East Midlands Gateway
Phase 2 (EMG2)

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ENVIRONMENTAL STATEMENT

Technical Appendices

Appendix 16A

Utilities Assessment Report

October 2025

16

The East Midlands Gateway Phase 2 and Highway Order 202X and The East Midlands Gateway Rail Freight and Highway (Amendment) Order 202X

SEGRO.COM/SLPEMG2

SEGRO

UTILITY ASSESSMENT REPORT

EMG2

SEGRO

utilityconnections

DOCUMENT VERIFICATION

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Prepared by:	[redacted]
Date:	21/08/2025

CONTENTS

1. EXECUTIVE SUMMARY

A utility infrastructure feasibility study has been conducted to assess existing infrastructure and the ability of existing networks to support the new development.

The following items have been identified as requiring attention or consideration prior to works commencing: -

1.1. CONNECTION CONSTRAINTS

ELECTRICITY

- The distribution network operator (DNO) for the area National Grid Electricity Distribution (NGED) have confirmed that the site can now be connected at 33kV extra high voltage (EHV) under an arrangement of providing additional capacity to the IDNO infrastructure that serves the original Segro EMG logistics park (EMG1).
- The DNO has confirmed that they can provide a new circuit breaker (CB) at Toton BSP which will allow for an additional 33kV IDNO adopted circuit to be installed to EMG1 to provide an import capacity of 22MVA.
- As part of the IDNO configuration works to serve EMG2, a new 33kV switchroom will be established within the primary substation (PSS) compound of EMG1 and from this new 33kV switchroom 2 x 33kV EHV circuit's will be installed along an agreed cable route from EMG1 to the new onsite PSS position within EMG2.
- 11kV HV diversion works will be required at the site to remove existing overhead apparatus that crosses the development area in multiple directions.
- Additional 11kV HV alteration works may be required as part of the S278 works intended around the A453 where highway widening / junction modification works are expected.
- NGED have confirmed that they have existing microwave links that cross the EMG2 site, and these will be affected by the proposed logistics unit's intended. Enquiries have been made with the DNO to ensure an alternative microwave arrangement can be implements without impacting the proposed development works.

WATER

- The statutory undertaker for the area Severn Trent Water have confirmed that the site can be served from their existing potable distribution main located on Ashby Road adjacent to the development area.
- The distribution main on Ashby Road is a 12" spun iron (SI).
- As part of the S278 works along Ashby Road, water main diversion works may be required.

GAS

- The gas transporter (GT) for the area Cadent Gas have confirmed that the site can be connected to the existing medium pressure (MP) gas mains network located on Ashby Road.
- The anticipated CSEP position is from an existing 250mm PE MP main.
- Cadent Gas have confirmed in the land enquiry made that the 250mm MP main does not have sufficient capacity to serve the project with the capacity requirements earmarked and reinforcement works will be required.
- A Cadent Gas detailed analysis study (DAS) will need to be undertaken to identify what reinforcement works will be required and provide confirmation of costs.
- As part of the S278 works along Ashby Road, gas main diversion works may be required.

TELECOM

- Openreach, Virgin Media and Vodafone have underground ducted networks along Ashby Road adjacent to the development area.
- As part of the S278 works along Ashby Road telecoms diversion works may be required.

2. INTRODUCTION

GENERAL

The report has been produced to access the feasibility of delivering new utility connections to the development and assessment of existing utility infrastructure which may be affected requiring disconnection and/or diversion prior to construction works commencing.

The scope of this report is as follows:-

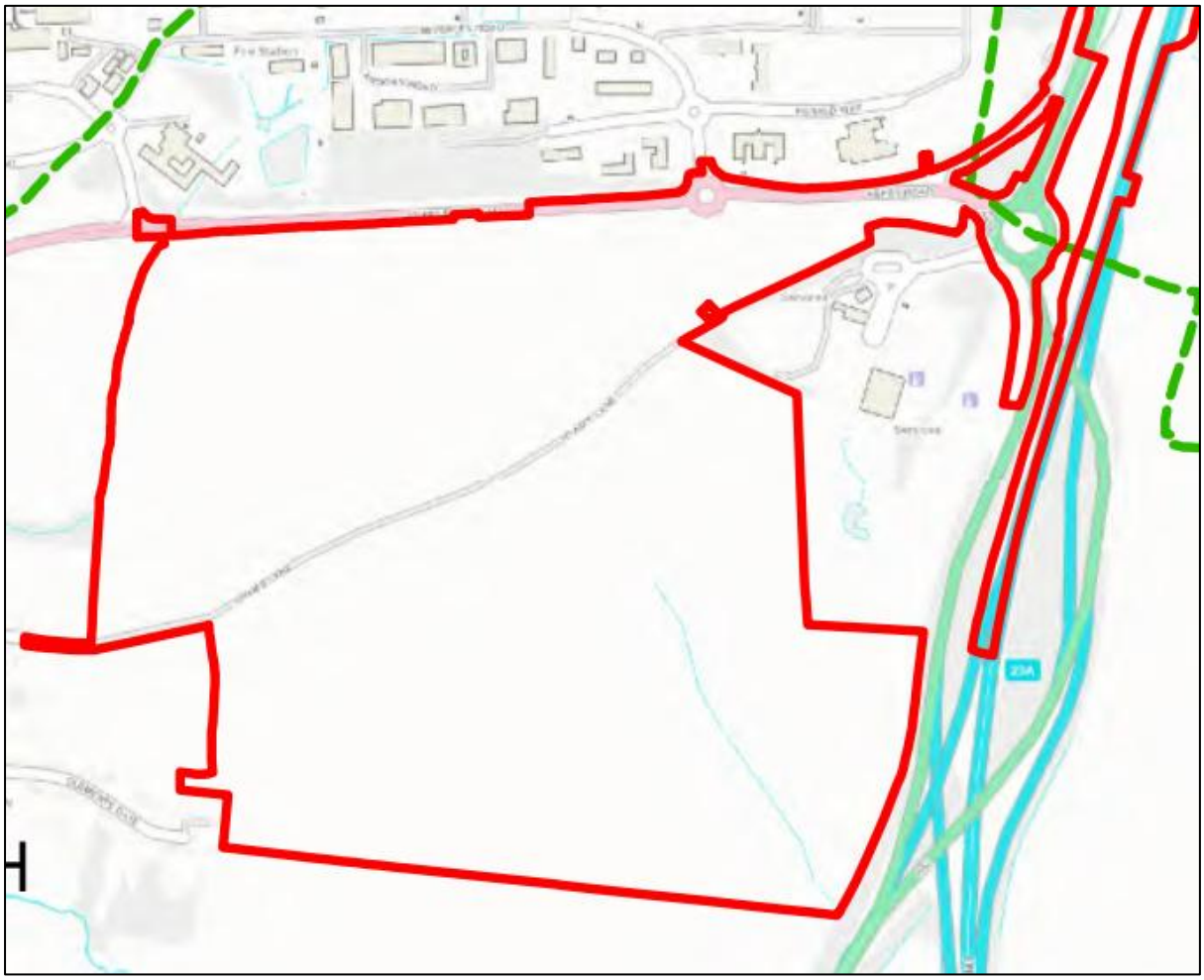
1. Identify existing utility assets on site and around the site boundary;
2. Outline any potential diversionary requirements of existing utility assets;
3. Profile the water, electricity and gas requirements;
4. Outline potential Points of Connection (POC's) to extend new utility infrastructure into the development site;
5. Make comment on potential off-site reinforcement to deliver the profiled site load requirements;

3. SITE LOCATION

The site is located on greenfield land to the south of the A453 and East Midlands Airport as can be seen in figure 3.1 below.

Grid Reference: 446079, 324983

Figure 3.1 – Site Location



4. PROPOSED DEVELOPMENT

Figure 4.1 – Illustrative Masterplan

5. EXISITNG UTILITY INFRASTRUCTURE

5.1. MAIN DEVELOPMENT AREA

UTILITY NETWORK COMPOSITE OVERLAY - MAIN DEVELOPMENT

Figure 5.1.1 – Utility Network Composite Overlay

UTILITY NETWORK ASSET RECORDS SEARCH - MAIN DEVELOPMENT

A utility asset records search has been undertaken to determine what assets exist near to or on the proposed development site. The results of this search and affected assets only can be seen in table 5.1.2 below.

Table 5.1.2 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
Cadent Gas Networks	Gas	Yes
Severn Trent Water	Water	Yes
Openreach	Telecoms	Yes
Orange	Telecoms	Yes

5.2. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

ELECTRICITY – NGED

HV NETWORK – OVERHEAD 11KV (HV) CABLES

The NGED asset record indicates there are existing overhead 11kV (HV) cables and poles which run along the western boundary of the site as indicated by figures 5.2.1, 5.2.2 and 5.2.3 below. In their current positions the cables and poles do not directly clash with the proposed unit's, however, they could be affected by the formation of any bunds and/or plateaus in this area of the site.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the overhead cables and poles, the results of which should then be overlaid onto the proposed earthworks design.

Figure 5.2.1 – Overhead 11kV (HV) cables and poles

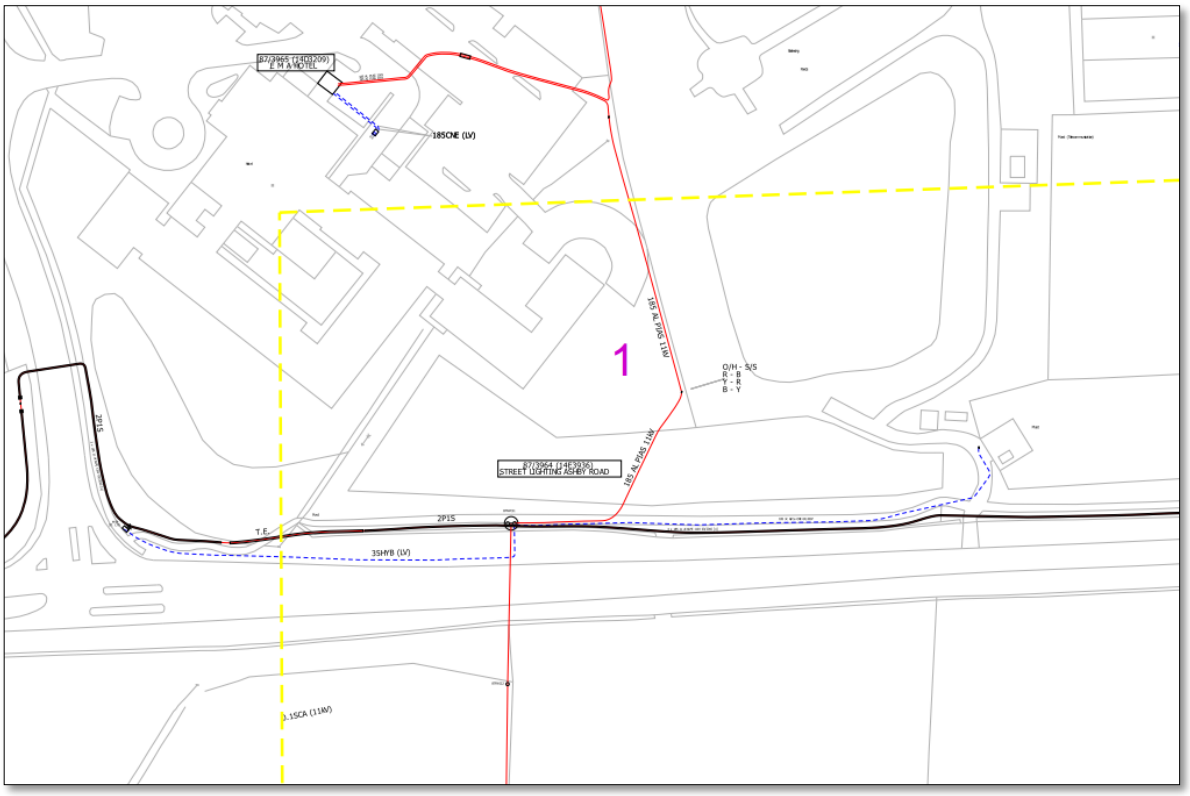


Figure 5.2.2 – Overhead 11kV (HV) cables and poles

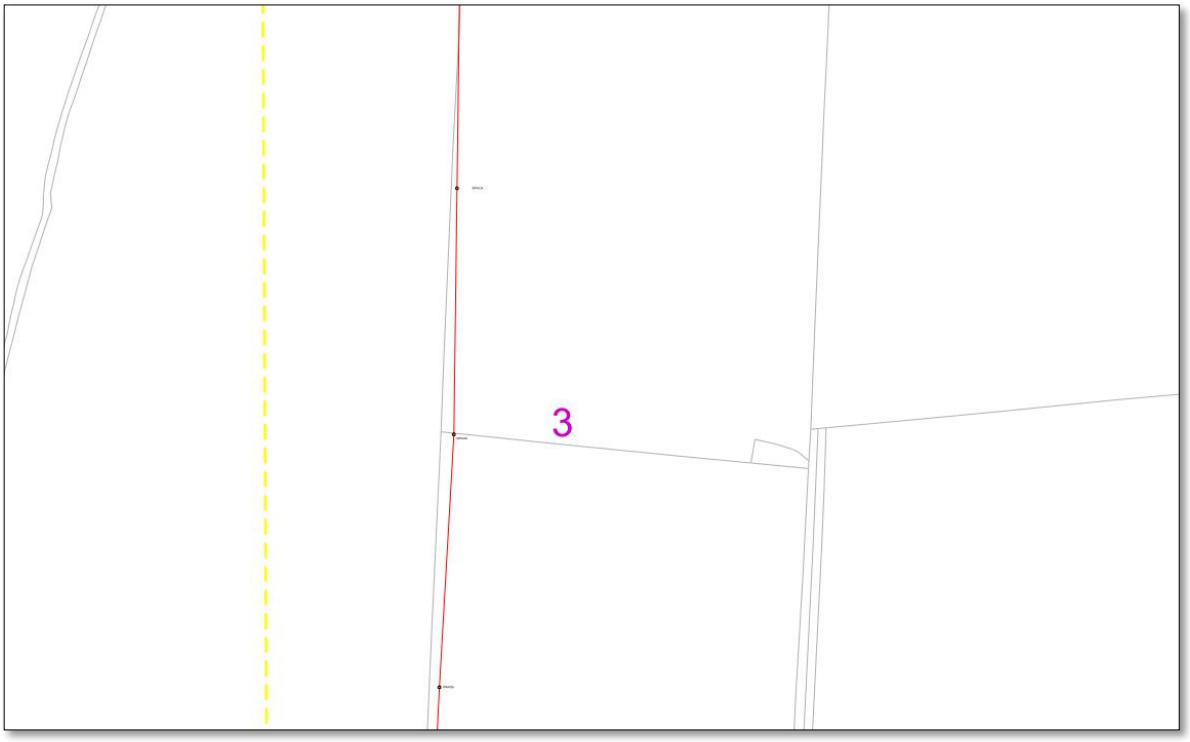
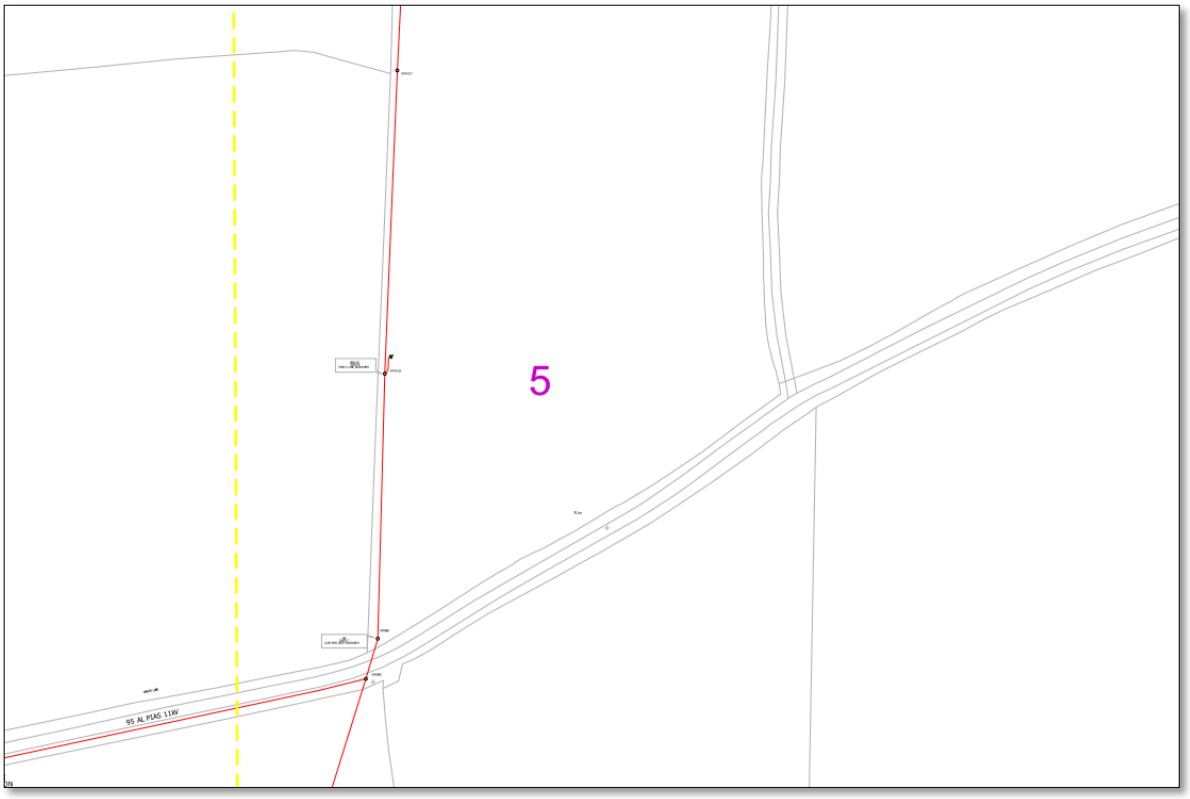


Figure 5.2.3 – Overhead 11kV (HV) cables and poles



HV AND LV NETWORK – UNDERGROUND 11KV (HV) AND LV CABLES

The NGED asset record indicates there are existing underground 11kV (HV) and LV cables which enter the site boundary from the A453 and run through the site to the east of Unit 06 before terminating within the existing mast and Donington Park Services as indicated by figures 5.2.4, 5.2.5 and 5.2.6 below.

It's anticipated that these cables will need to be diverted to accommodate the construction of the proposed estate road and the proposed bus terminal as shown in the utility composite overlay in figure 5.1.1 above.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the overhead cables and poles, the results of which should then be overlaid onto the proposed earthworks design.

