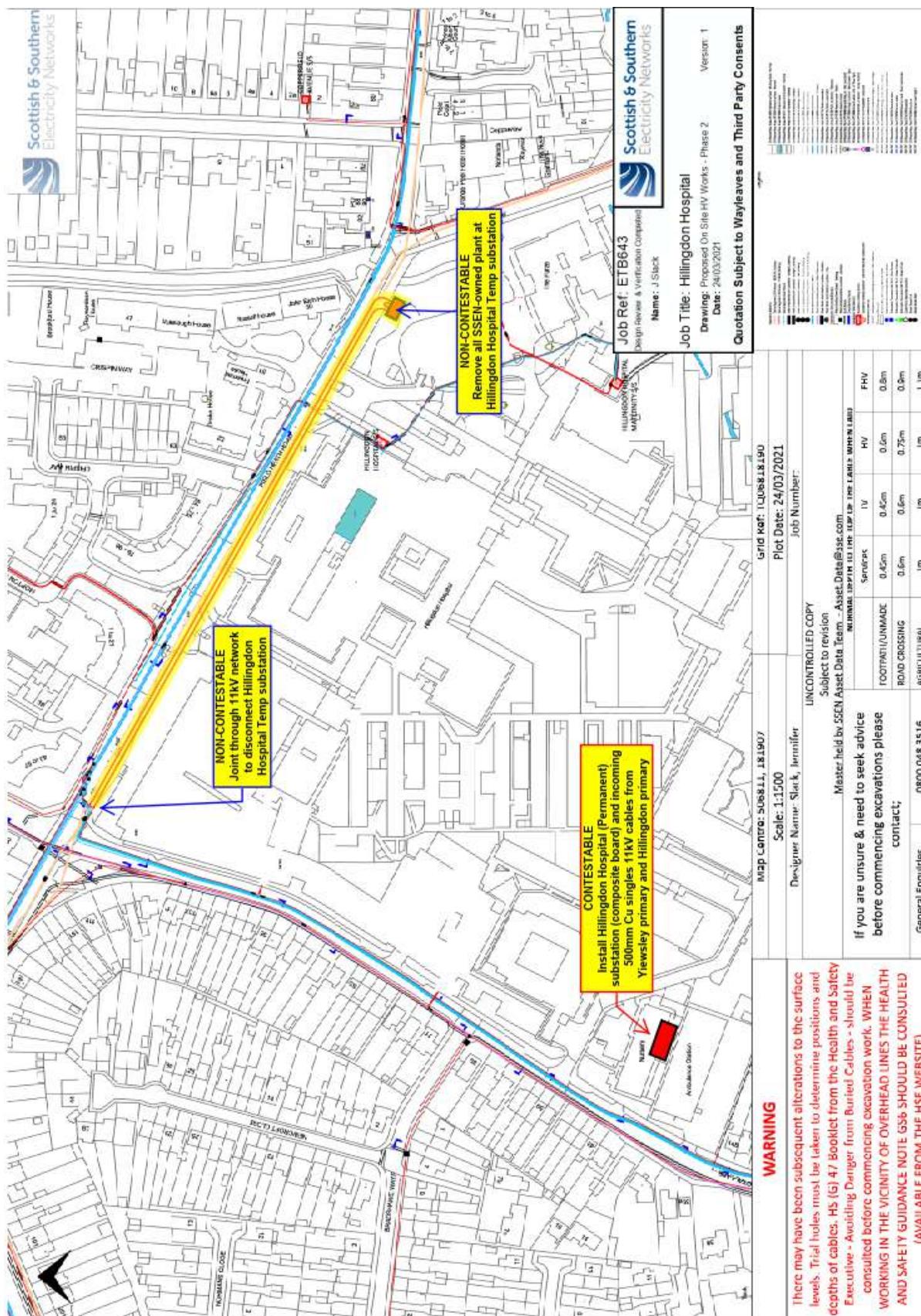
B.3 Gas Diversions