Figure 5.2.4 – Underground 11kV (HV) and LV cables

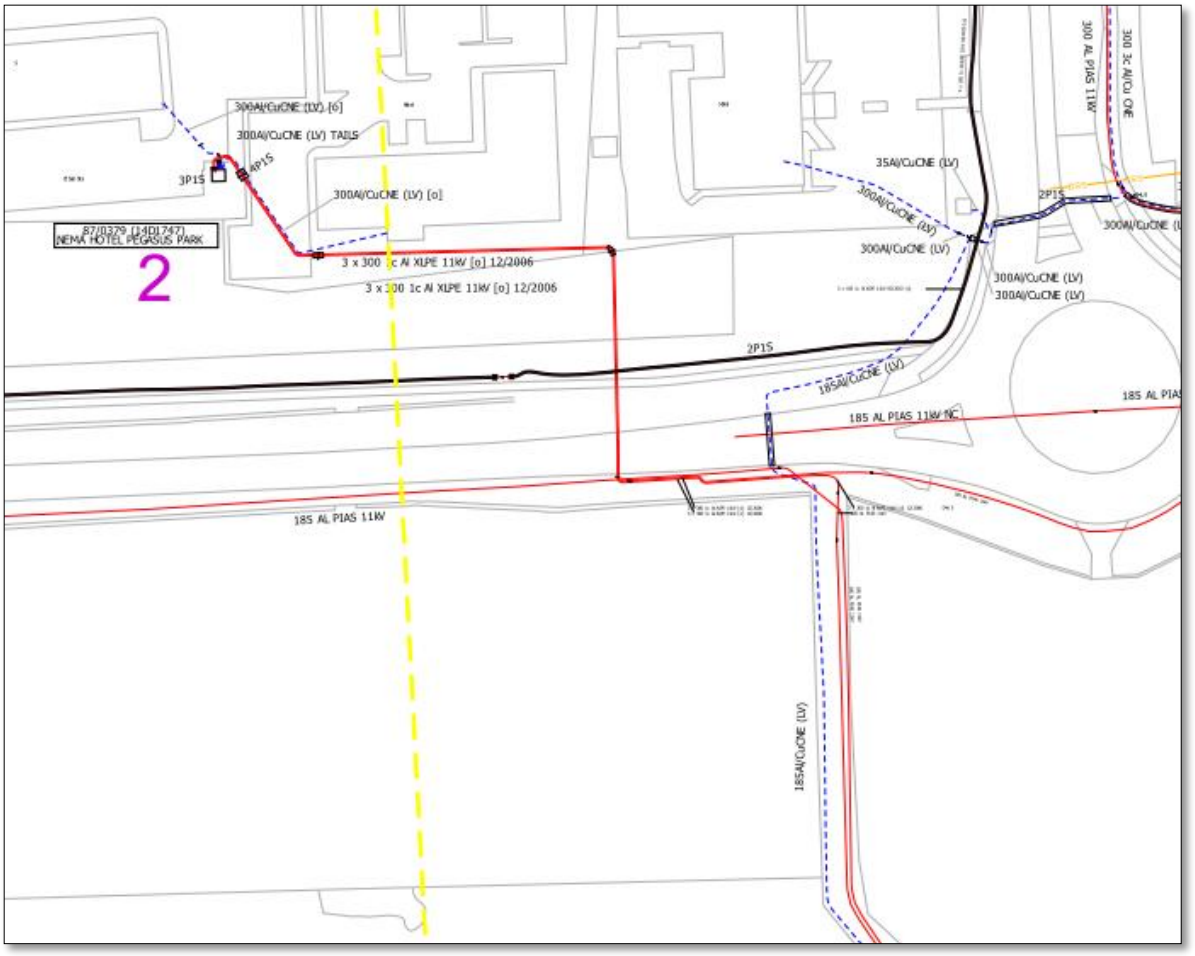


Figure 5.2.5 – Underground 11kV (HV) and LV cables

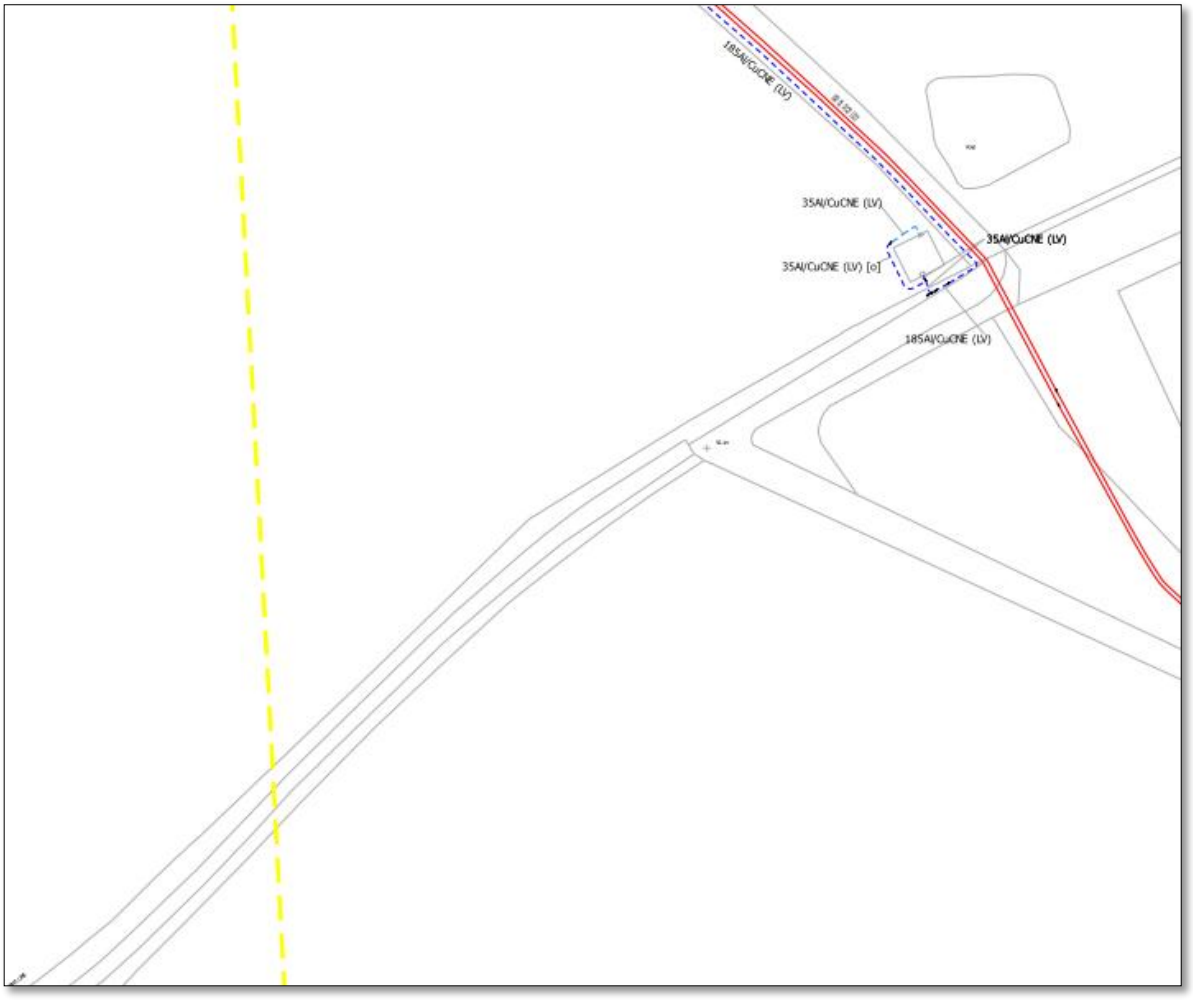
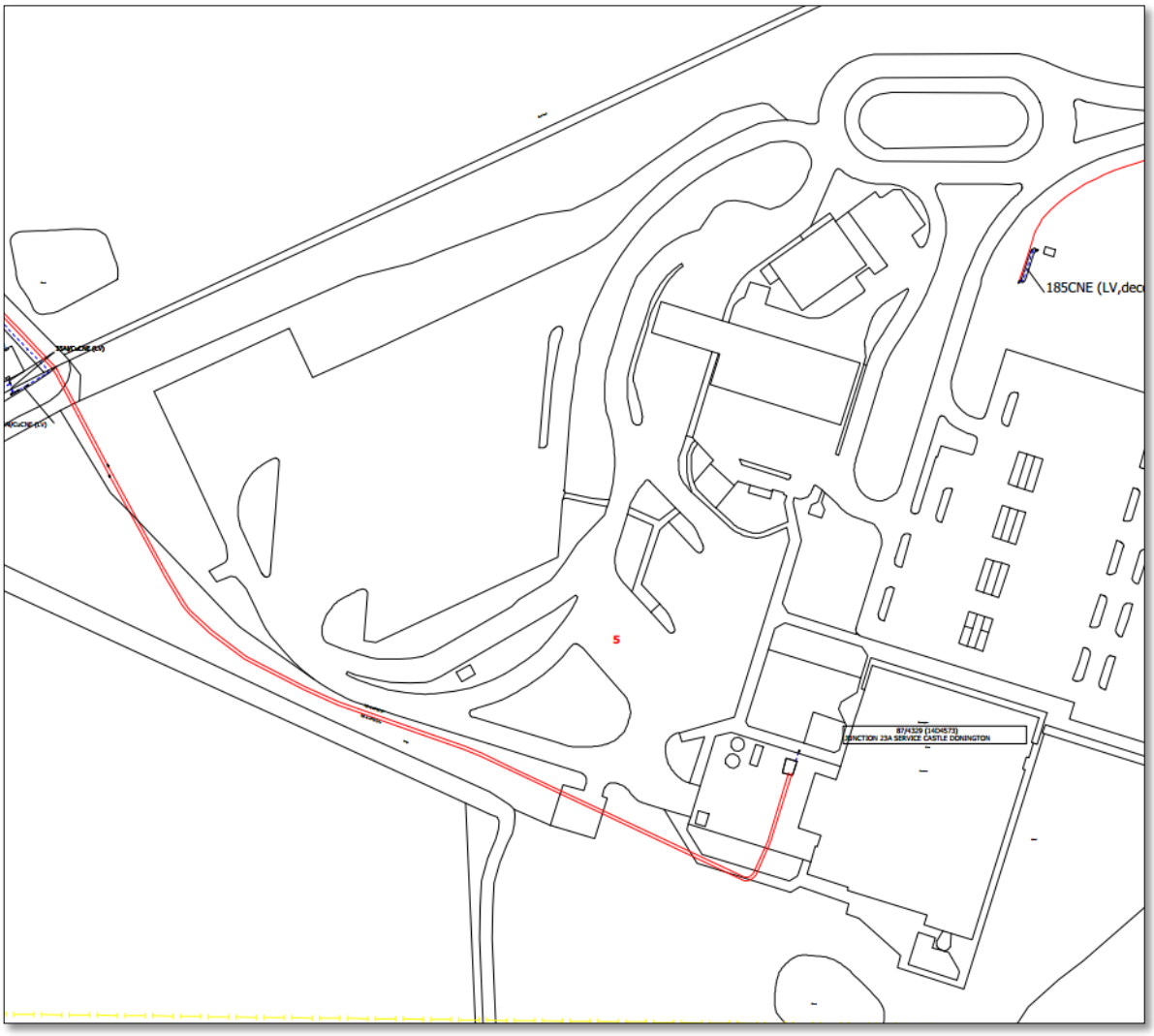


Figure 5.2.6 – Underground 11kV (HV) and LV cables



HV NETWORK – OVERHEAD 11KV (HV) CABLES

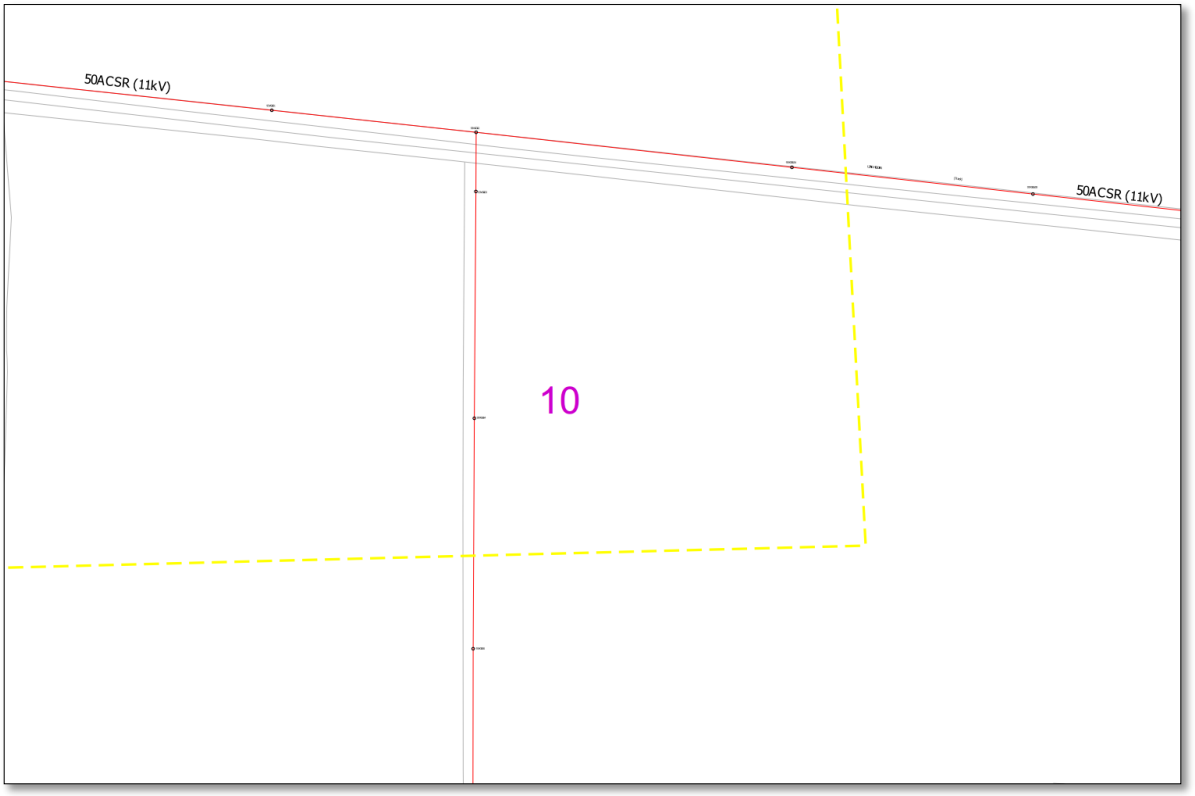
The NGED asset record indicates there are existing overhead 11kV (HV) cables and poles which run along the southern boundary of the site adjacent to Long Holden as indicated by figures 5.2.7 and 5.2.8 below.

In their current positions the cables and poles do not directly clash with the proposed unit's, however, they could be affected by the formation of any bunds and/or plateaus in this area of the site.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the overhead cables and poles, the results of which should then be overlaid onto the proposed earthworks design.

Figure 5.2.7 – Overhead 11kV (HV) cables and poles

Figure 5.2.8 – Overhead 11kV (HV) cables and poles



GAS – CADENT GAS NETWORKS

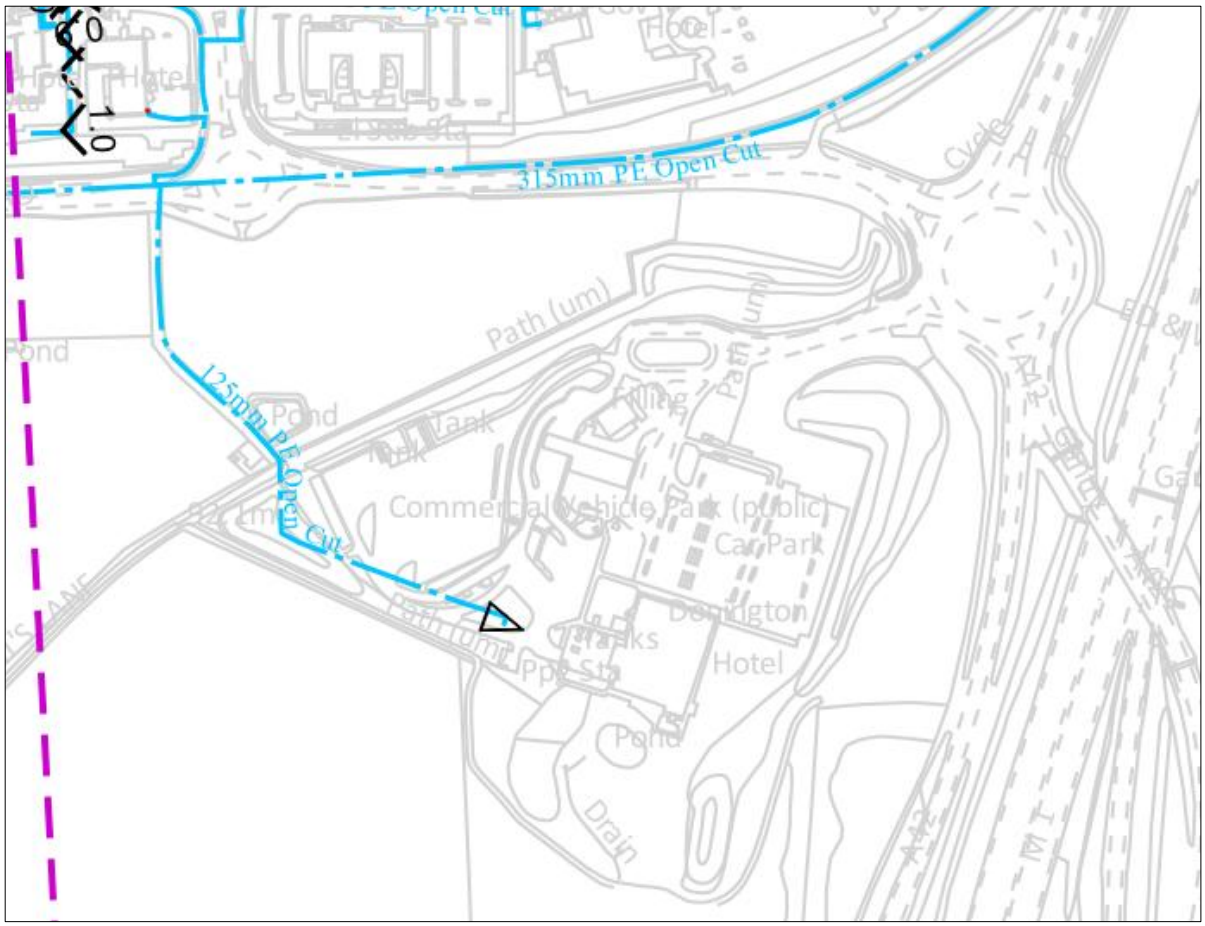
MEDIUM PRESSURE NETWORK – 125MM PE MEDIUM PRESSURE MAIN

The Cadent Gas Networks asset record indicates there is an existing underground 125mm PE medium pressure gas mains which enters the boundary from the A453 and runs through the site to the east of Unit 06 before terminating within Donington Park Services as indicated by figures 5.2.9 below.

It's anticipated that this main will need to be diverted to accommodate the construction of the proposed estate road and the proposed bus terminal as shown in the utility composite overlay in figure 5.1.1 above.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground mains, the results of which should then be overlaid onto the proposed earthworks design.

Figure 5.2.9 – Existing underground 125mm PE Medium Pressure gas main



WATER – SEVERN TRENT WATER

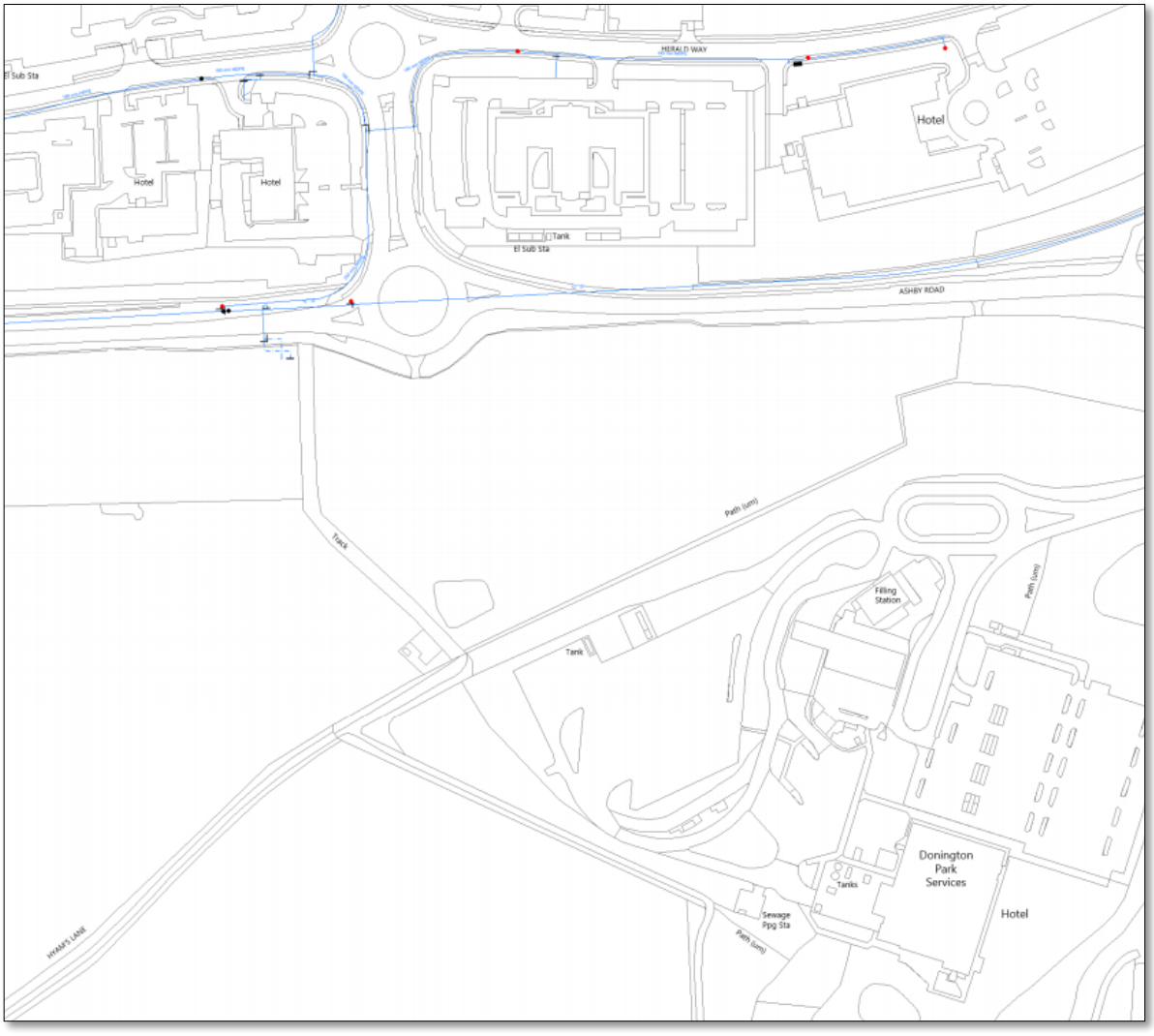
POTABLE WATER NETWORKS

The Severn Trent Water asset record indicates there is an existing underground pipe (size and material unknown) which runs across the A453 and terminates into a valve in the verge as indicated by figure 5.2.10 below.

It's anticipated that from this point the supply pipe changes from adopted to private and it's assumed that it runs through the site to the east of Unit 06 before terminating within Donington Park Services, if this proves to be the case the supply pipe will need to be diverted to accommodate the construction of the proposed estate road and the proposed bus terminal as shown in the utility composite overlay in figure 5.1.1 above.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the private supply pipe, the results of which should then be overlaid onto the proposed earthworks design.

Figure 5.2.10 – Existing underground pipe (size and material unknown) under the A453

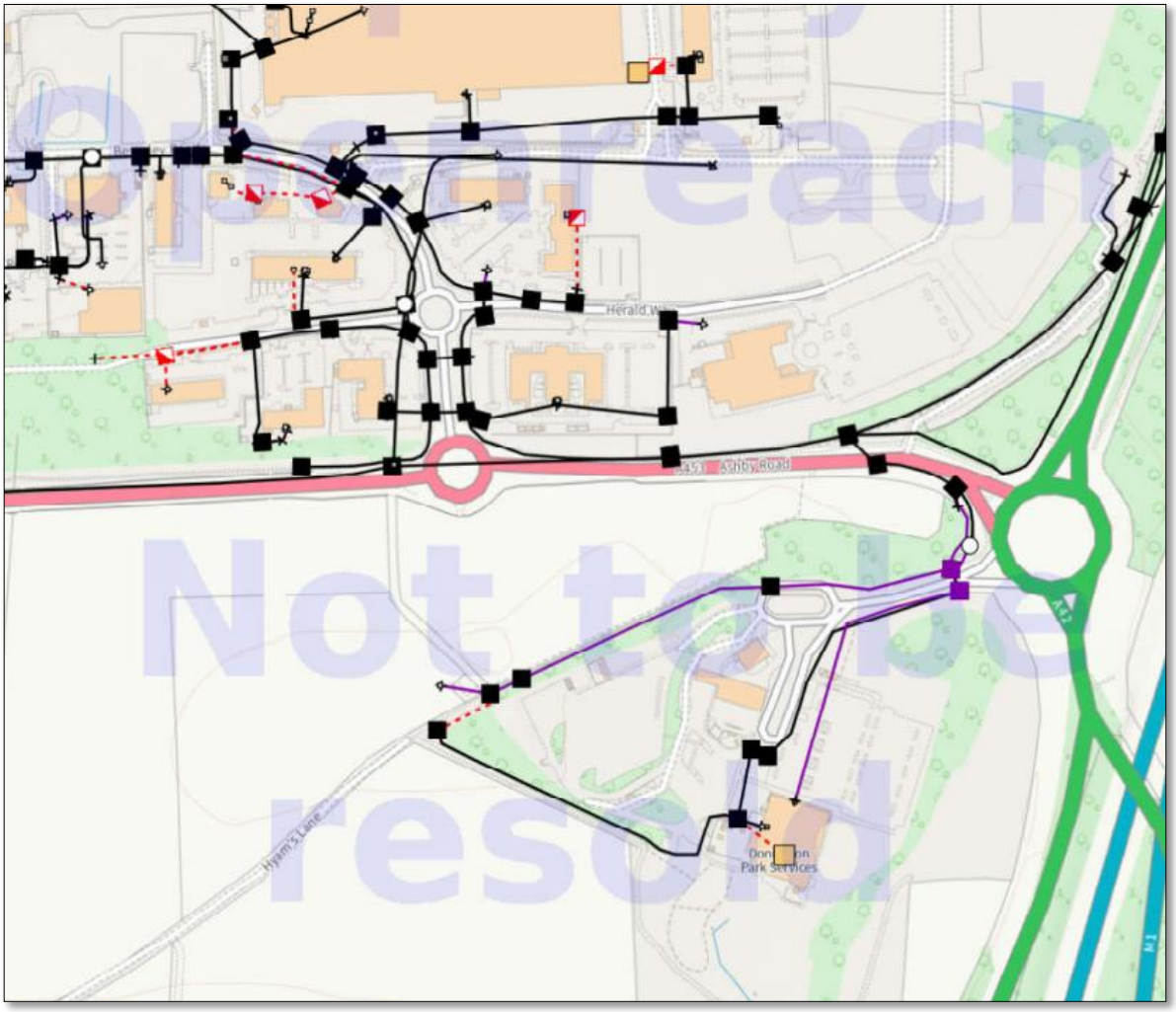


TELECOMS – OPENREACH

DUCTED NETWORK – DONINGTON PARK SERVICES

The Openreach asset record indicates there are existing underground ducts and chambers to the north east of the site within the Donington Park Services as indicated by figure 5.2.11 below, it's recommended that a GPR survey is undertaken in this area of the site to determine the true position of the ducts and chambers.