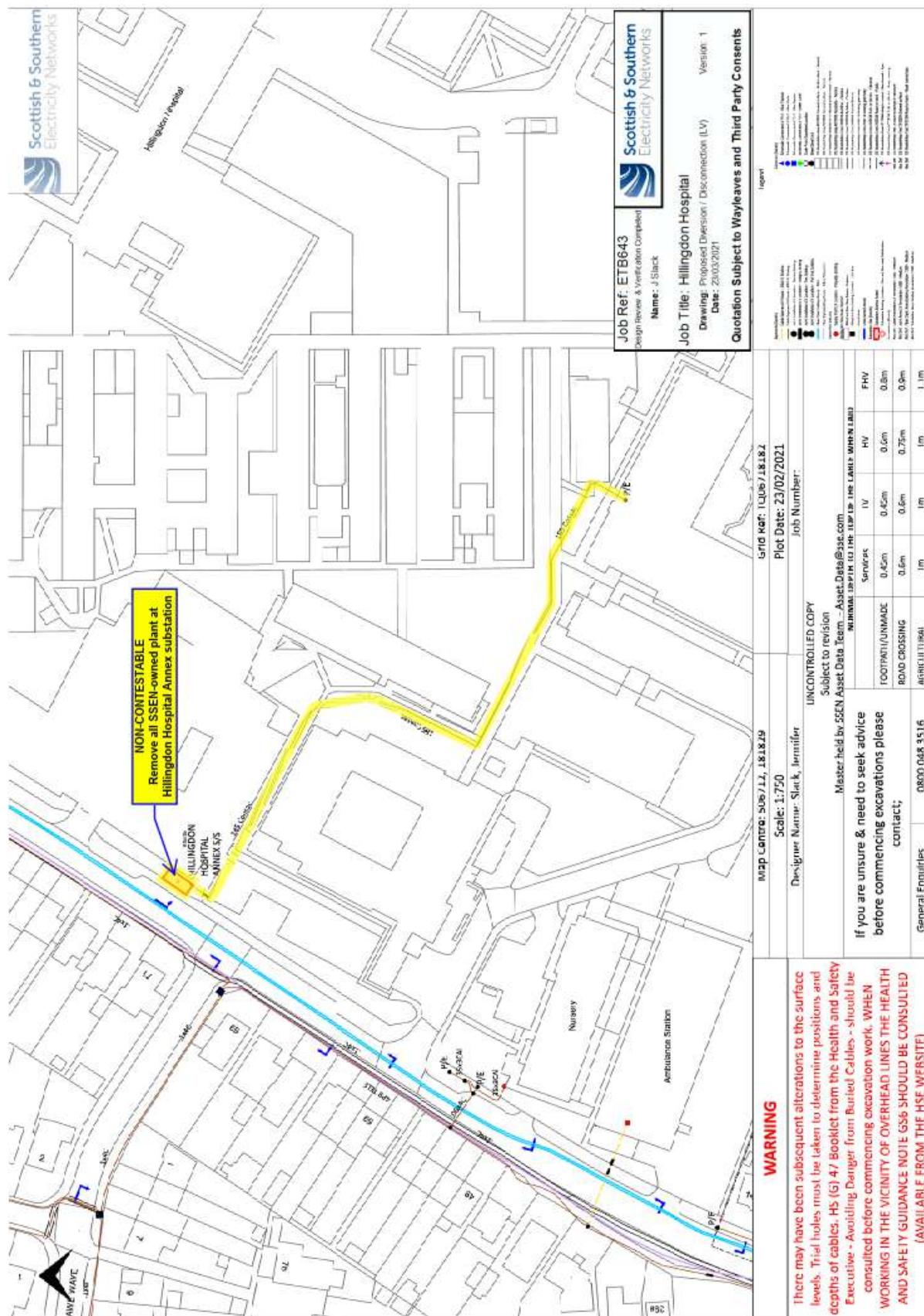


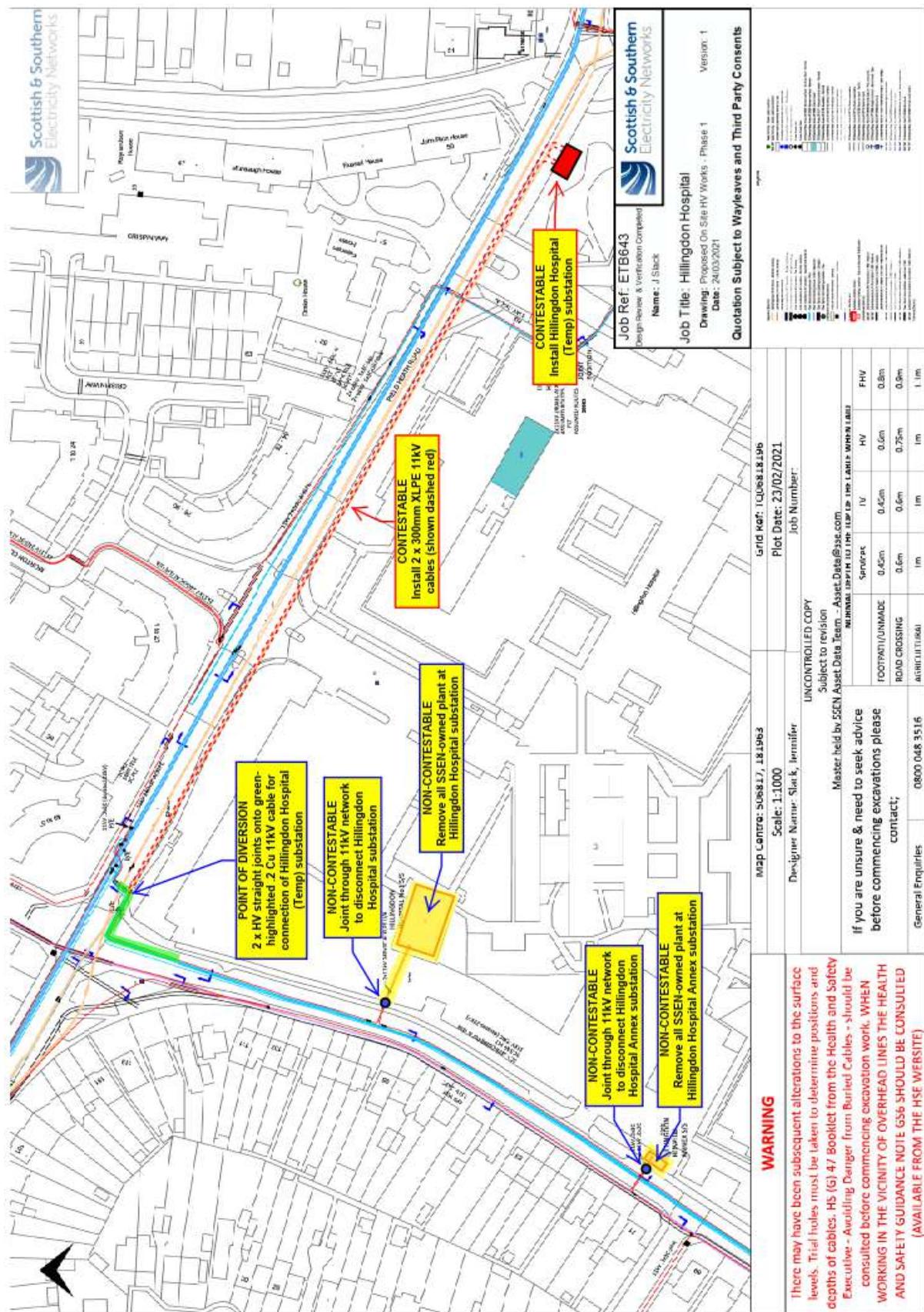
B.4 Electricity Infrastructure Diversions