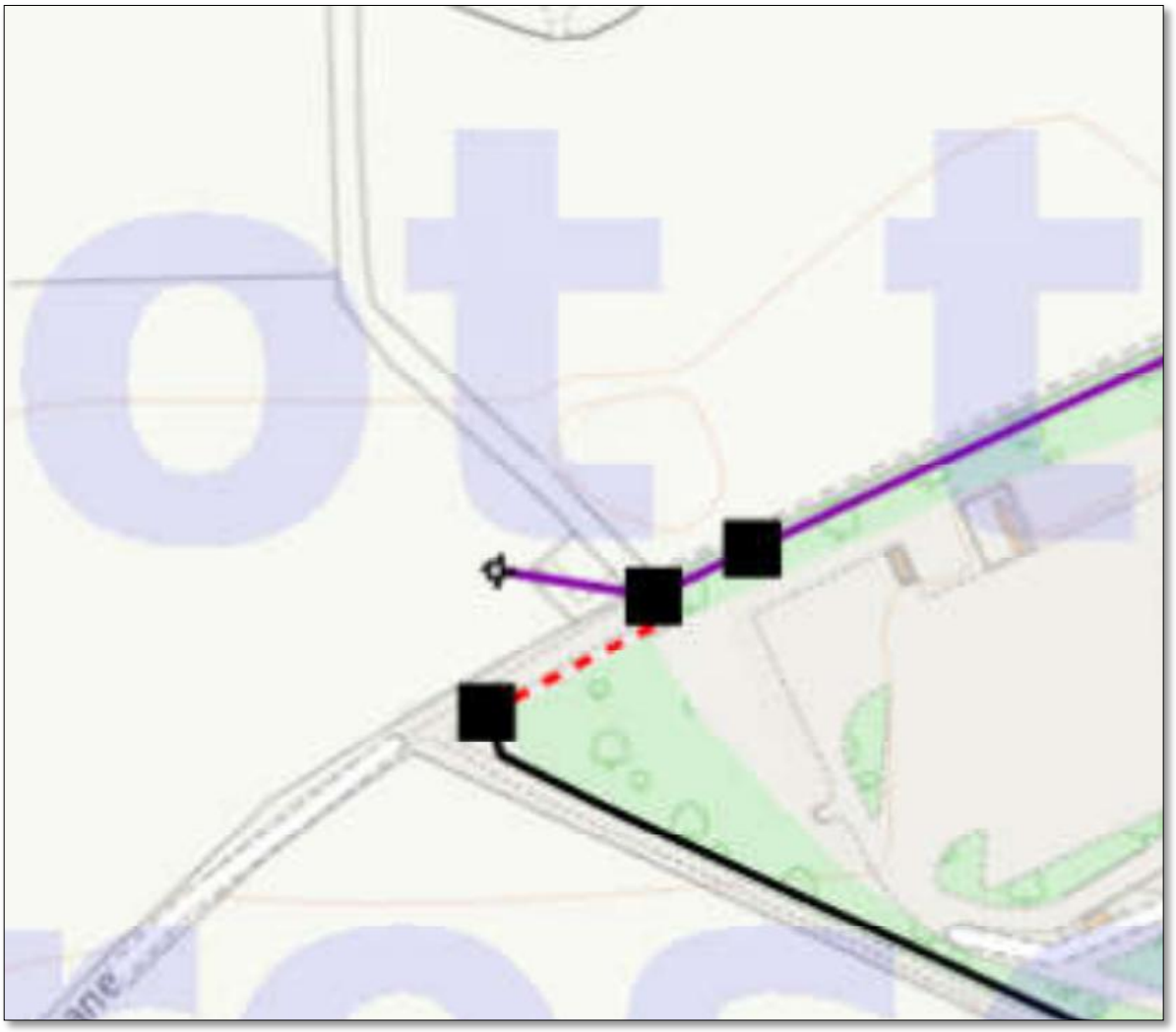
Figure 5.2.11 – Existing underground ducts and chambers with Donington Service Station



DUCTED NETWORK – TELECOMS MAST

The Openreach asset record indicates there is an existing underground duct which comes into the site from Donington Service Station as indiciated by figure 5.2.12 below, it's anticipated the duct terminates into the existing telecoms mast located in this area of the site and as such it's it's recommended that a GPR survey is undertaken to establish it's true position to determine if it needs to be slewed or diverted.

Figure 5.2.12 – Existing underground duct near the telecoms mast



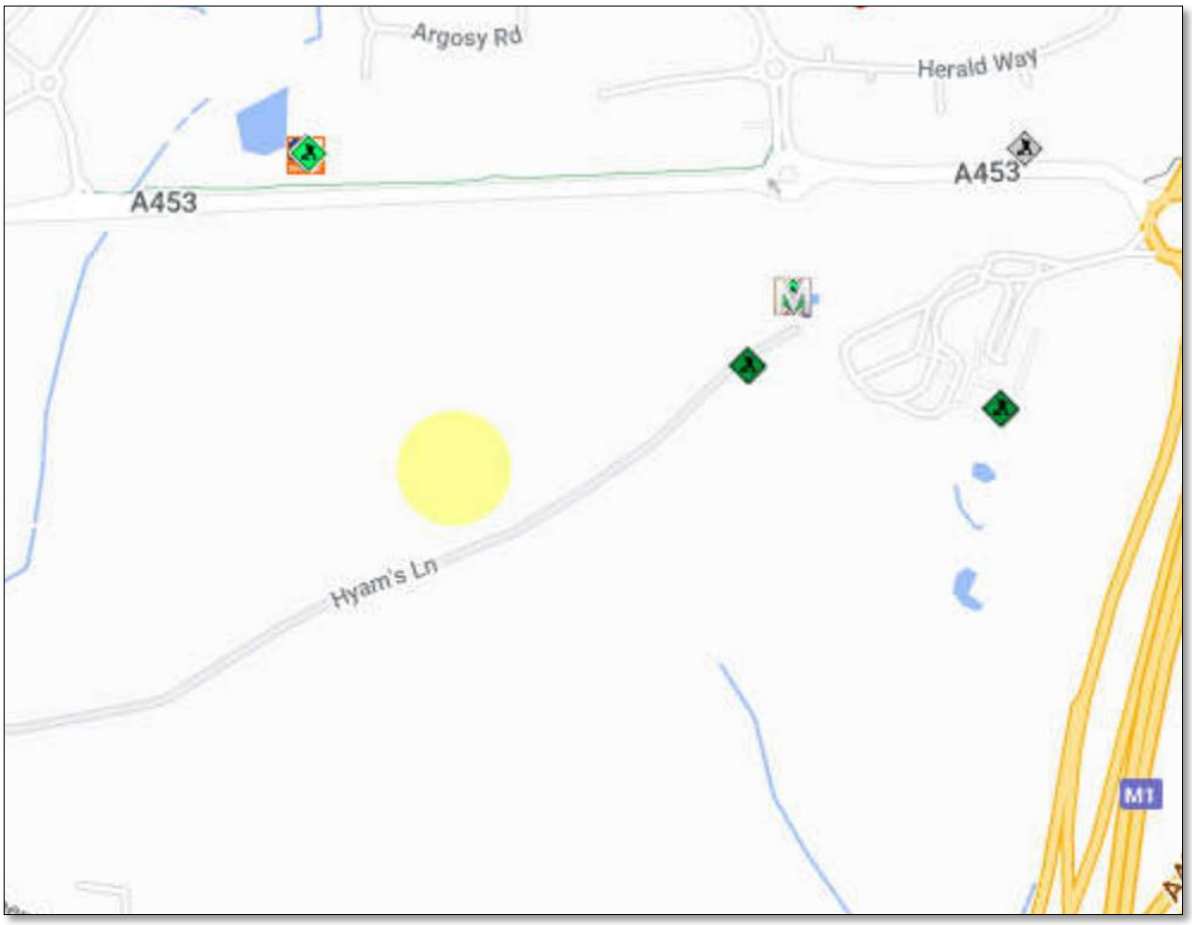
MAST DATA

TELECOMS MAST – HYAMS LANE

The Mast Data asset record indicates there is an existing telecoms mast located at the end of Hyams Lane as indicated by figure 5.2.13 below, in its current position the mast does not conflict with the proposed unit's however consideration needs to be given to the potential loss in line of sight and interconnectivity.

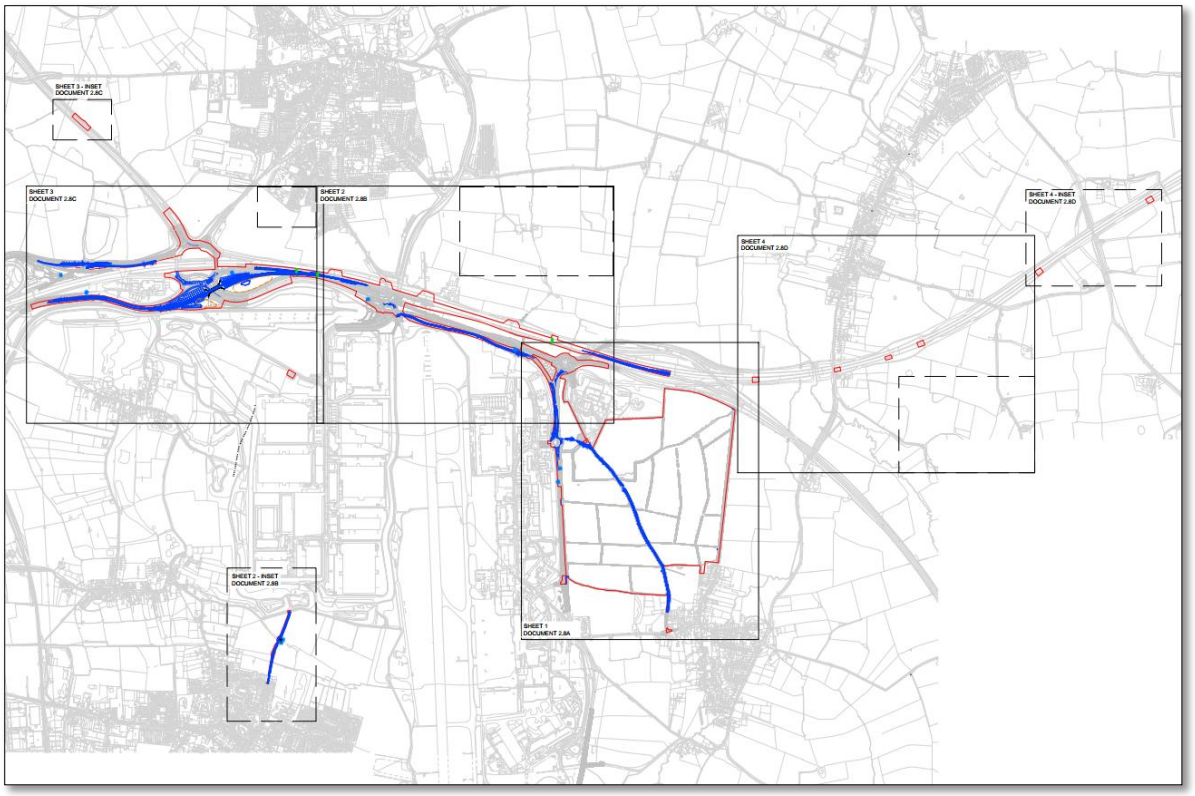
It's recommended that an enquiry is submitted to the mast operators to establish if it's feasible for the mast to remain in situ after the proposed units have been constructed.

Figure 5.2.13 – Existing telecoms mast on Hyams Lane



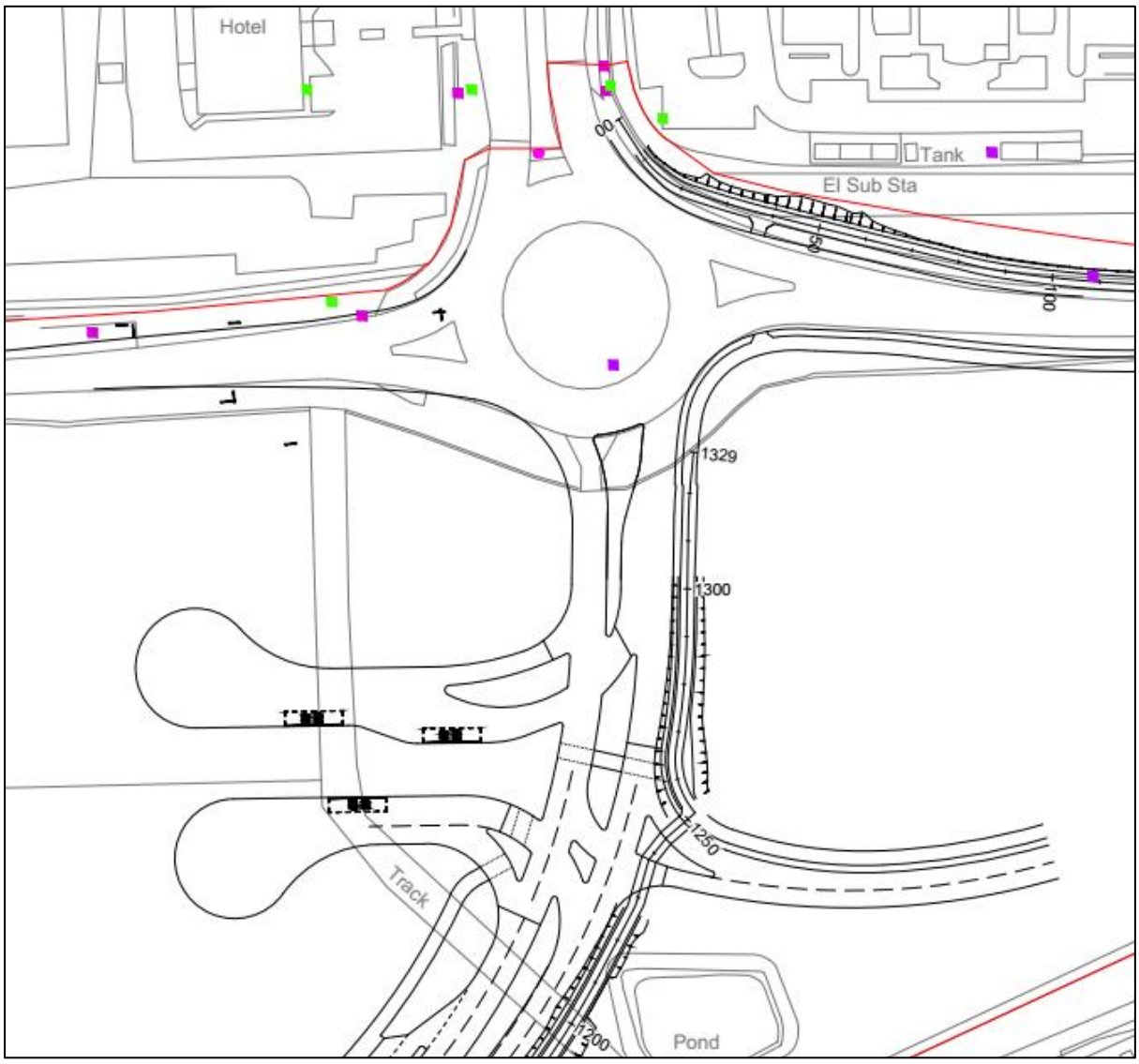
5.3. S278 HIGHWAYS WORK AREAS

Figure 5.3.1 – Highways Plan



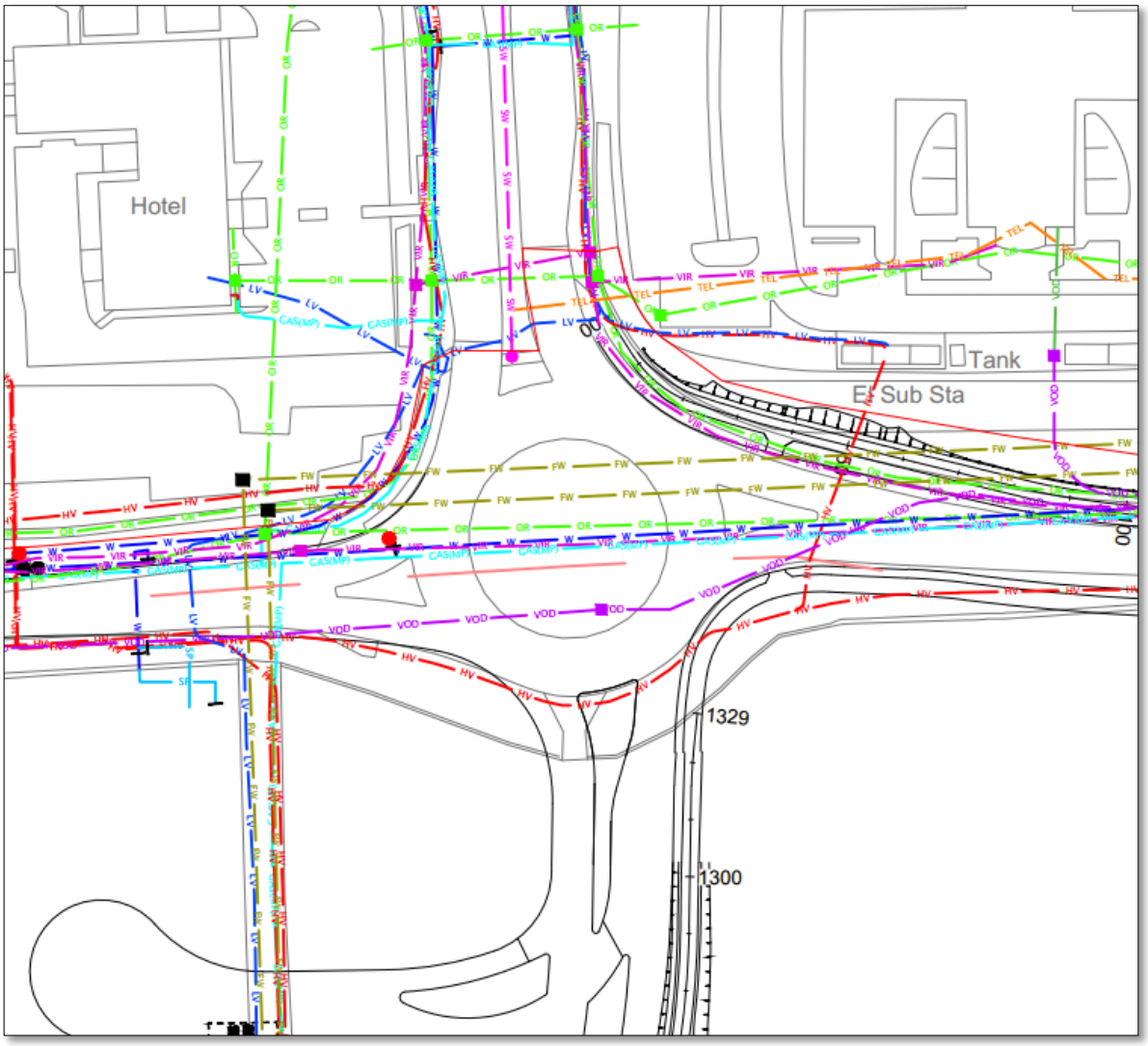
5.4. S278 HIGHWAYS WORK AREA 01 – EMG2 PRIMARY ACCESS

Figure 5.4.1 – EMG2 Primary Access



UTILITY NETWORK COMPOSITE OVERLAY – EMG2 PRIMARY ACCESS

Figure 5.4.2 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – EMG2 PRIMARY ACCESS

A utility asset records search has been undertaken to determine what assets exist near to or within the A453.

The results of this search and affected assets only can be seen in table 5.4.3 below.

Table 5.4.3 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
Cadent Gas Networks	Gas	Yes
Severn Trent Water	Water	Yes
Openreach	Telecoms	Yes
Virgin Media	Telecoms	Yes
Vodafone	Telecoms	Yes

5.5. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

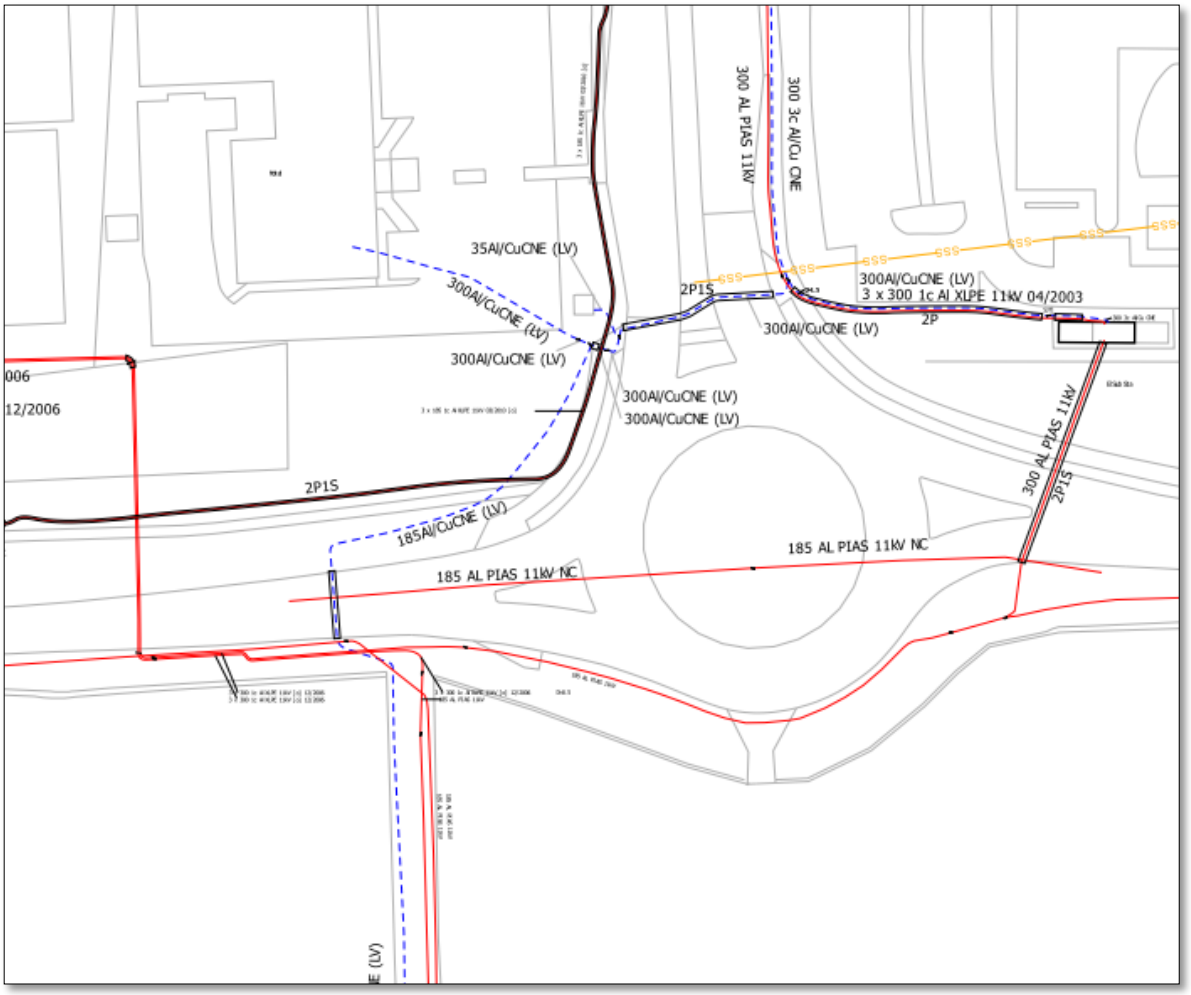
ELECTRICITY – NGED

HV AND LV NETWORK – UNDERGROUND 11KV (HV) AND LV CABLES

The NGED asset record indicates there are existing underground 11kV (HV) and LV cables on the northern and southern sides of the existing roundabout as indicated by figure 5.5.1 below, it's anticipated these cables will have to be diverted to accommodate the proposed alterations to the roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.5.1 – Existing underground 11kV (HV) and LV cables in the vicinity of the existing roundabout



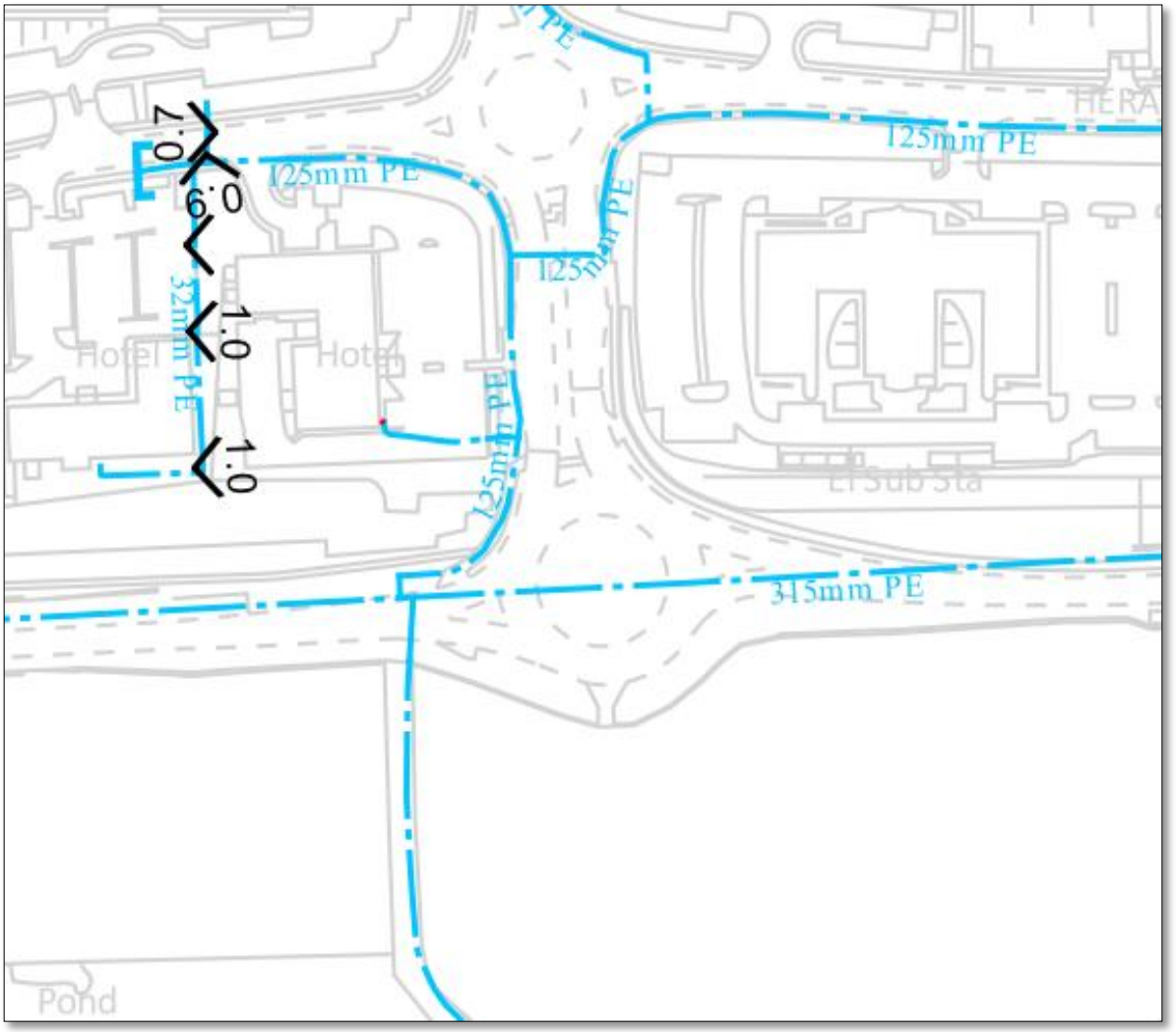
GAS – CADENT GAS NETWORKS

MEDIUM PRESSURE NETWORK – 315MM AND 125MM PE MEDIUM PRESSURE MAINS

The Cadent Gas Networks asset record indicates there are existing 315mm PE and 125mm PE Medium Pressure (MP) gas mains which run across the existing roundabout as indicated by figure 5.5.2 below, it's anticipated these mains will need to be diverted to accommodate the proposed alterations to the roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary by trial hole investigations.