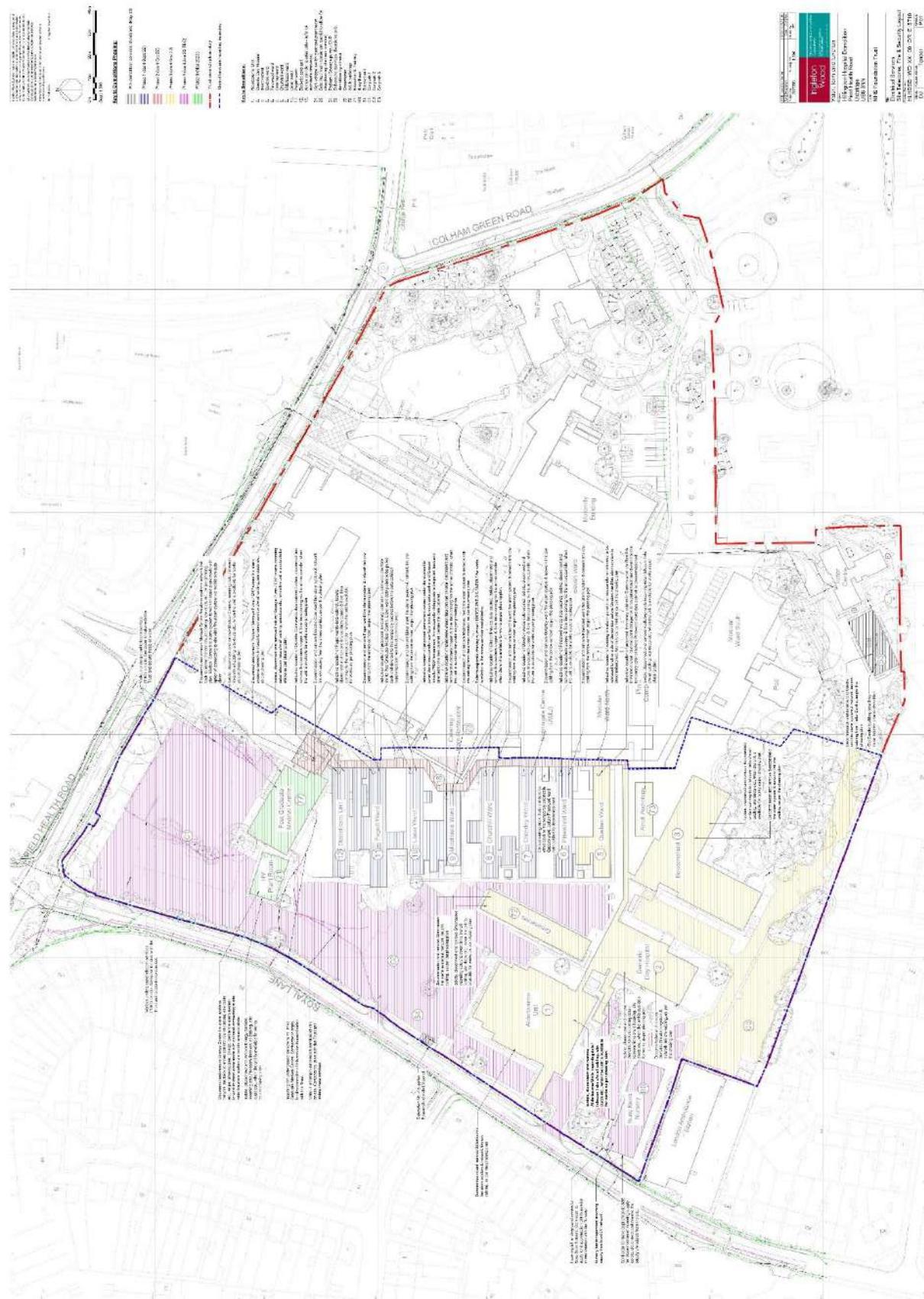






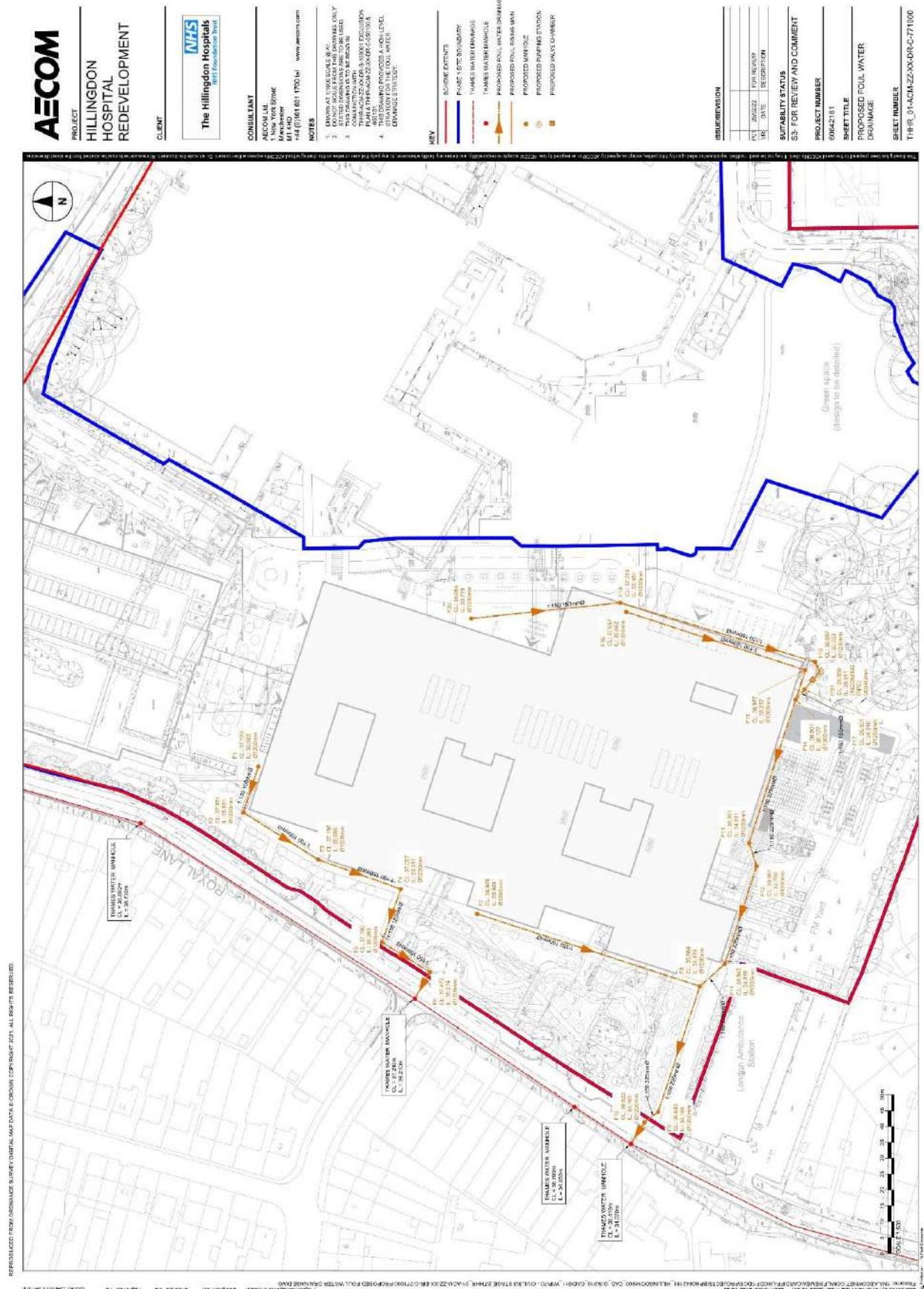


B.5 Site Telecoms, Fire & Security Diversions



Appendix C Proposed Utility Services

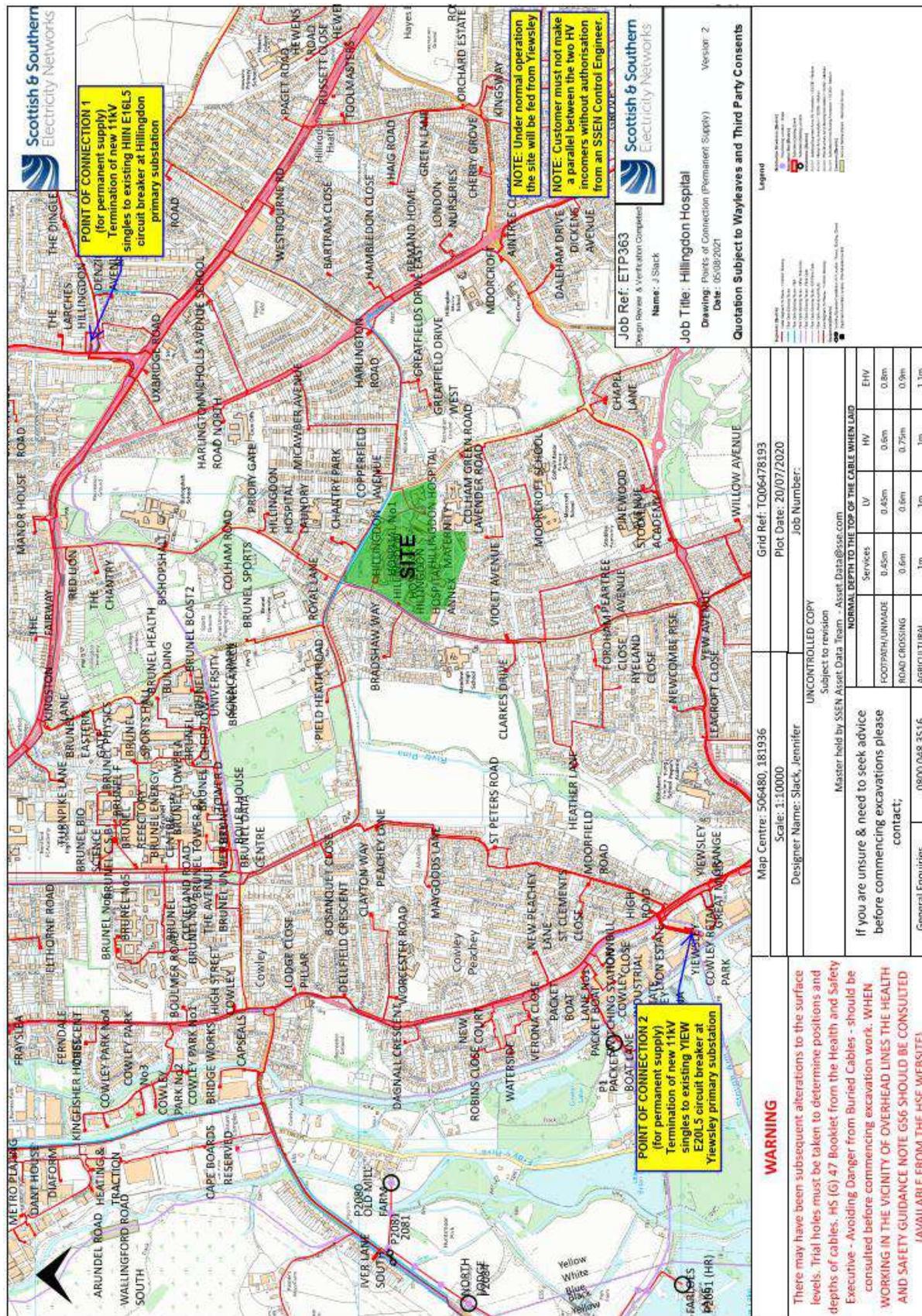