Figure 5.5.2 – Existing 315mm PE and 125mm PE MP gas mains in the vicinity of the existing roundabout



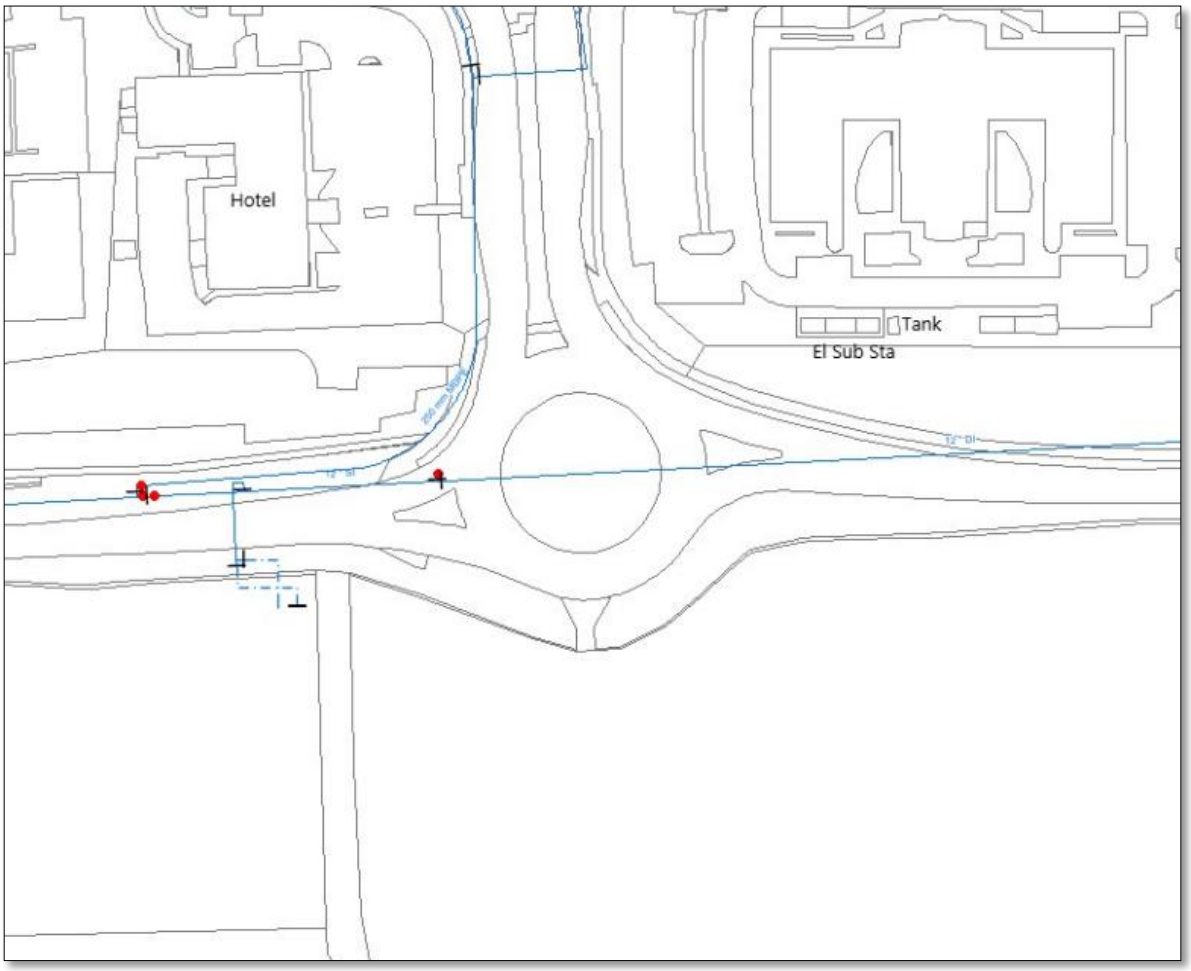
WATER – SEVERN TRENT WATER

POTABLE WATER NETWORKS

The Severn Trent Water asset record indicates there are existing 12'' DI and 250mm PE MDPE water mains which run across the existing roundabout as indicated by figure 5.5.3 below, it's anticipated these mains will need to be diverted to accommodate the proposed alterations to the roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary by trial hole investigations.

Figure 5.5.3 – Existing 12'' DI and 125mm MDPE water mains in the vicinity of the existing roundabout



TELECOMS – OPENREACH

DUCTED NETWORK

The Openreach asset record indicates there are existing underground chambers and ducts which run across the existing roundabout as indicated by figure 5.5.4 below, it's anticipated the ducts will need to be diverted to accommodate the construction of the proposed roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary by trial hole investigations.

It's also recommended that Openreach are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.5.4 – Existing underground Openreach chambers and ducts in the vicinity of the existing roundabout

TELECOMS – VIRGIN MEDIA

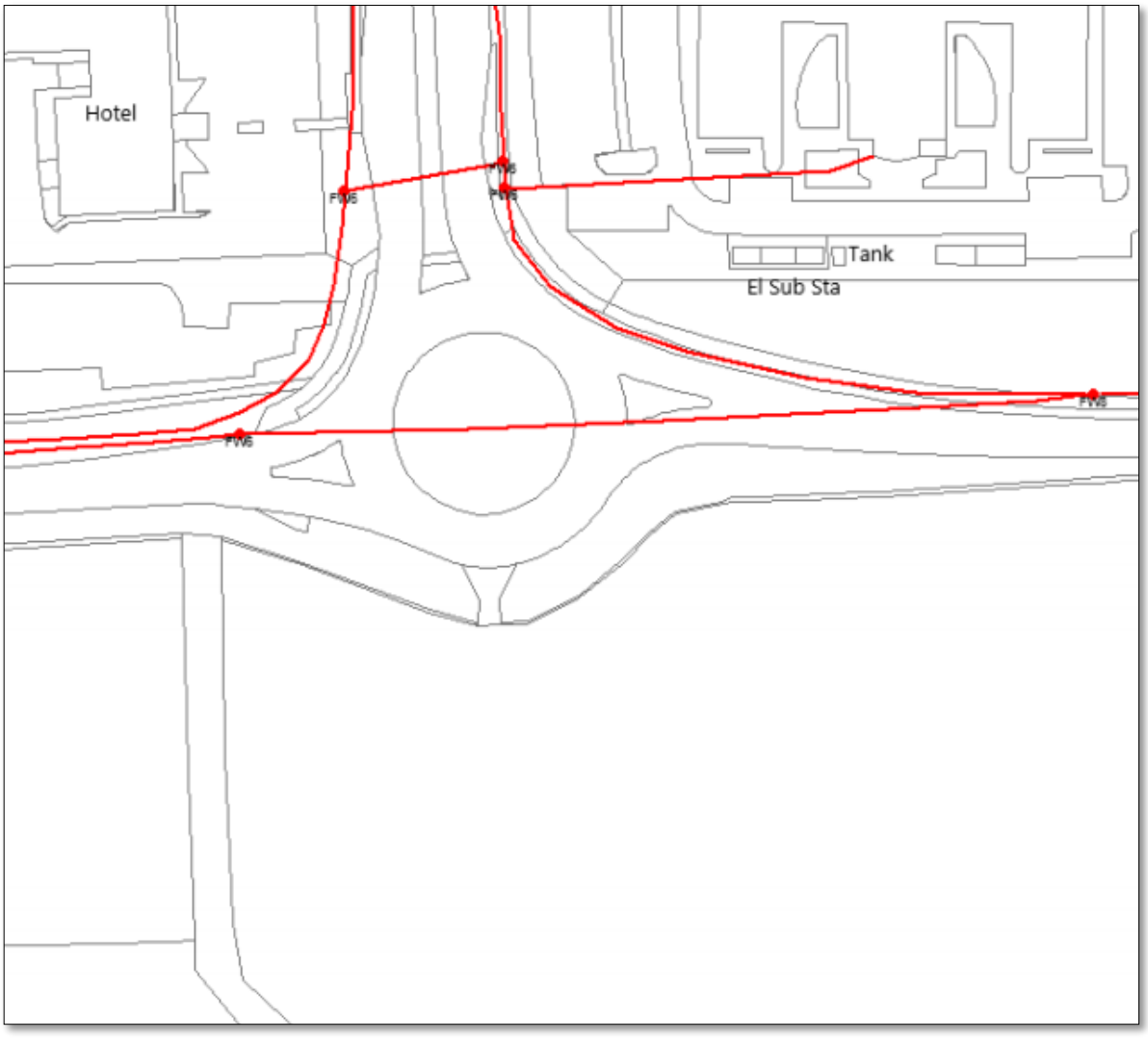
DUCTED NETWORK

The Virgin Media asset record indicates there are existing underground chambers and ducts which run across the existing roundabout as indicated by figure 5.5.5 below, it's anticipated the ducts will need to be diverted to accommodate the construction of the proposed roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary by trial hole investigations.

It's also recommended that Virgin Media are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.5.5 – Existing underground Virgin Media chambers and ducts in the vicinity of the existing roundabout



TELECOMS – VODAFONE

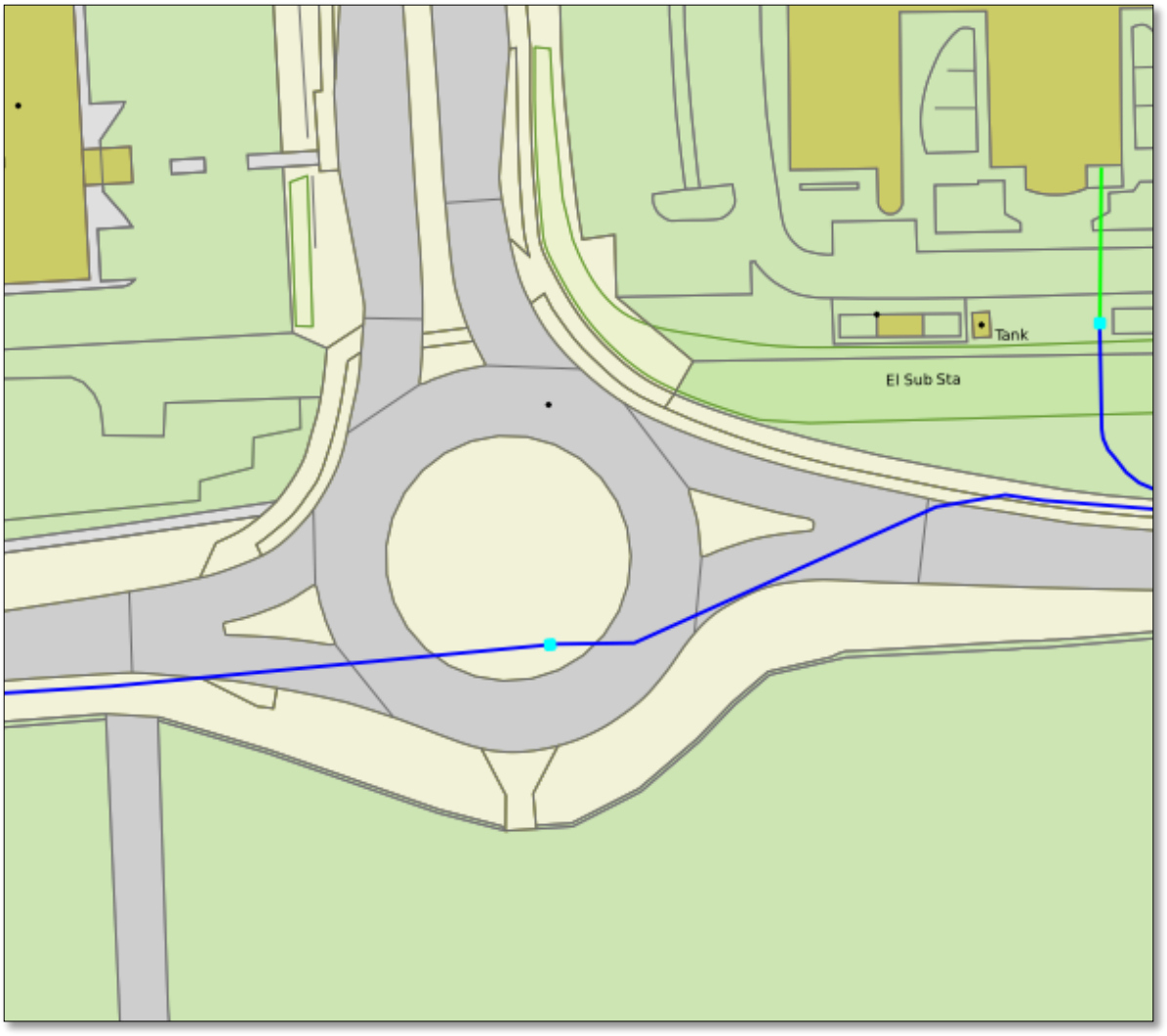
DUCTED NETWORK

The Vodafone asset record indicates there are existing underground chambers and ducts which run across the existing roundabout as indicated by figure 5.5.6 below, it's anticipated the ducts will need to be diverted to accommodate the construction of the proposed roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary by trial hole investigations.

It's also recommended that Vodafone are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.5.6 – Existing underground Vodafone chambers and ducts in the vicinity of the existing roundabout



5.6. S278 HIGHWAYS WORK AREA 02 – FINGER FARM AROUNDABOUT

Figure 5.6.1 – Finger Farm Roundabout

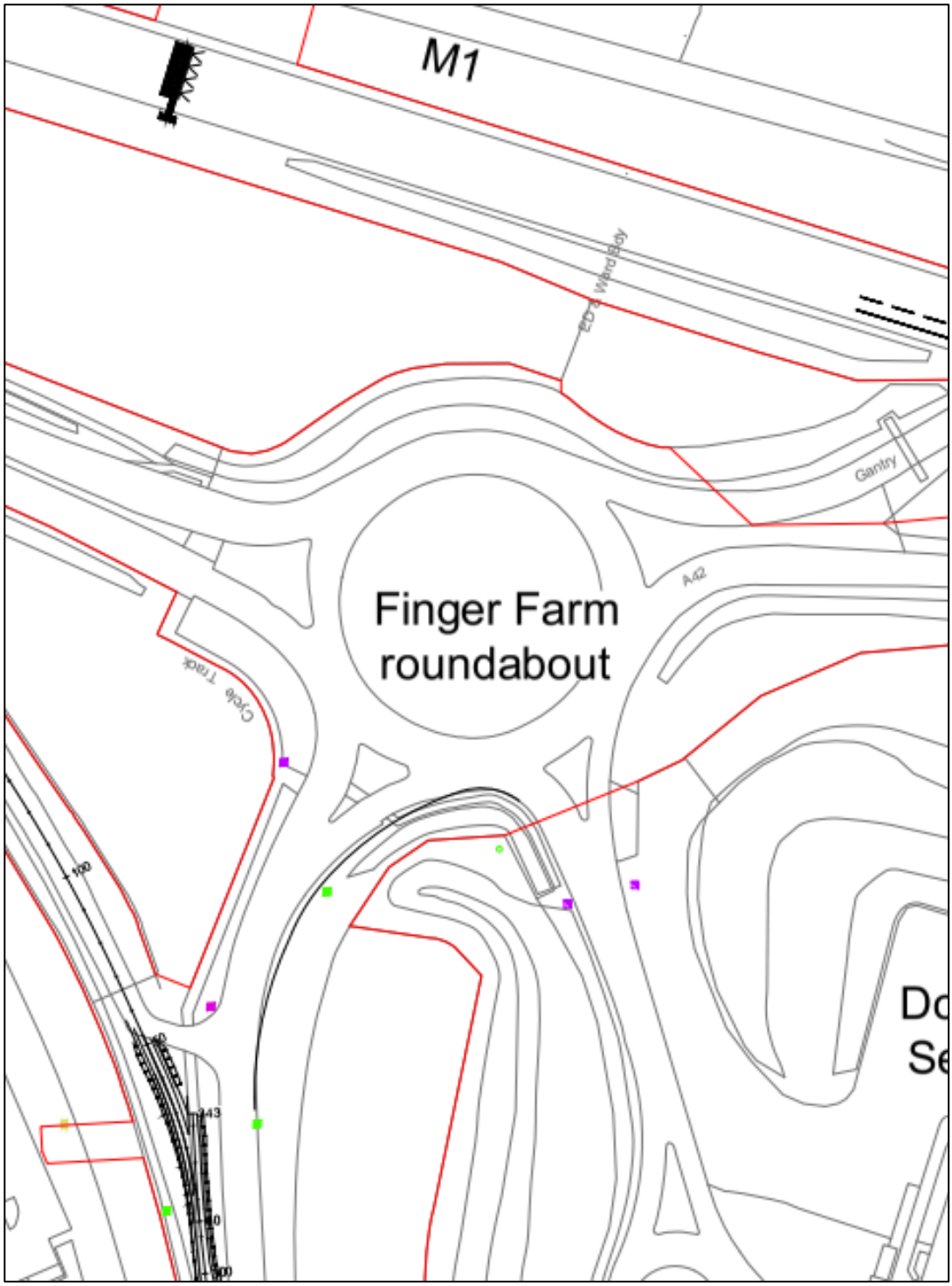
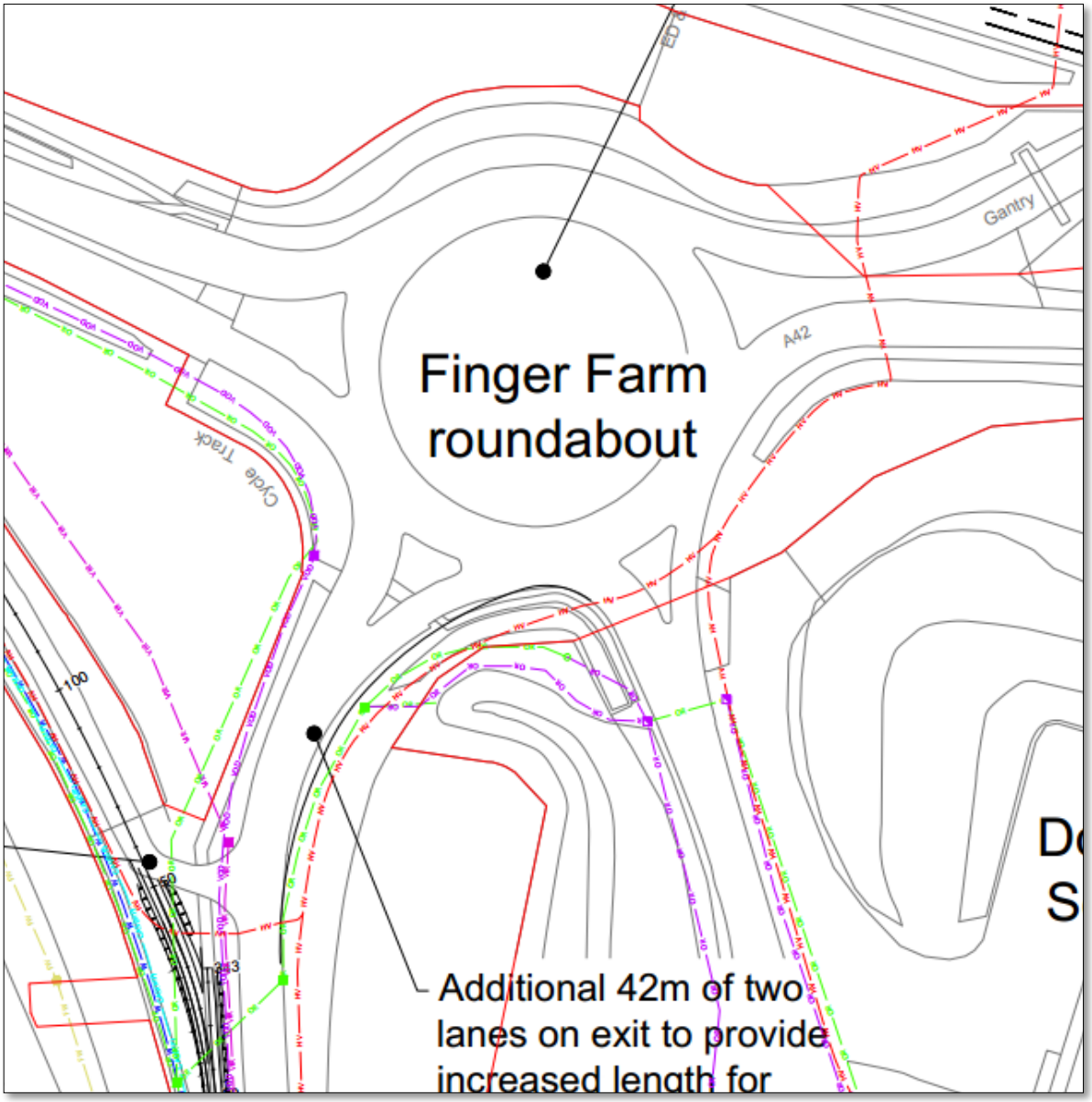


Figure 5.6.2 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – FINGER FARM ROUNDABOUT

A utility asset records search has been undertaken to determine what assets exist near to or within Finger Farm roundabout.