C.1 Proposed Drainage Infrastructure

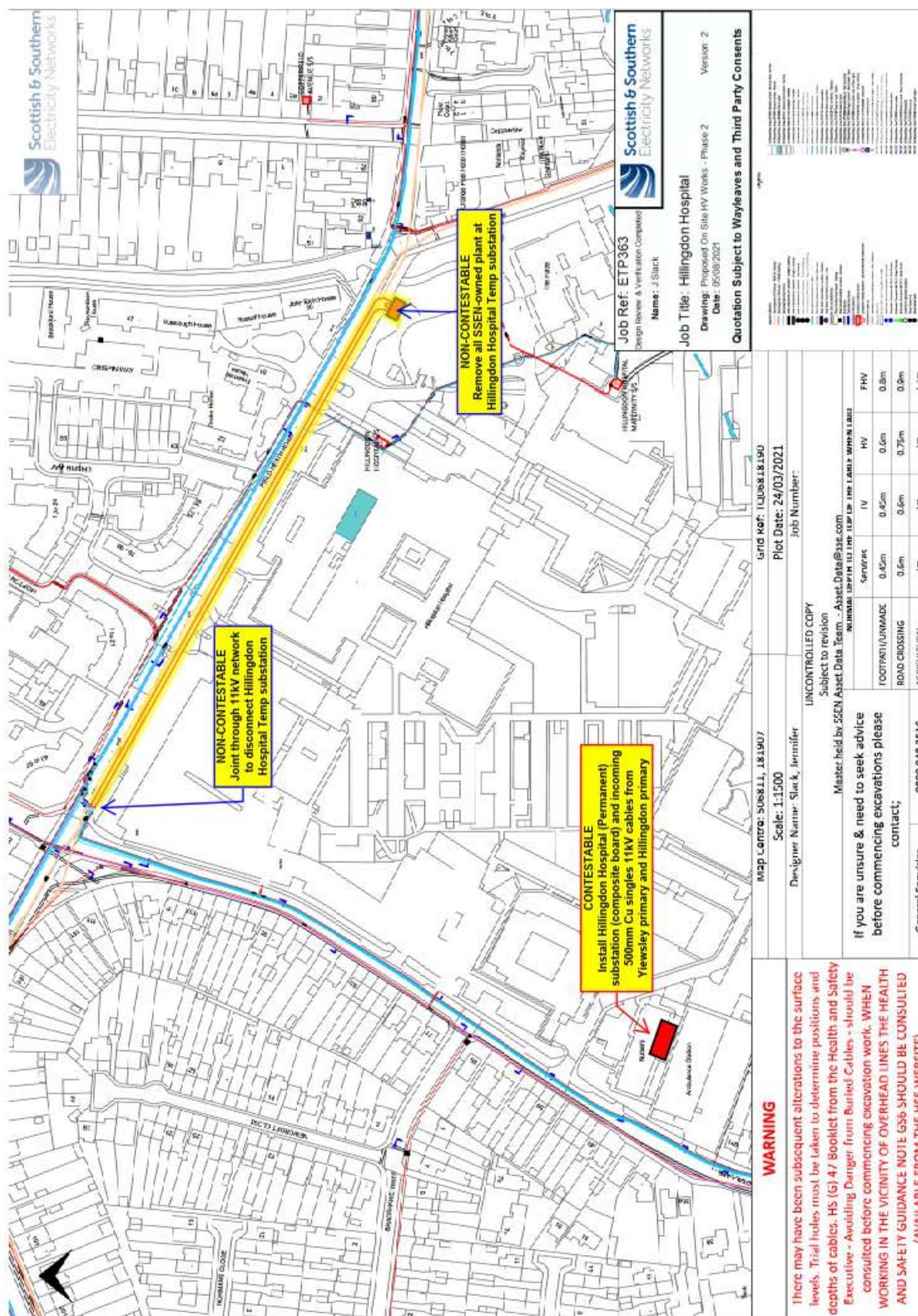


C.2 Proposed Domestic Water Infrastructure