The results of this search and affected assets only can be seen in table 5.6.3 below.

Table 5.6.3 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
Openreach	Telecoms	Yes
Virgin Media	Telecoms	Yes
Vodafone	Telecoms	Yes

5.7. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

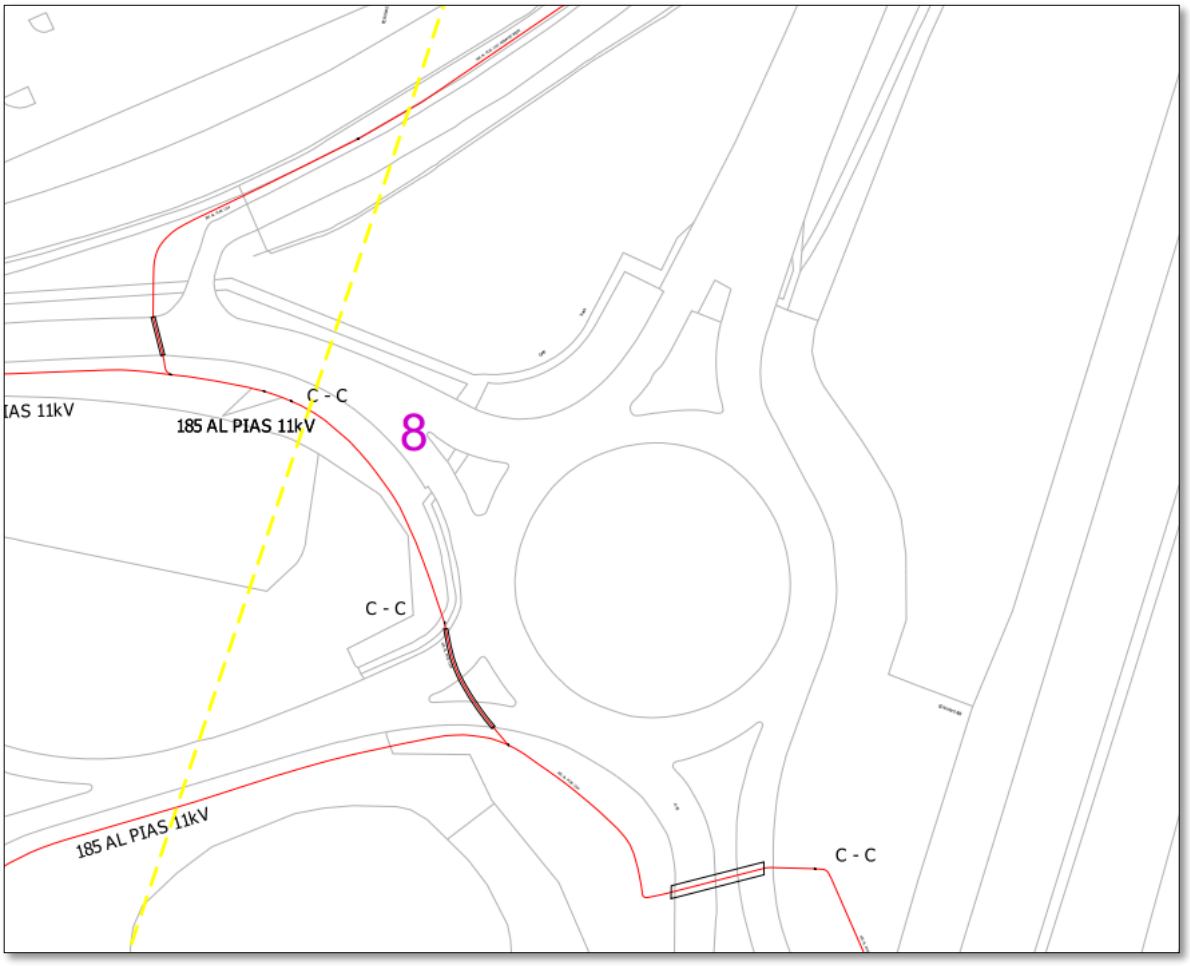
ELECTRICITY – NGED

HV NETWORK – UNDERGROUND 11KV (HV) CABLES

The NGED asset record indicates there are existing underground 11kV (HV) cables which runs along the southern and western sides of the existing roundabout as indicated by figure 5.7.1 below, however it's anticipated these cables will remain unaffected by the proposed alterations to the roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.7.1 – Existing underground 11kV (HV) cables in the vicinity of the existing roundabout



TELECOMS – OPENREACH

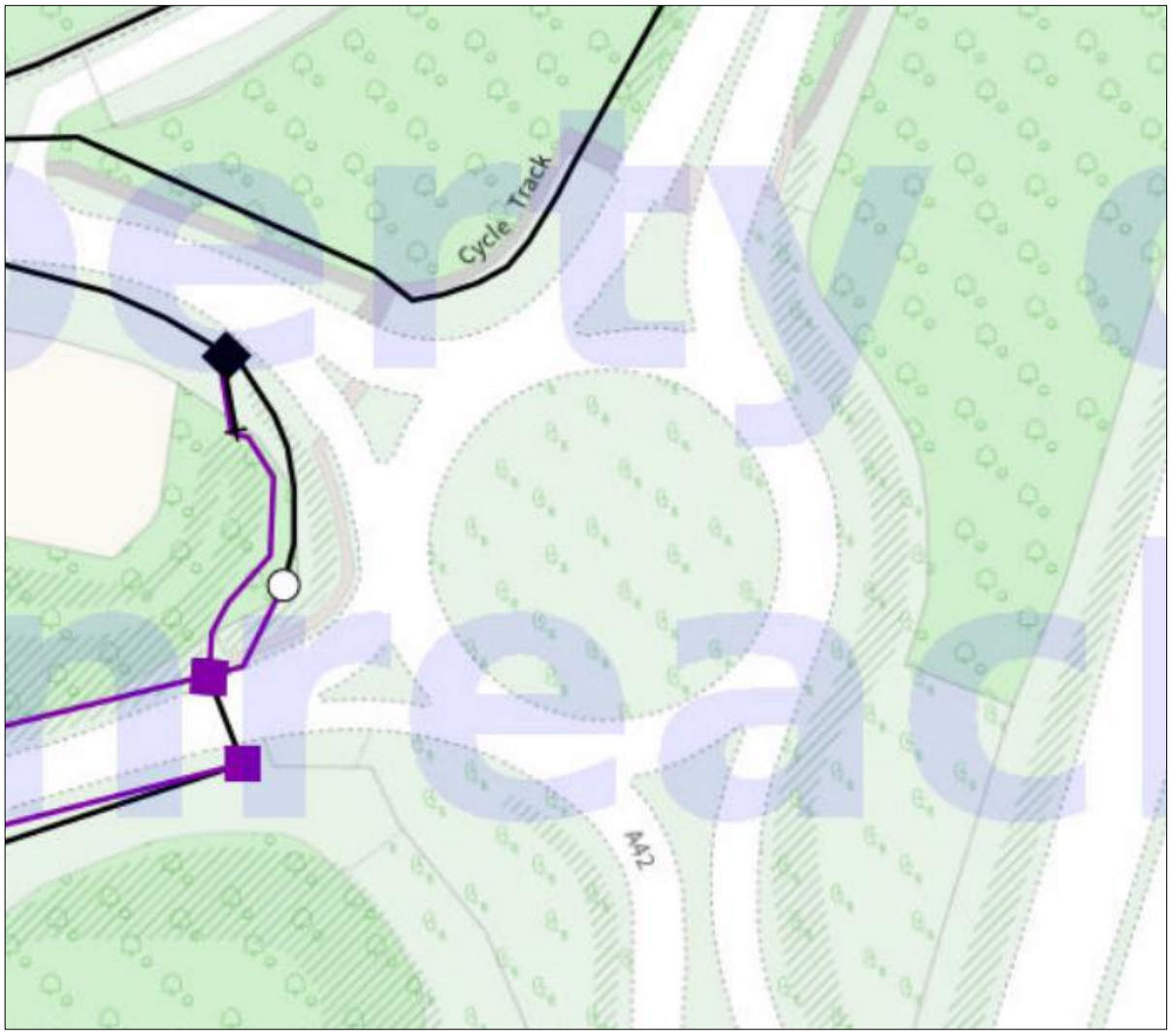
DUCTED NETWORK

The Openreach asset record indicates there are existing underground chambers and ducts which run down the verges to the east and north of the existing roundabout as indicated by figure 5.7.2 below, it's anticipated the ducts will need to be diverted to accommodate the proposed alterations to the existing roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed if necessary by trial hole investigations.

It's also recommended that Openreach are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.7.2 – Existing underground Openreach chambers and ducts in the vicinity of the existing roundabout



TELECOMS – VIRGIN MEDIA

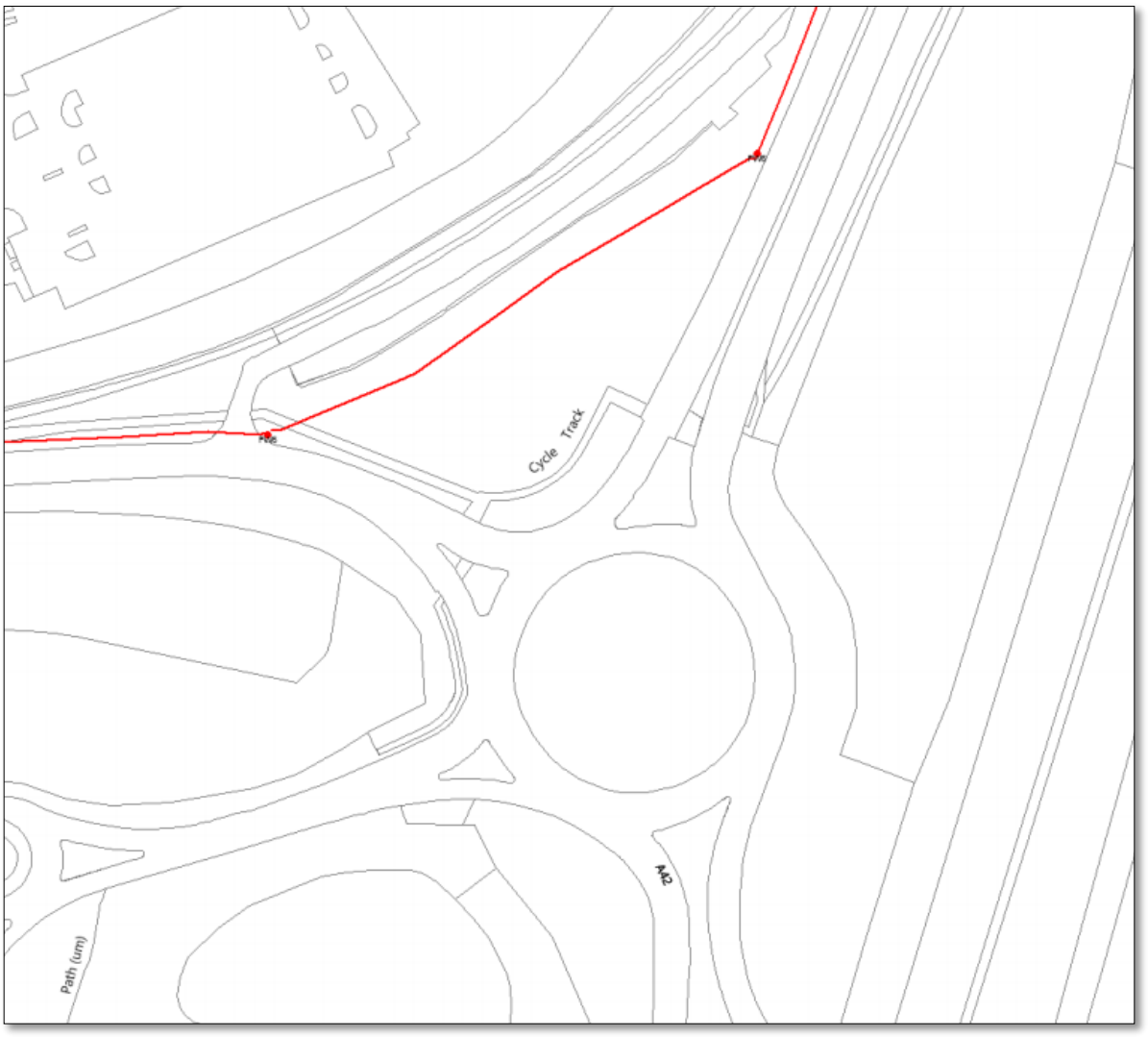
DUCTED NETWORK

The Virgin Media asset record indicates there are existing underground chambers and ducts which run through the area to the north of the existing roundabout as indicated by figure 5.7.3 below, there is a possibility that these ducts will need to be diverted to accommodate the proposed alterations to the existing roundabout.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed if necessary by trial hole investigations.

It's also recommended that Virgin Media are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.7.3 – Existing underground Openreach chambers and ducts in the vicinity of the existing roundabout



TELECOMS – VODAFONE

DUCTED NETWORK

The Vodafone asset record indicates there are existing underground chambers and ducts which run down the verge to the north of the existing roundabout as indicated by figure 5.7.4 below, there is a possibility that they will need to be diverted to accommodate the proposed alterations to the existing roundabout.

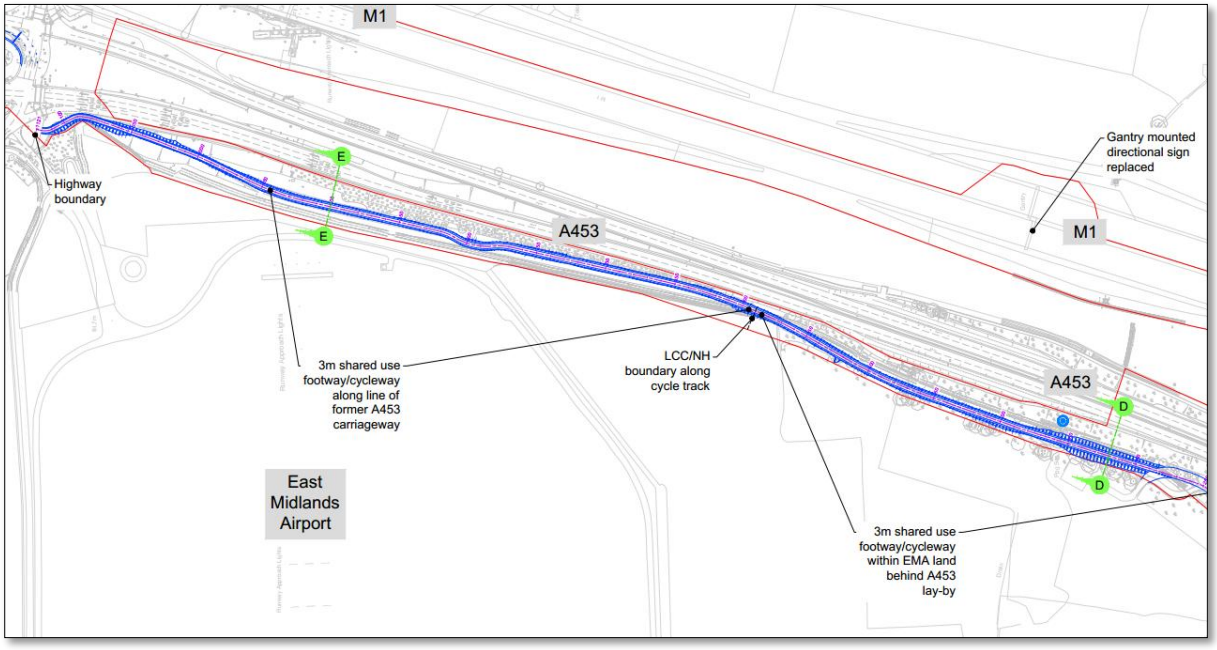
It's recommended that a topographical and GPR survey is undertaken ins this area to establish the true positions and depths of the chambers and ducts, followed if necessary by trial hole investigations.

It's also recommended that Vodafone are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.7.4 – Existing underground Vodafone chambers and ducts in the vicinity of the existing roundabout

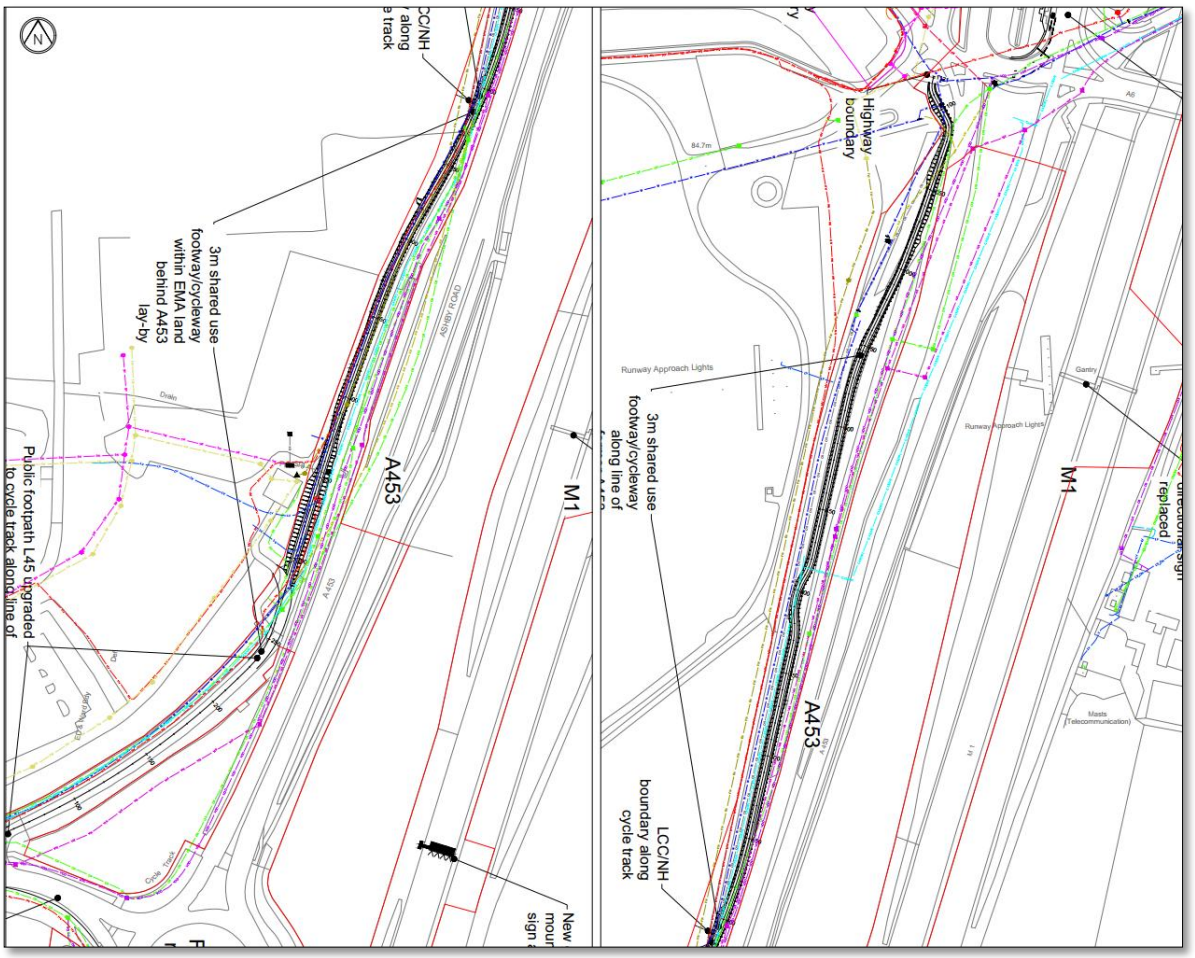
5.8. S278 HIGHWAYS WORK AREA 03 – A453 FOOTWAY/CYCLEWAY LINK

Figure 5.8.1 – A453 Footway/Cycleway Link



UTILITY NETWORK COMPOSITE OVERLAY – A453 FOOTWAY/CYCLEWAY LINK

Figure 5.8.2 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – A453 FOOTWAY/CYCYLEWAY LINK

A utility asset records search has been undertaken to determine what assets exist near to the footway/cycleway link.

The results of this search and affected assets only can be seen in table 5.8.3 below.

Table 5.8.3 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
Severn Trent Water	Water	Yes
Cadent Gas Networks	Gas	Yes
Openreach	Telecoms	Yes
Virgin Media	Telecoms	Yes
Vodafone	Telecoms	Yes

5.9. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

ELECTRICITY – NGED

HV NETWORK – UNDERGROUND 11KV (HV) CABLE AND POLE MOUMTED TRANSFORMER

The NGED asset record indicates there is an existing underground 11kV (HV) cable which runs behind the existing public footpath to the west of the A453, the cable continues along the verge and footway before terminating into an existing pole mounted transformer (PMT) as shown in screenshots 5.9.1 and 5.9.2 below

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground cable and the PMT to determine if they will be affected by the proposed footway/cycleway link.

Figure 5.9.1 – Existing underground 11kV (HV) cable and PMT

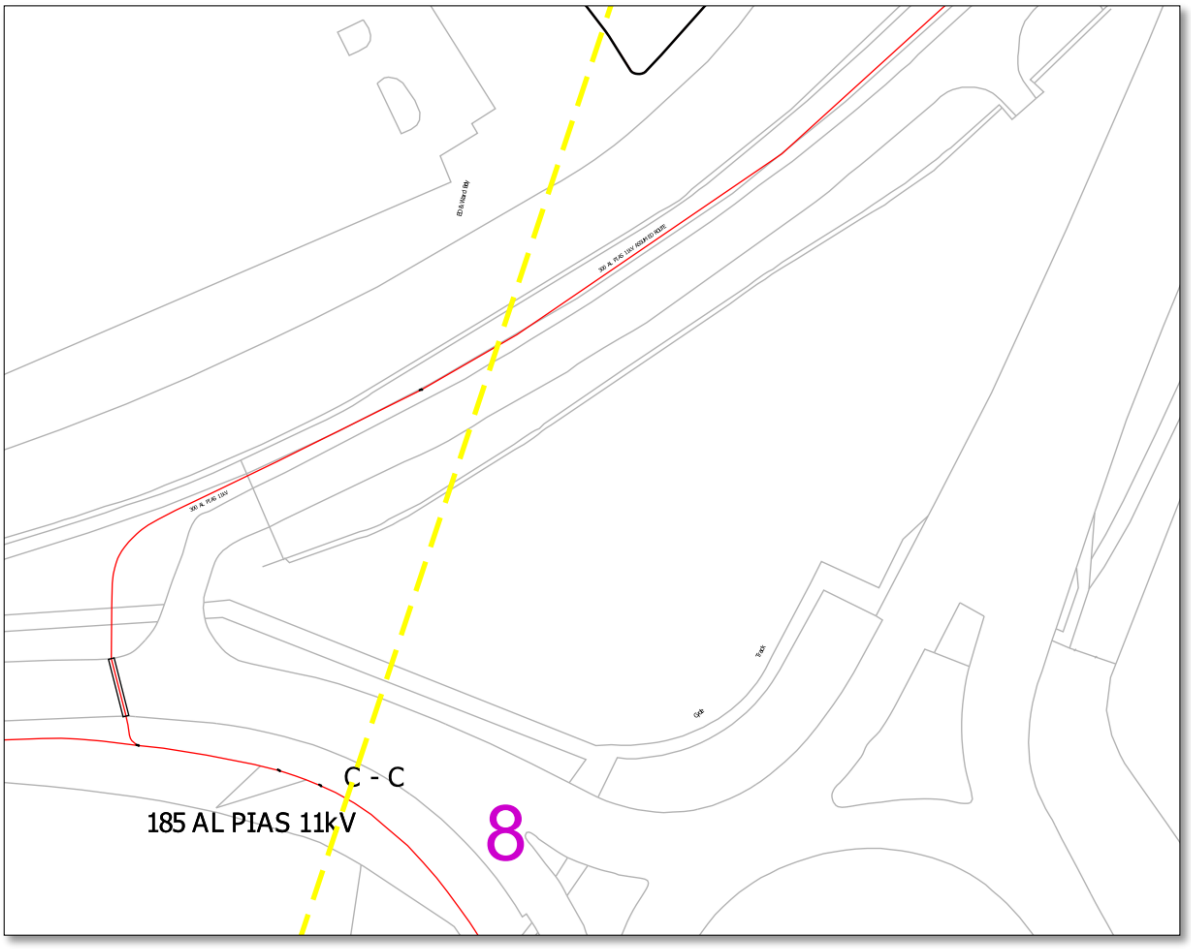
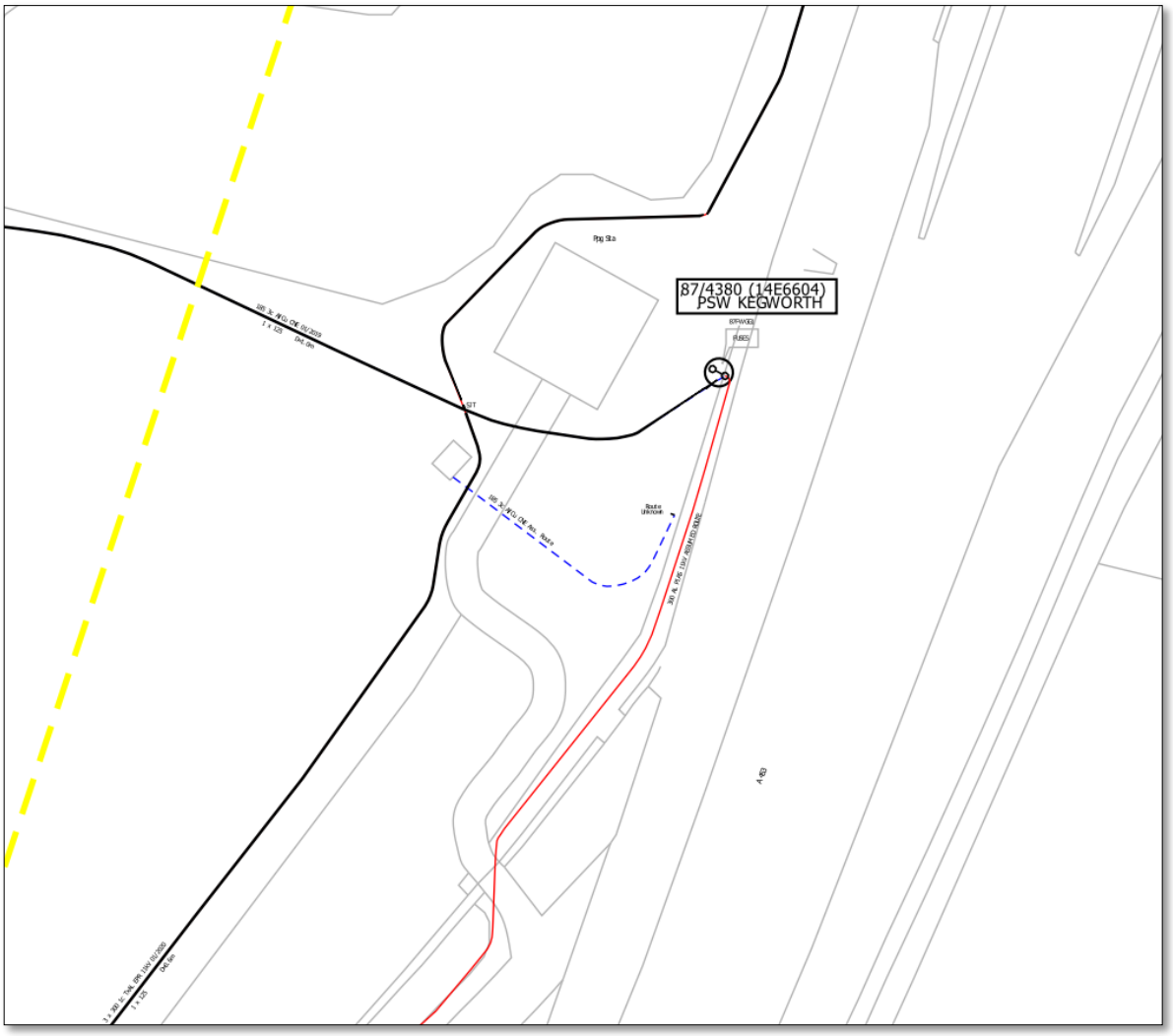


Figure 5.9.2 – Existing underground 11kV (HV) cable and PMT



HV NETWORK – UNDERGROUND 11KV (HV) CABLE

The NGED asset record also indicates there is a separate existing underground 11kV (HV) cable which runs behind the existing public footpath to the west of the A453, the cable enters the verge from East Midlands Airport and continues northbound towards the EMG1 roundabout as shown in figures 5.9.2 and 5.9.3 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground cable to determine if it will be affected by the proposed footway/cycleway link.

Figure 5.9.3 – Existing underground 11kV (HV) cable

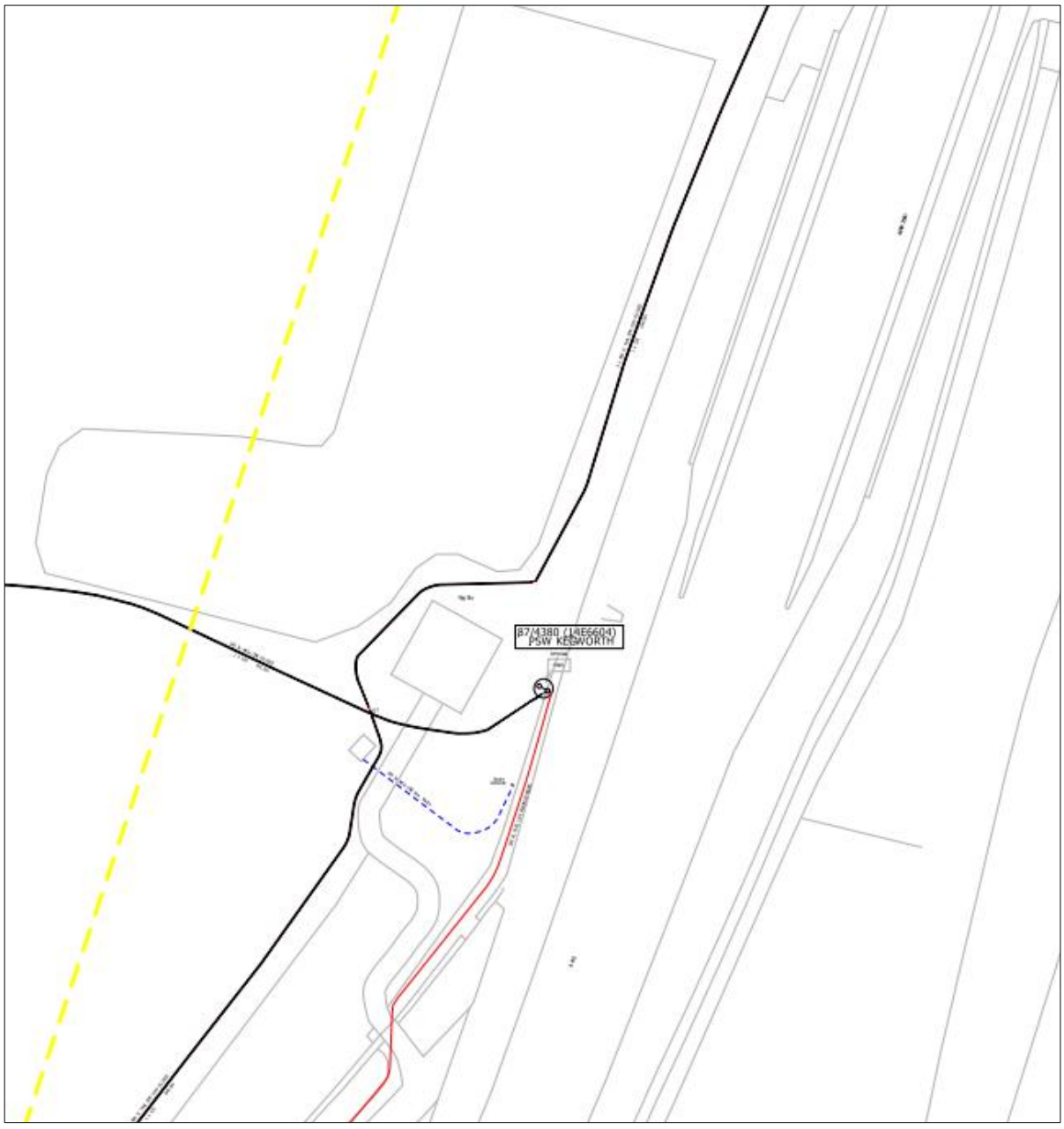
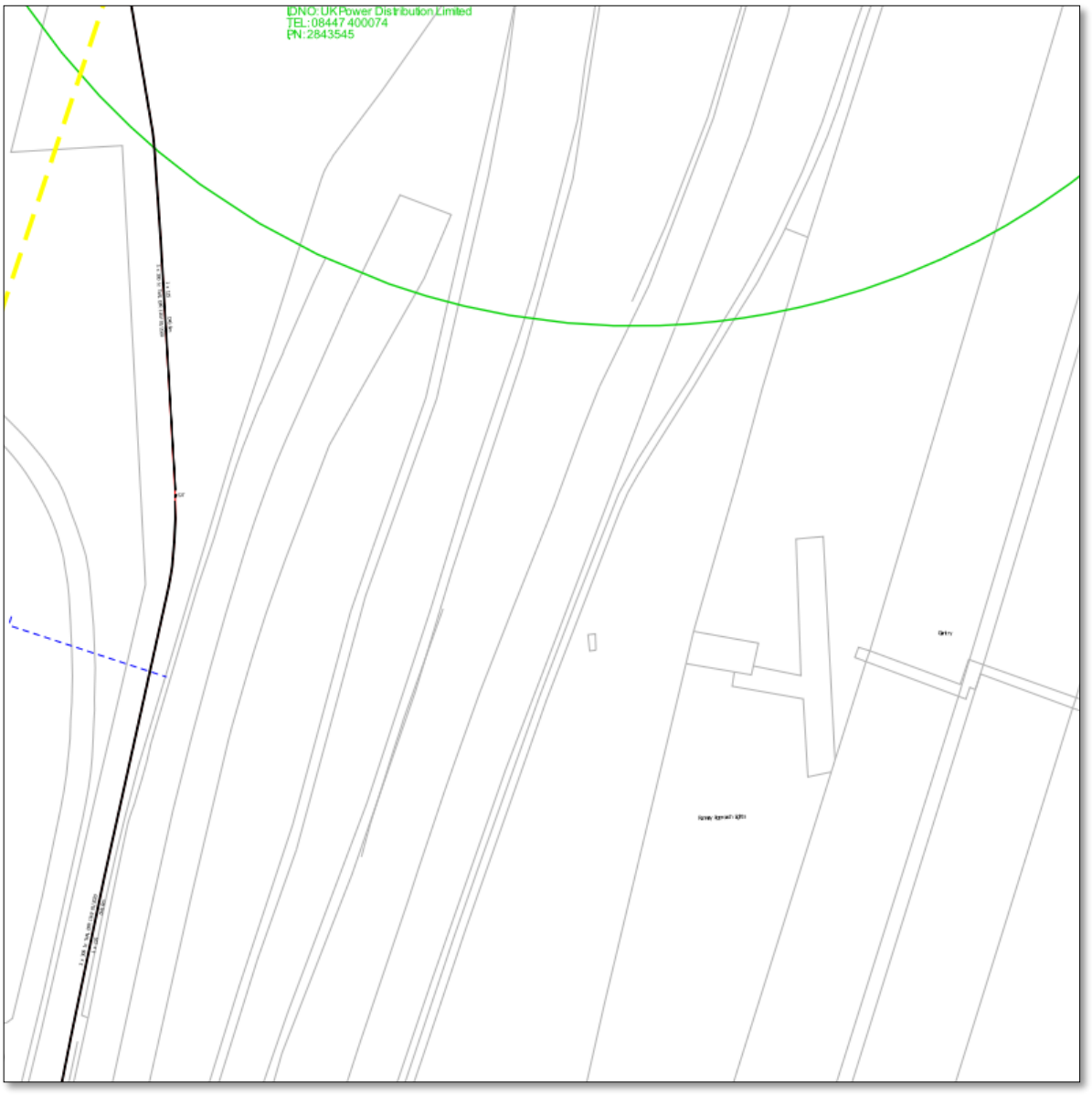


Figure 5.9.4 – Existing underground 11kV (HV) cable



WATER – SEVERN TRENT WATER

POTABLE WATER NETWORKS

The Severn Trent Water asset record indicates there is an existing underground 300mm/12inch diameter water main which runs parallel with the A453 along the boundary with East Midlands Airport as shown in figure 5.9.5 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground water main to determine if it will be affected by the proposed footway/cycleway link, including any valves.

Figure 5.9.5 – Existing underground 300mm/12inch diameter water main

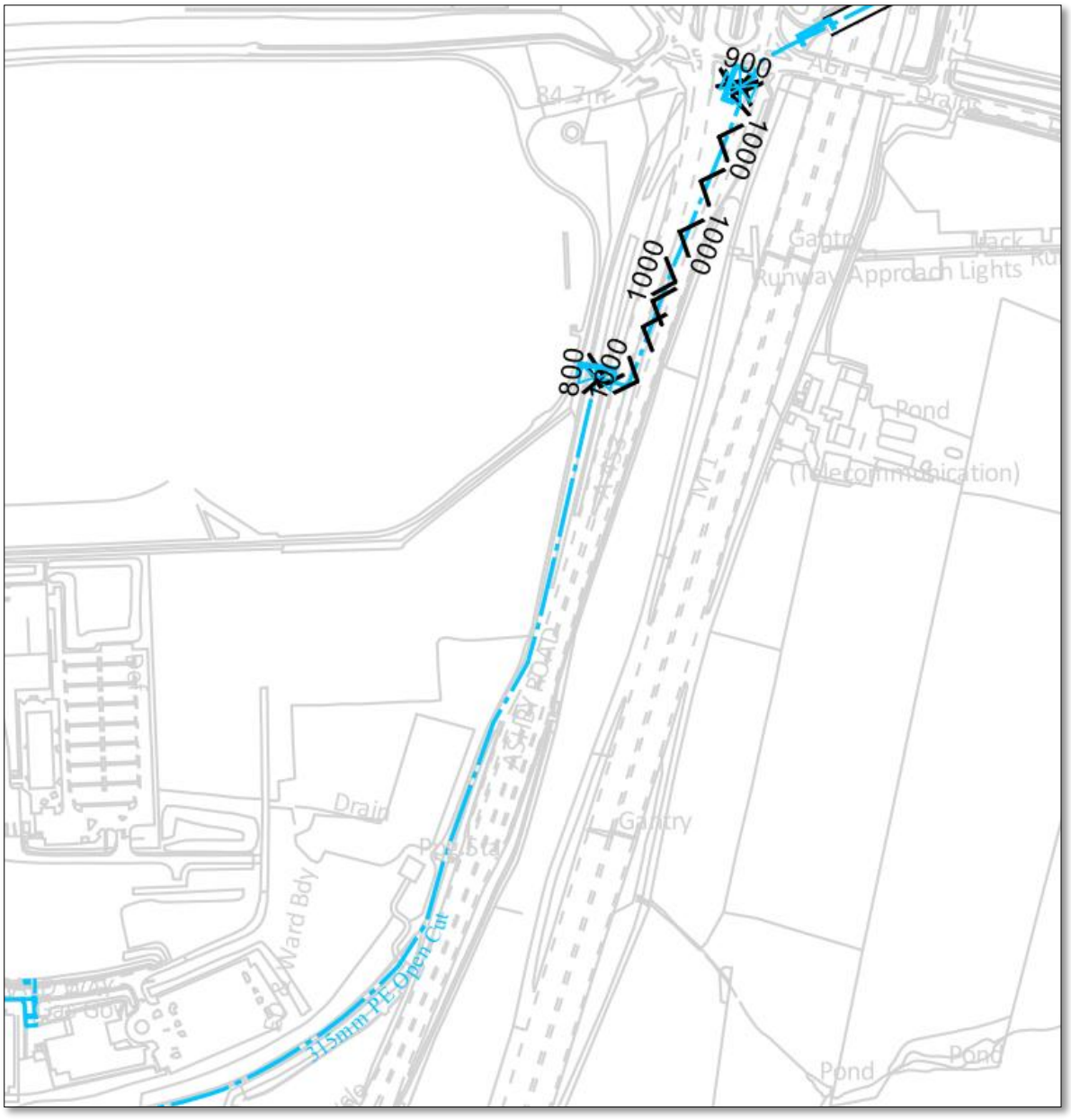
GAS – CADENT GAS NETWORKS

MEDIUM PRESSURE NETWORK – 125MM PE MEDIUM PRESSURE MAIN

The Cadent Gas asset record indicates there is an existing underground 315mm Medium Pressure (MP) gas main which runs parallel with the A453 along the boundary with East Midlands Airport as shown in figure 5.9.6 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground water main to determine if it will be affected by the proposed footway/cycleway link, including any valves.

Figure 5.9.5 – Existing underground 315mm Medium Pressure (MP) gas main



TELECOMS – OPENREACH

DUCTED NETWORK

The Openreach asset record indicates there are existing underground chambers and ducts which run parallel with the A453 along the boundary with East Midlands Airport as indicated by figure 5.9.6, 5.9.7 and 5.9.8 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground chamber and ducts to determine if they will be affected by the proposed footway/cycleway link.

It's also recommended that Openreach are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.9.6 – Existing underground chambers and ducts to the west of the A453