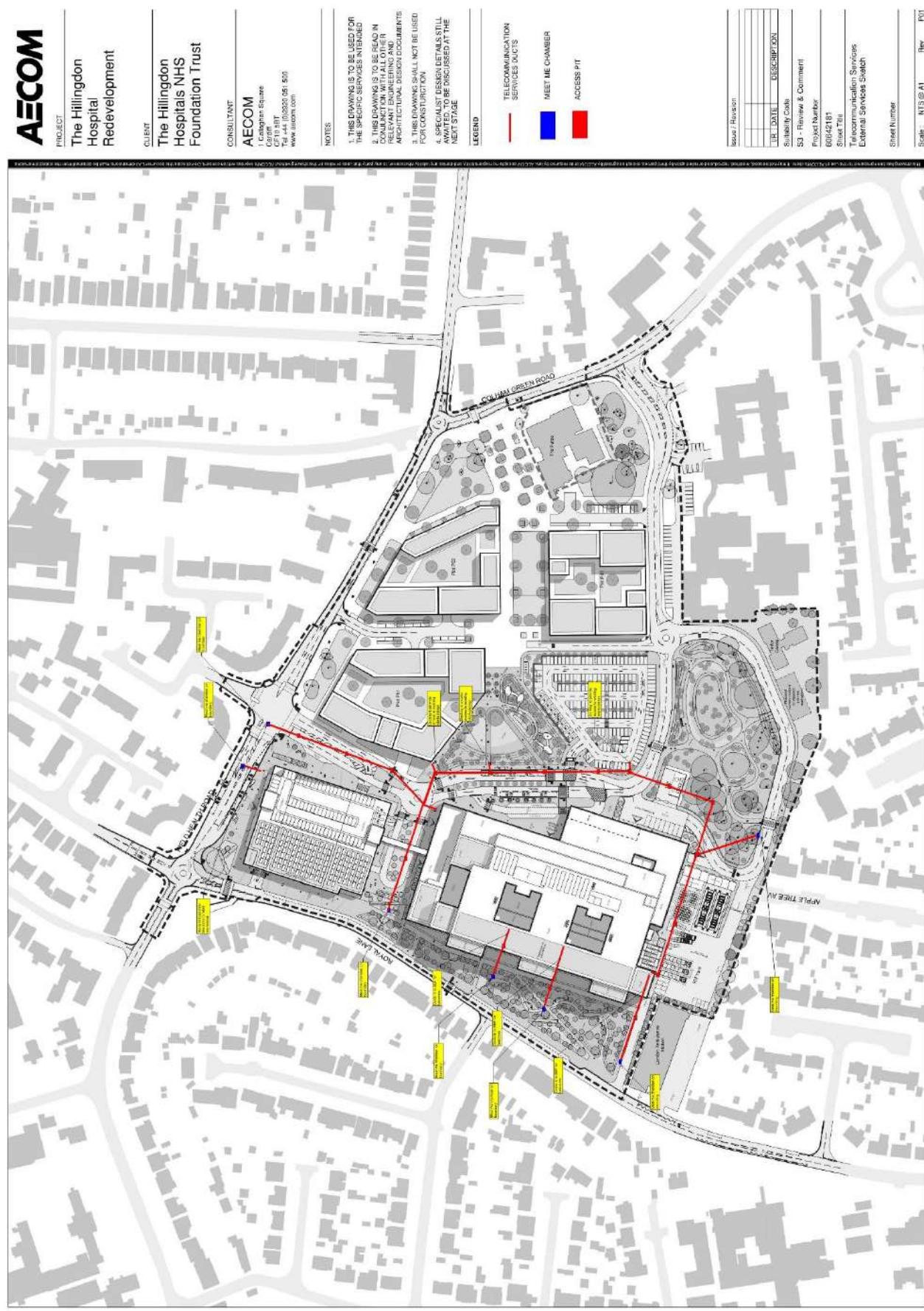


C.3 Proposed Electrical Services





C.4 Proposed Telecommunication Services



Numbered copies

Number:

<DocumentCopy>

Copies to:

<Copy recipient 1>

<Copy recipient 2>

<Copy recipient 3>