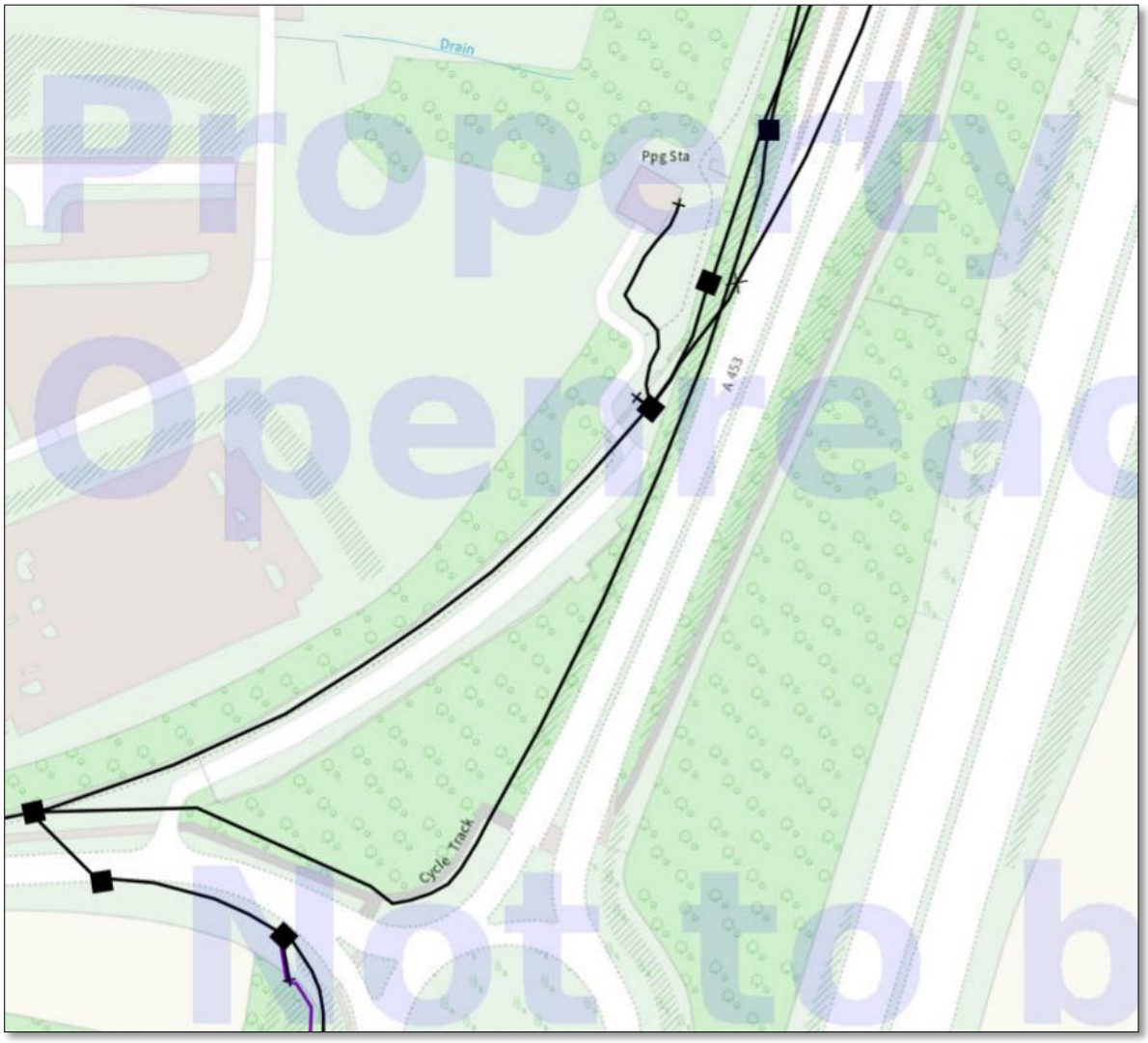


Figure 5.9.7 – Existing underground chambers and ducts to the west of the A453

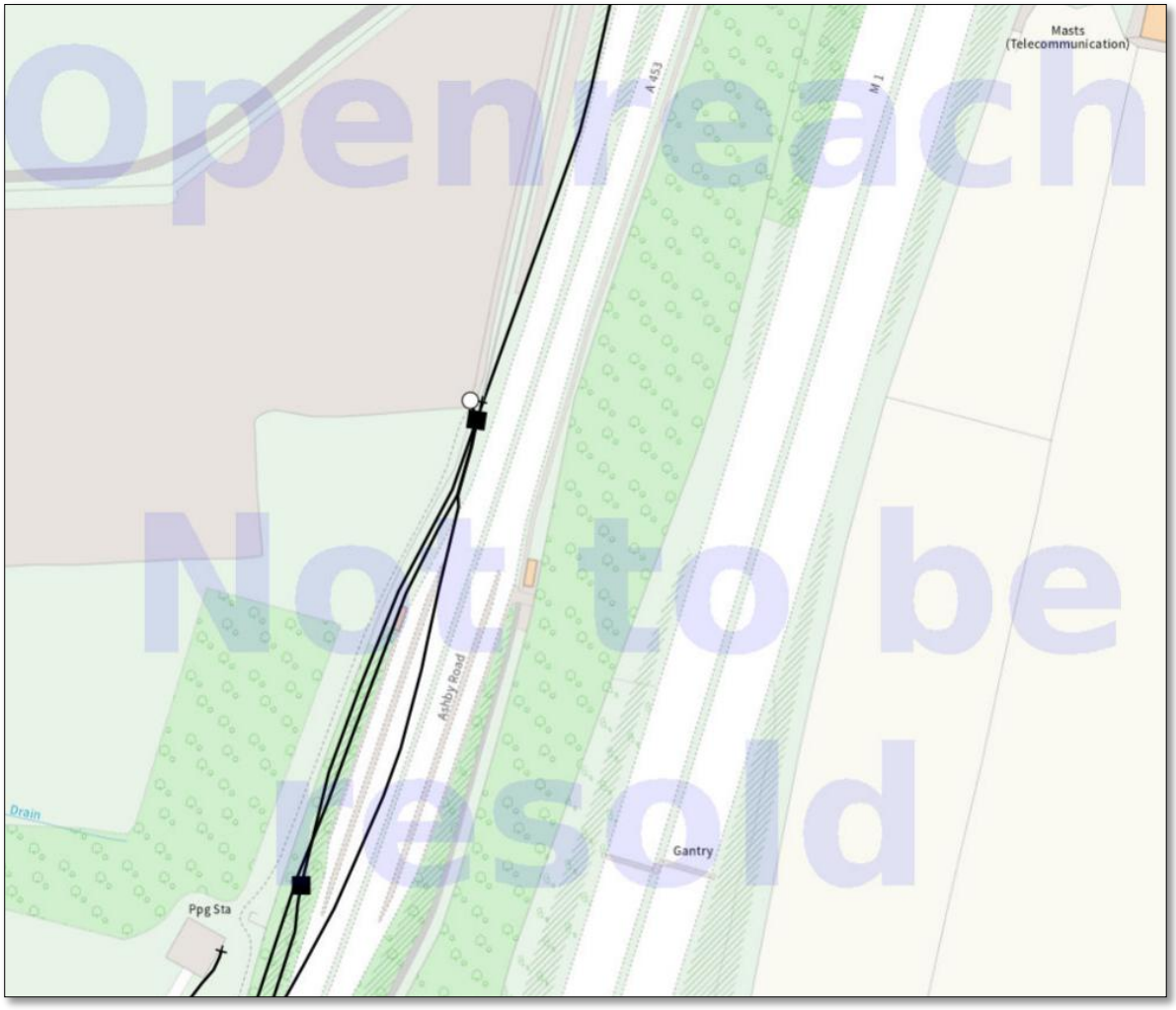
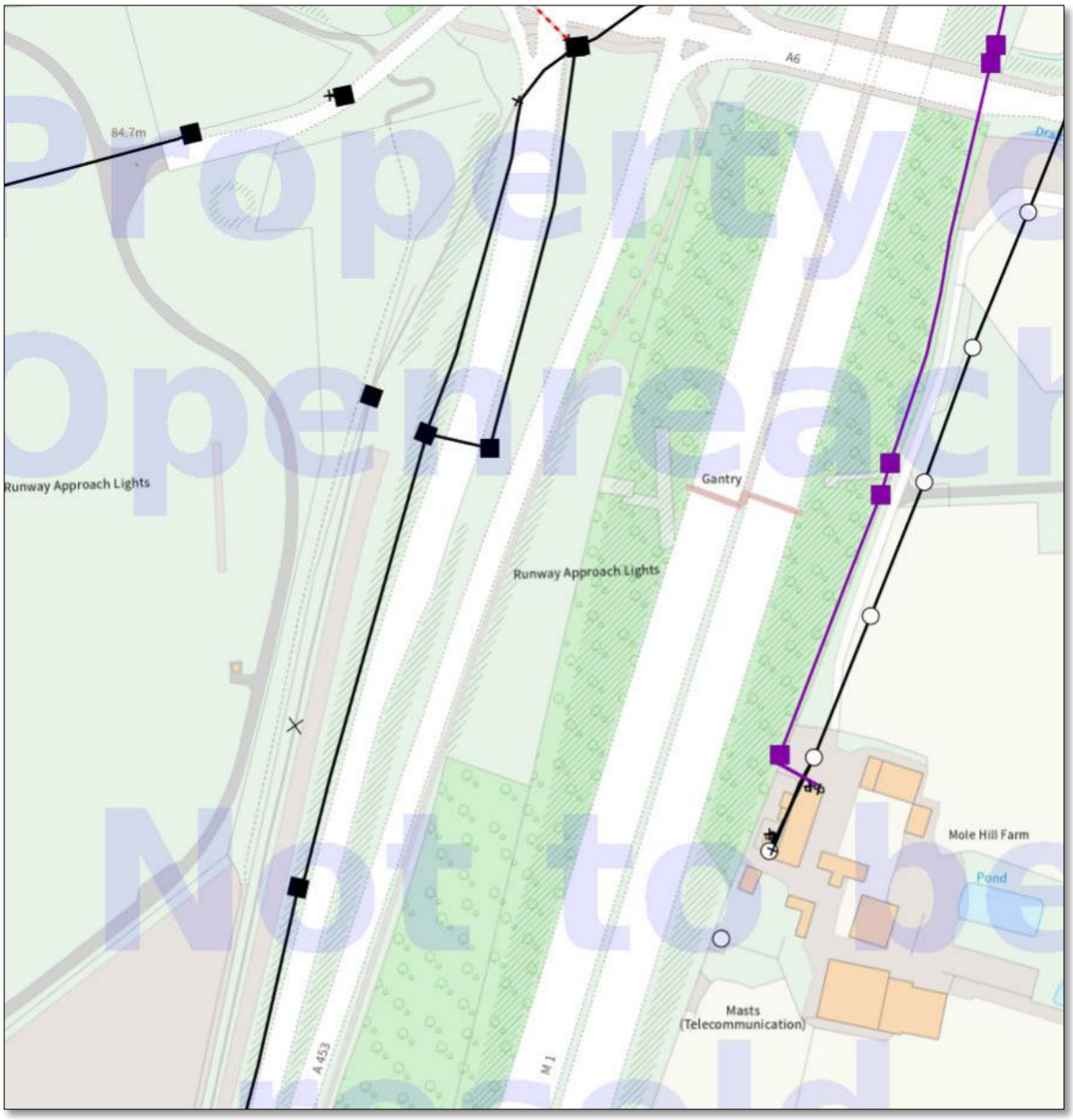


Figure 5.9.8 – Existing underground chambers and ducts to the west of the A453



TELECOMS – VIRGIN MEDIA

DUCTED NETWORK

The Virgin Media asset record indicates there are existing underground chambers and ducts which run parallel with the A453 along the boundary with East Midlands Airport as indicated by figure 5.9.9 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground chamber and ducts to determine if they will be affected by the proposed footway/cycleway link.

It's also recommended that Virgin Media are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.9.9 – Existing underground chambers and ducts to the west of the A453

TELECOMS – VODAFONE

DUCTED NETWORK

The Vodafone asset record indicates there are existing underground chambers and ducts which run parallel with the A453 along the boundary with East Midlands Airport as indicated by figure 5.9.10, 5.9.11, 5.9.12 and 5.9.13 below.

It's recommended that a topographical and GPR survey is undertaken on site to establish the true position of the underground chamber and ducts to determine if they will be affected by the proposed footway/cycleway link.

It's also recommended that Vodafone are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.9.10 – Existing underground chambers and ducts to the west of the A45

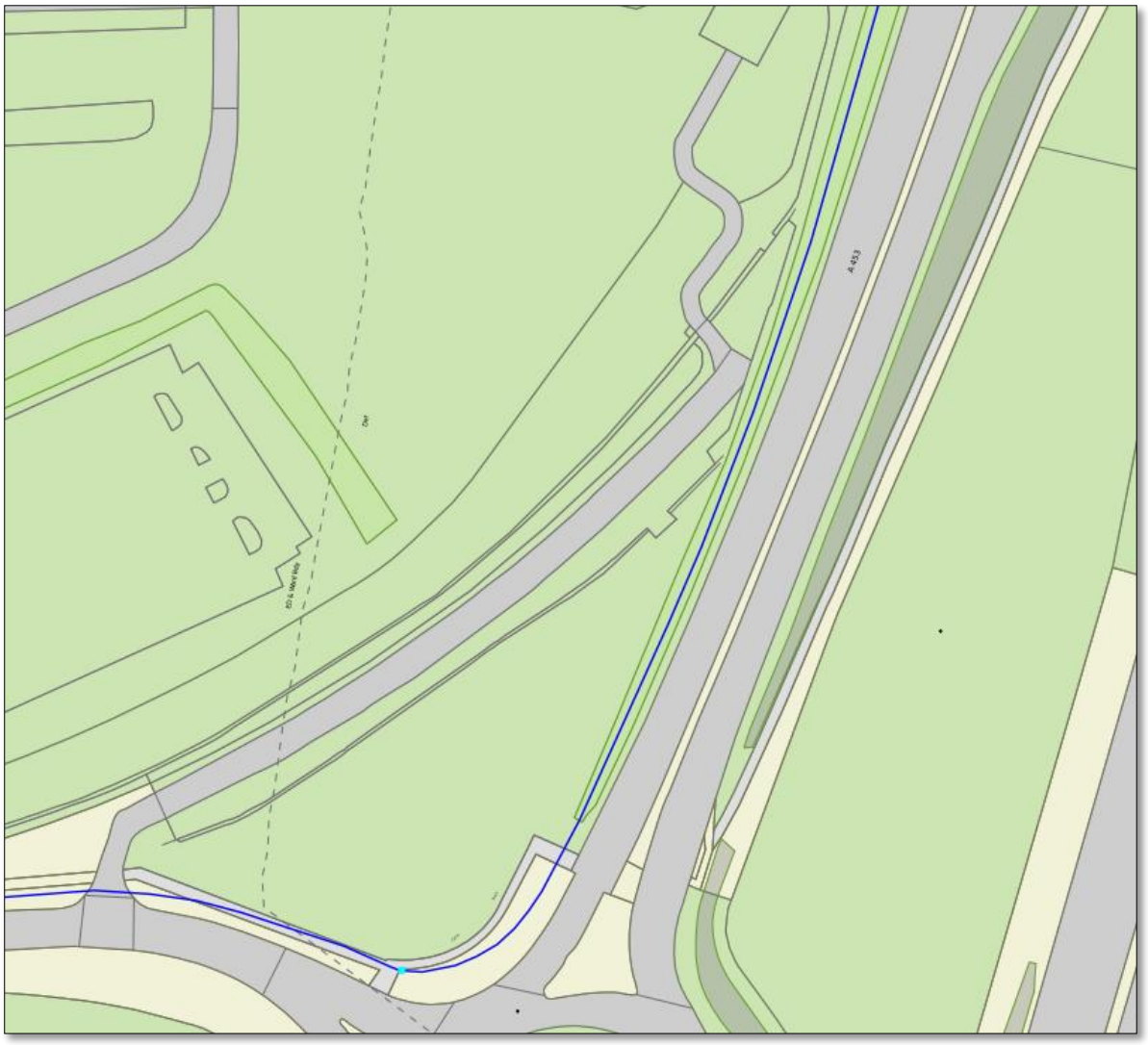


Figure 5.9.11 – Existing underground chambers and ducts to the west of the A45

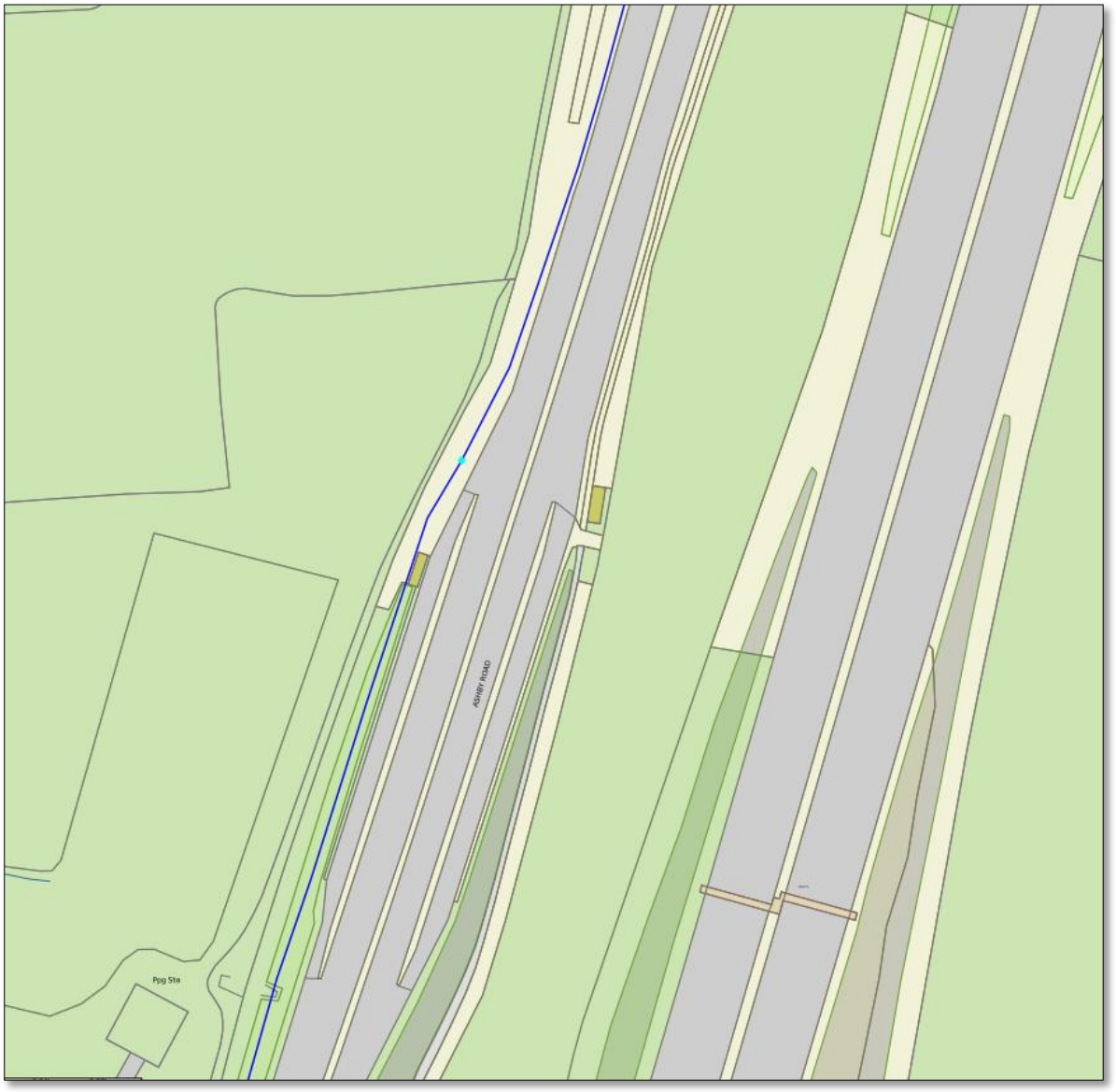


Figure 5.9.12 – Existing underground chambers and ducts to the west of the A45

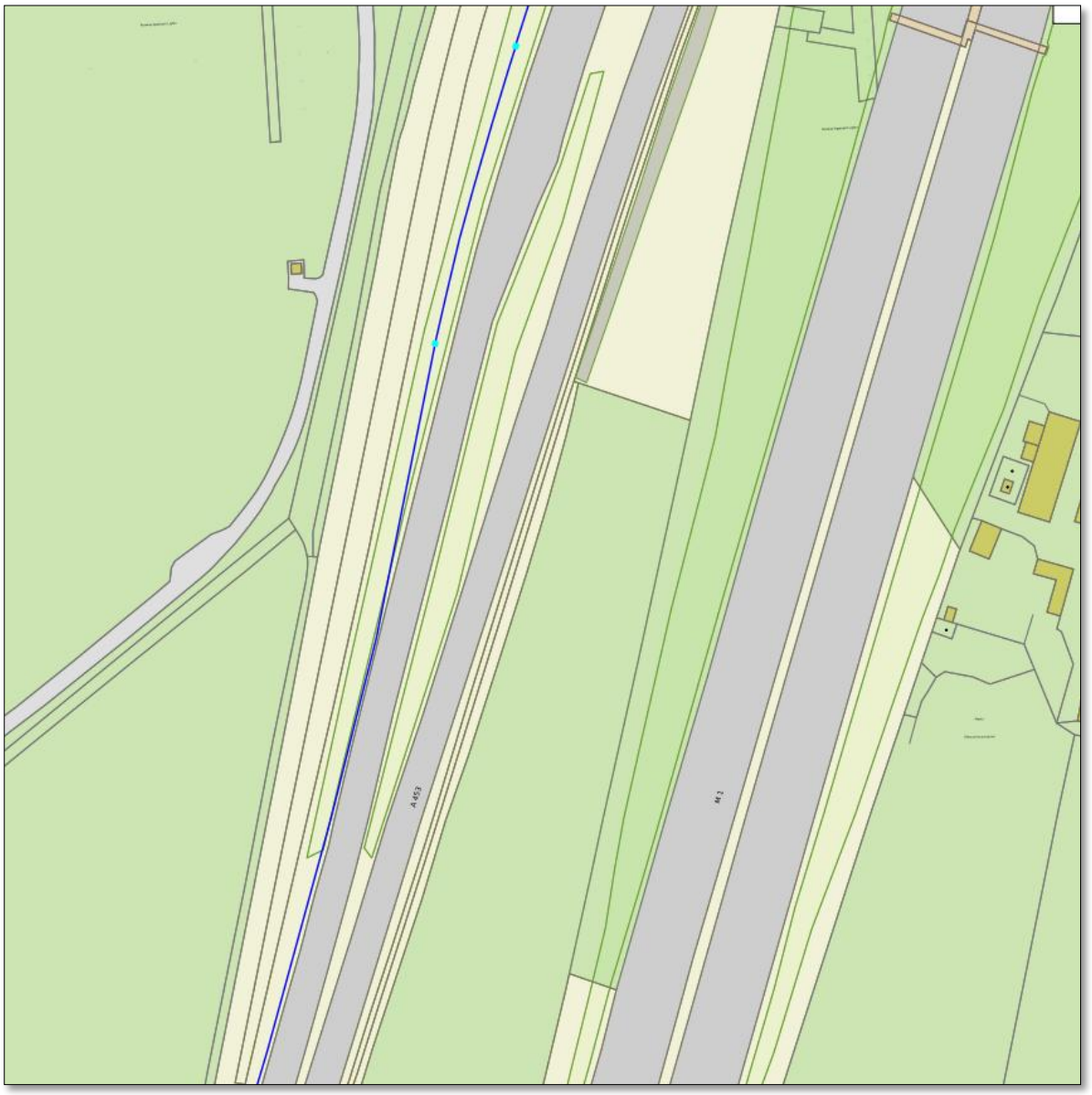
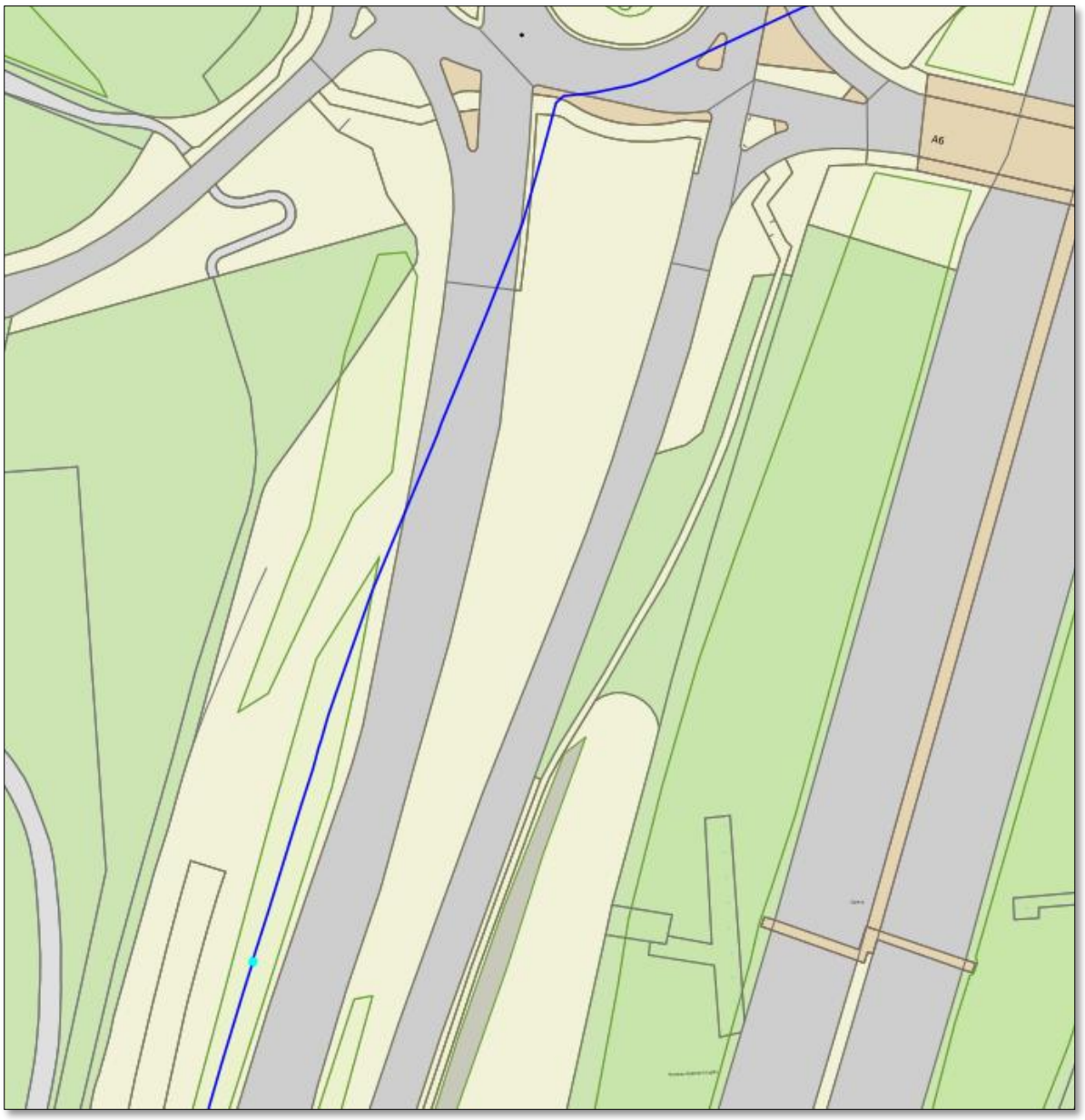
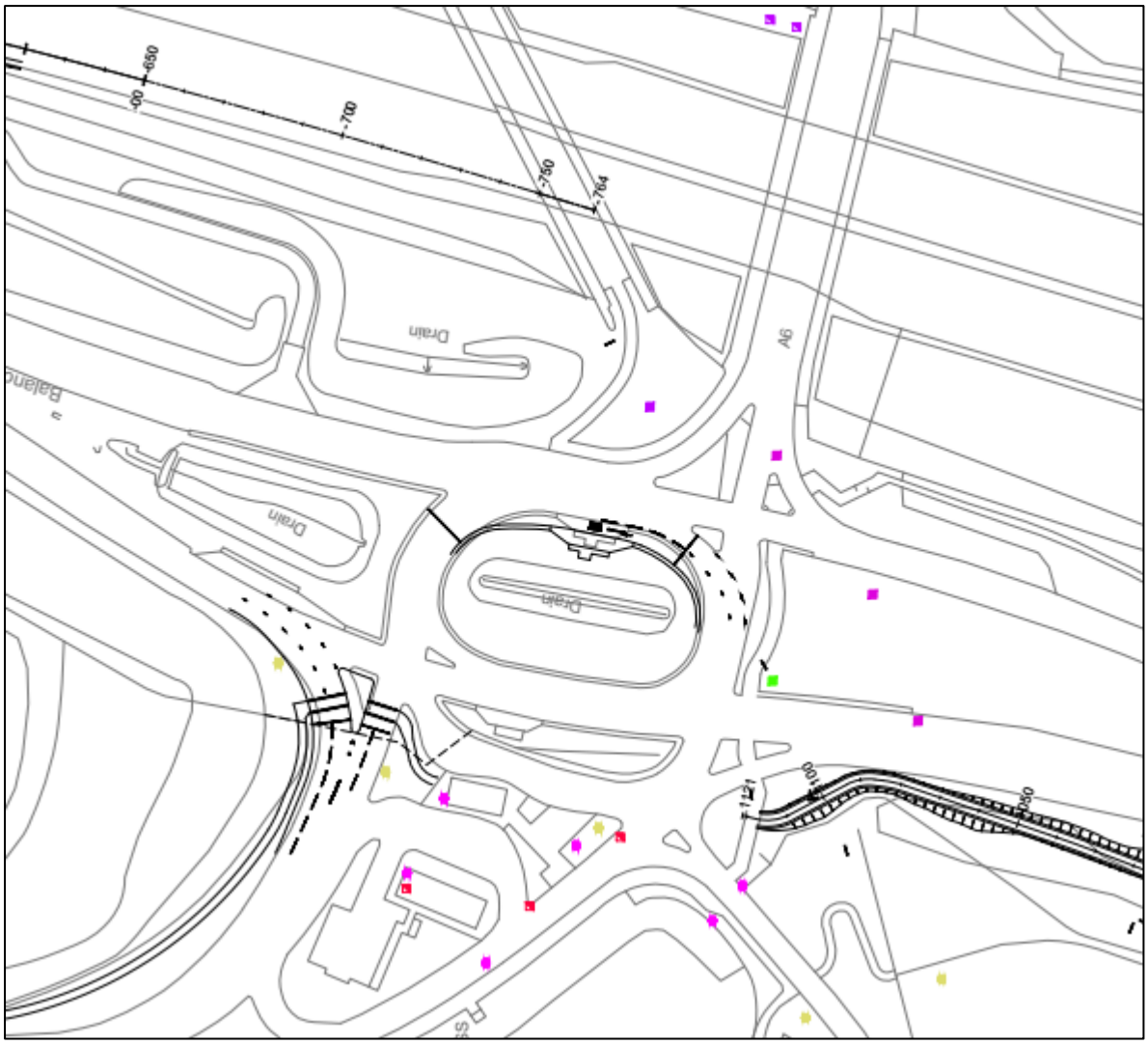


Figure 5.9.13 – Existing underground chambers and ducts to the west of the A45



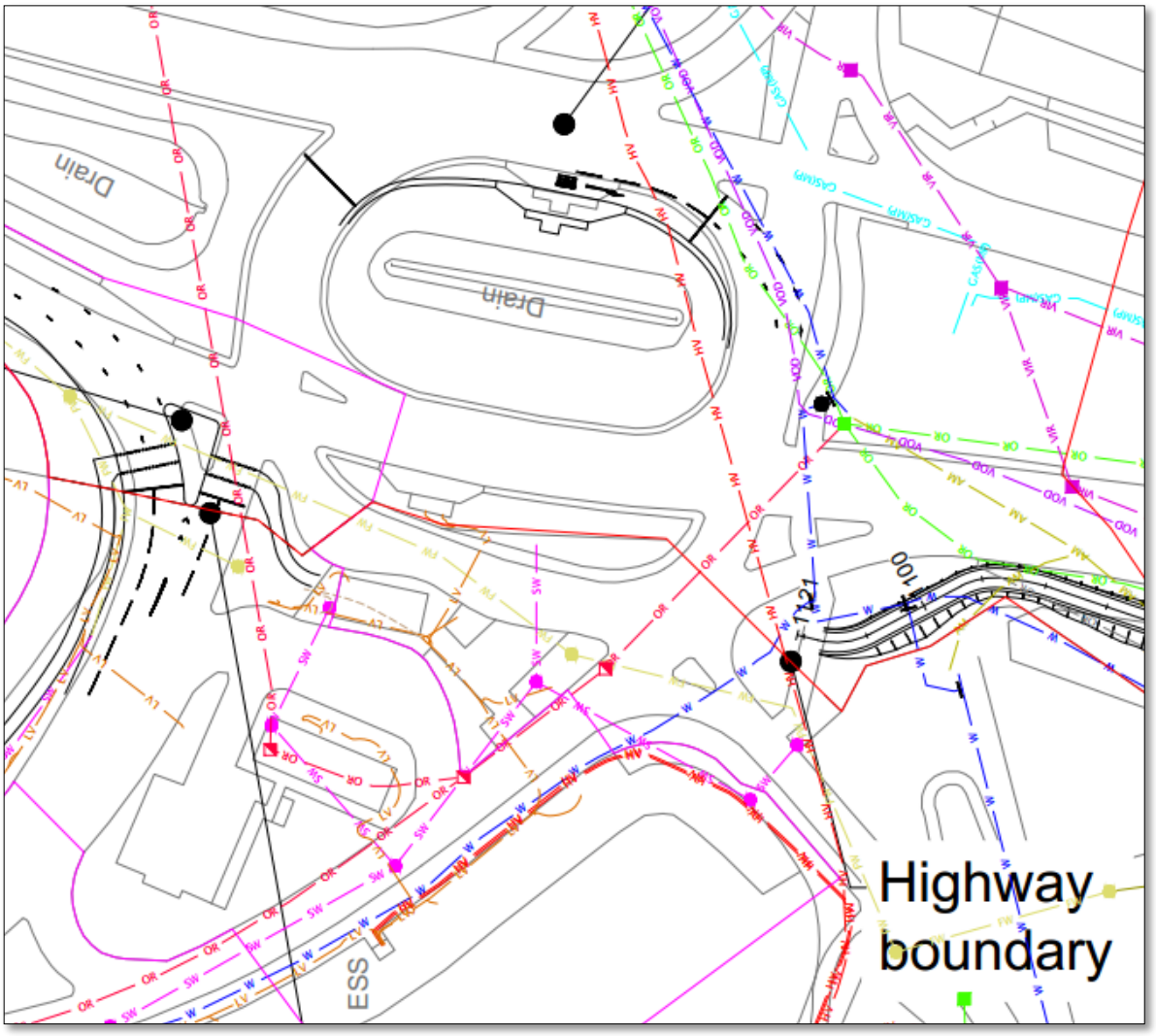
5.10. S278 HIGHWAYS WORK AREA 04 – A6 KEGWORTH BYPASS/A453 JUNCTION

Figure 5.10.1 – A6 Kegworth Bypass/A453 Junction



UTILITY NETWORK COMPOSITE OVERLAY – A6 KEGWORTH BYASS/A453 JUNCTION

Figure 5.10.2 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – A6 KEGWORTH BYASS/A453 JUNCTION

A utility asset records search has been undertaken to determine what assets exist near to or within the existing roundabout.

The results of this search and affected assets only can be seen in table 5.8.3 below.

Table 5.10.3 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
UKPD	Electricity	Yes
Cadent Gas Networks	Gas	Yes
ESP Gas	Gas	Yes
Severn Trent Water	Water	Yes
Openreach	Telecoms	Yes
Virgin Media	Telecoms	Yes
Vodafone	Telecoms	Yes

5.11. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

ELECTRICITY – NGED

HV NETWORK – UNDERGROUND 11KV (HV) CABLES

The NGED asset record indicates there are existing underground 11kV (HV) cables which run across the existing roundabout as indicated by figures 5.11.1 and 5.11.2 below, there is a possibility that these cables will need to be diverted to accommodate the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.11.1 – Existing underground 11kV (HV) cables in the vicinity of the existing roundabout

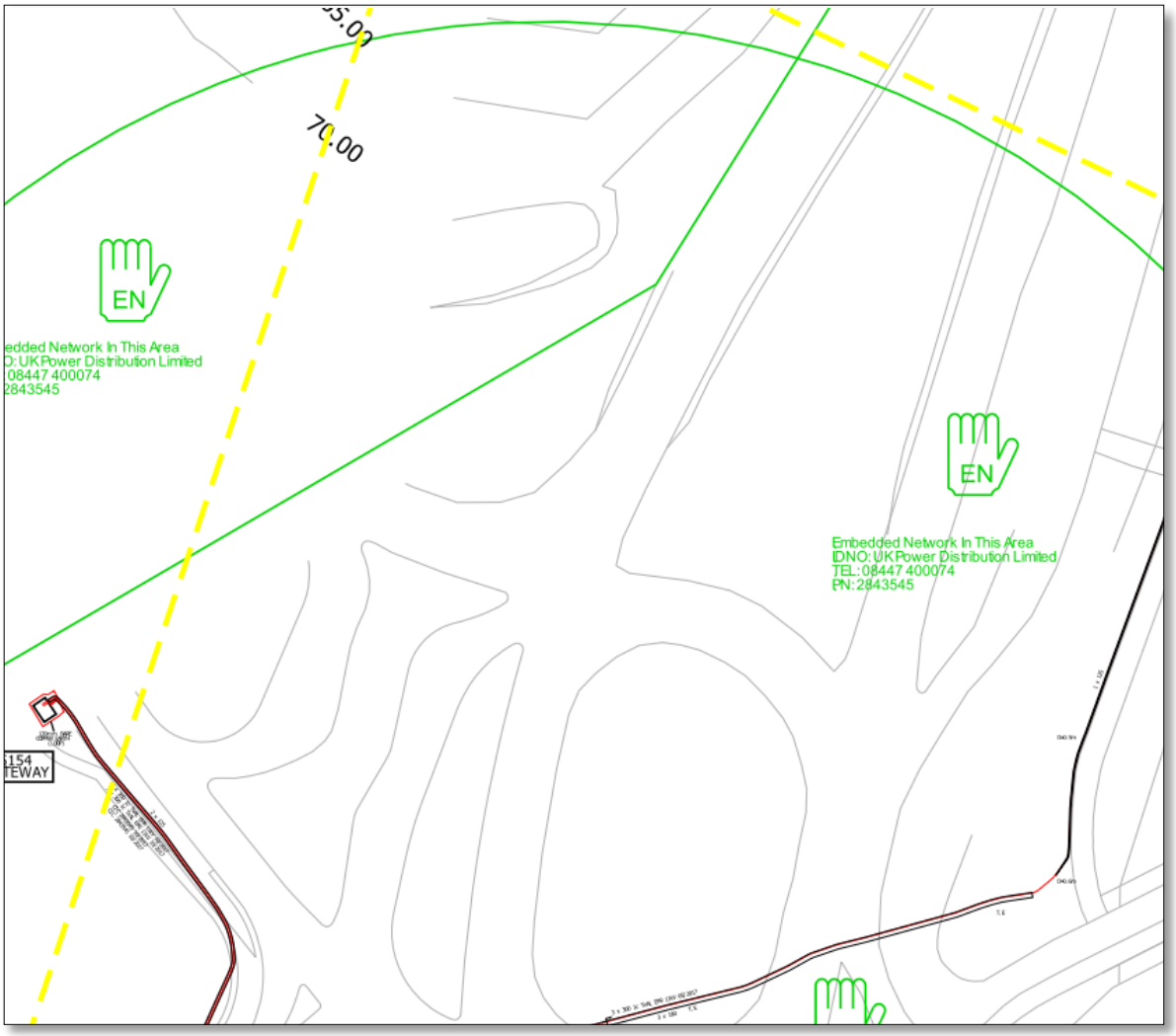
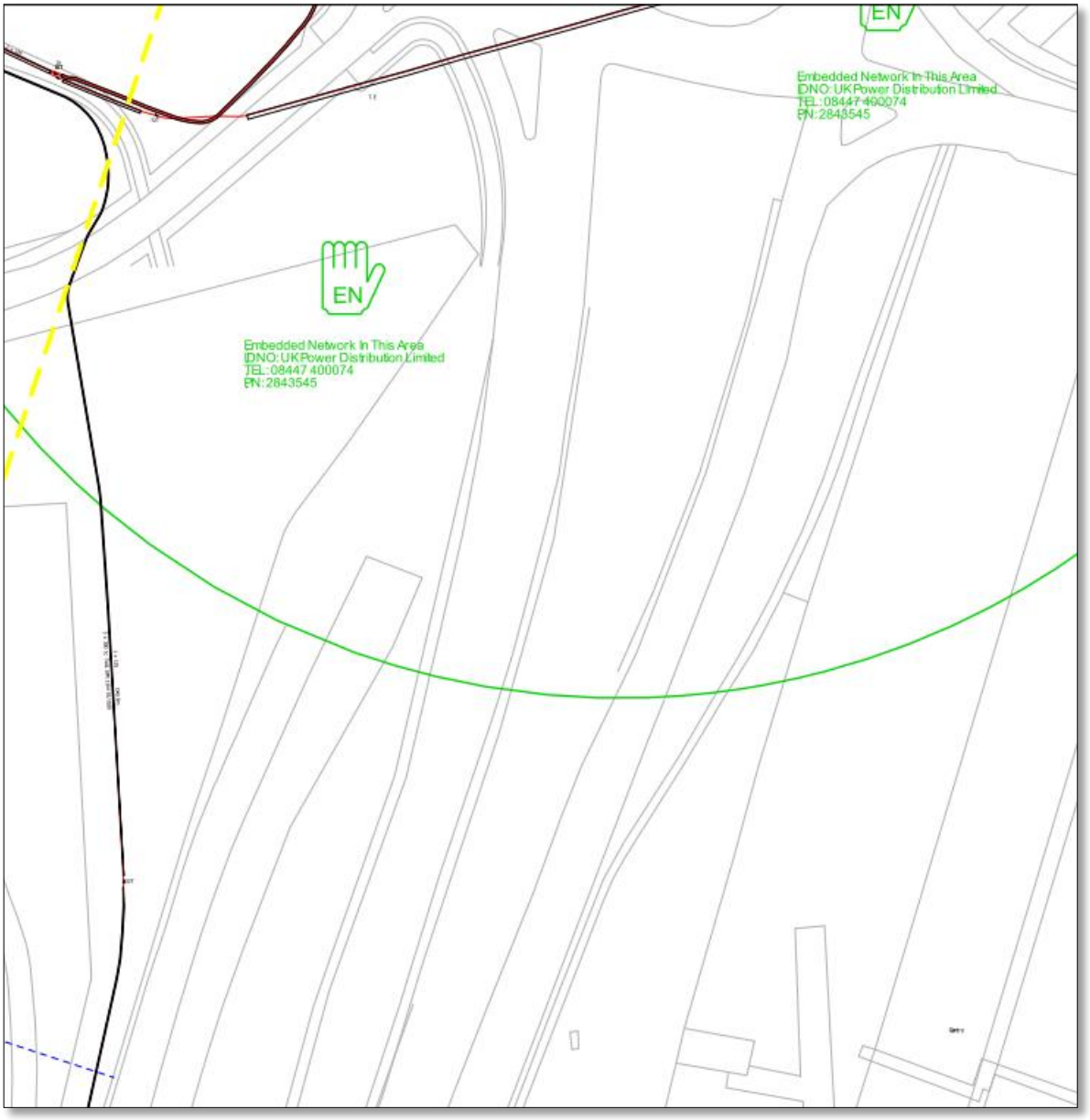


Figure 5.11.2 – Existing underground 11kV (HV) cables in the vicinity of the existing roundabout



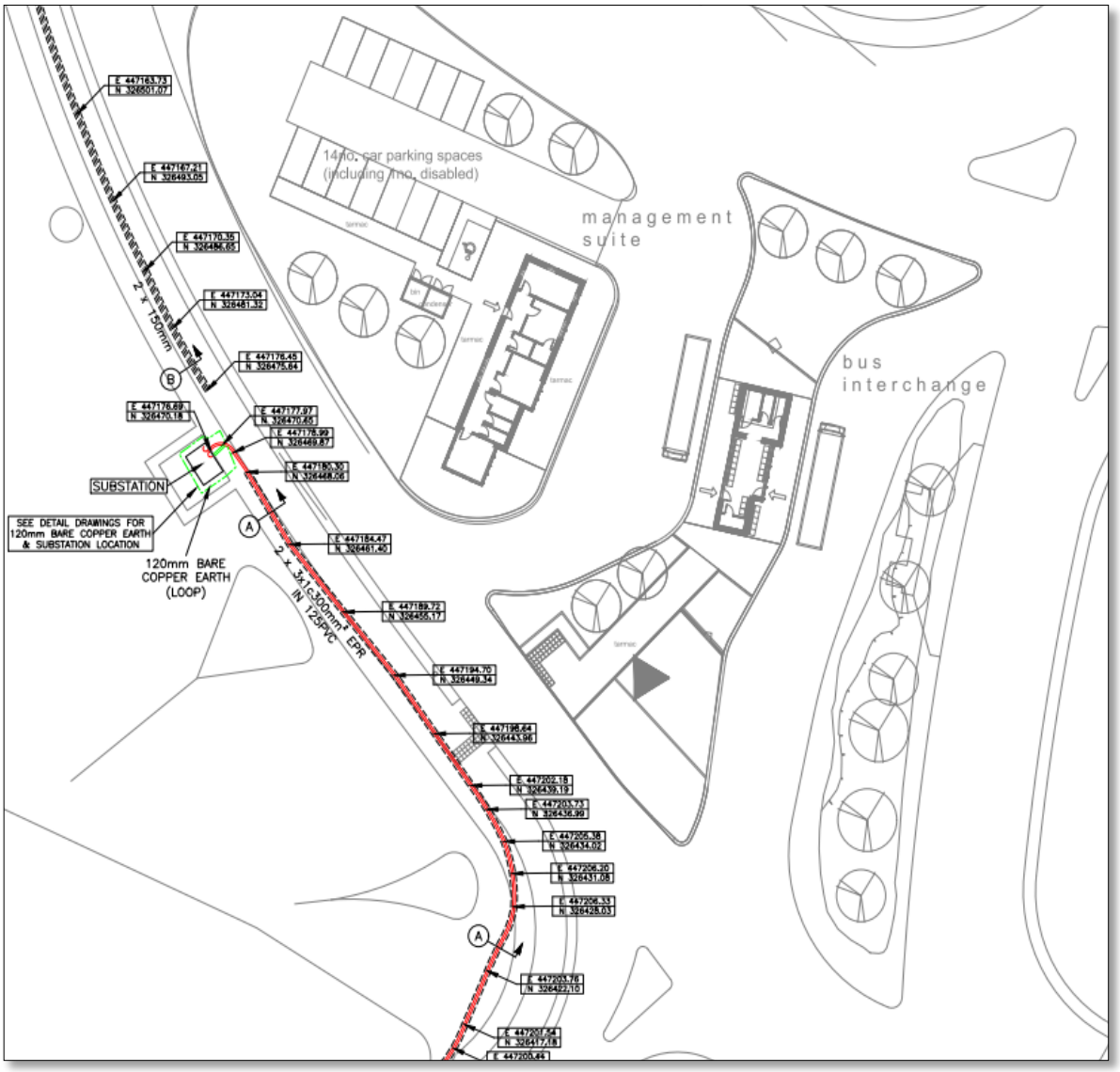
ELECTRICITY – UKPD

HV NETWORK – UNDERGROUND 11KV (HV) CABLES

The UKPD asset record indicates there are existing underground 11kV (HV) cables to the west of the existing roundabout within the area of the bus interchange as indicated by figures 5.11.3 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.11.3 – Existing underground 11kV (HV) cables in the area of the bus interchange

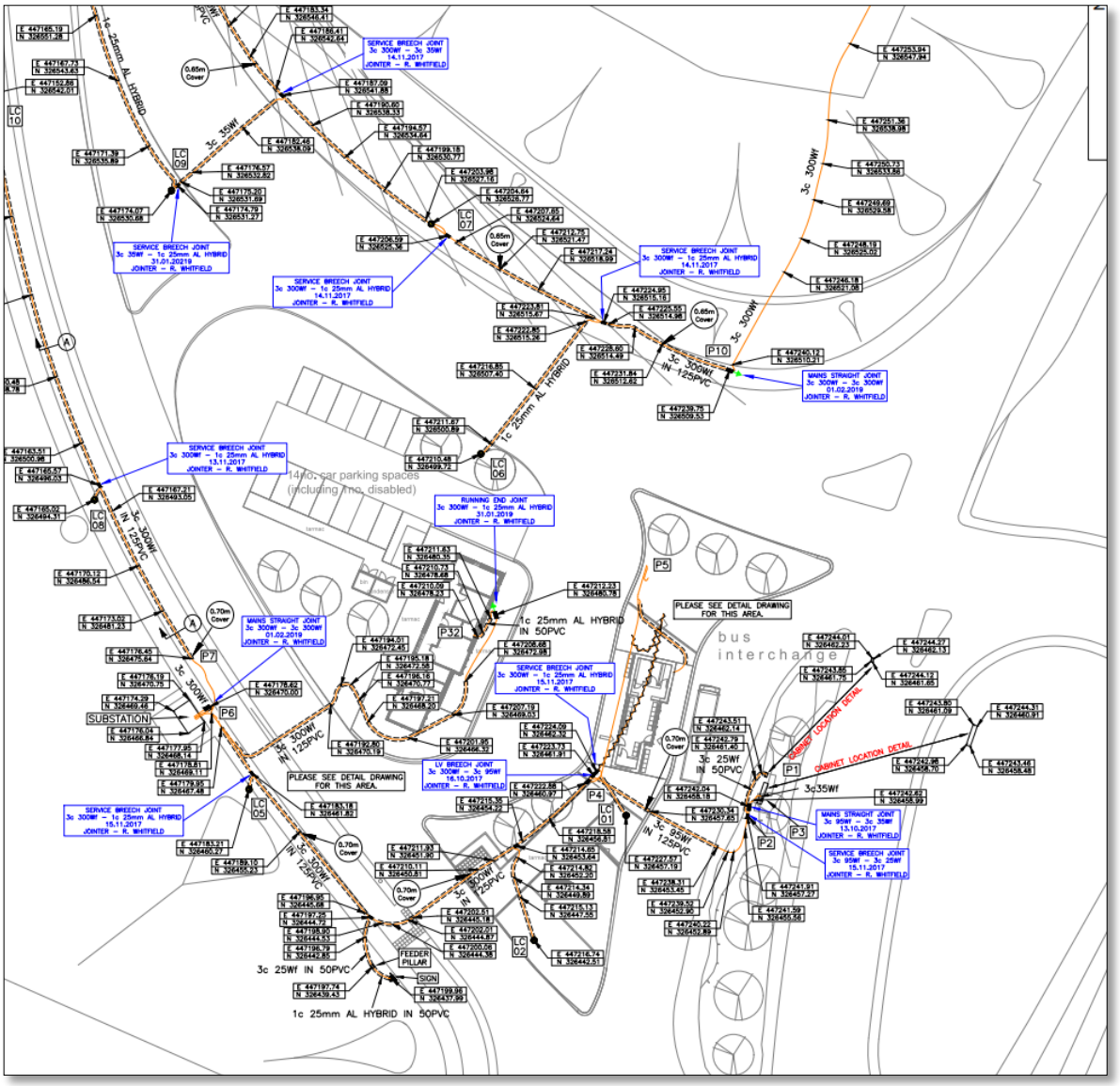


LV NETWORK – UNDERGROUND LV CABLES

The UKPD asset record indicates there are existing underground LV cables to the west of the existing roundabout within the area of the bus interchange as indicated by figures 5.11.4 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.11.4 – Existing underground LV cables in the area of the bus interchange



GAS – CADENT GAS NETWORKS

MEDIUM PRESSURE NETWORK – 315MM PE MEDIUM PRESSURE MAIN

The Cadent Gas Networks asset record indicates there is an existing 315mm PE Medium Pressure (MP) gas main which runs near existing roundabout as indicated by figures 5.11.5 and 5.11.6 below, however it's anticipated that it will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary, by trial hole investigations.

Figure 5.11.5 – Existing 315mm PE MP gas main in close proximity to the existing roundabout

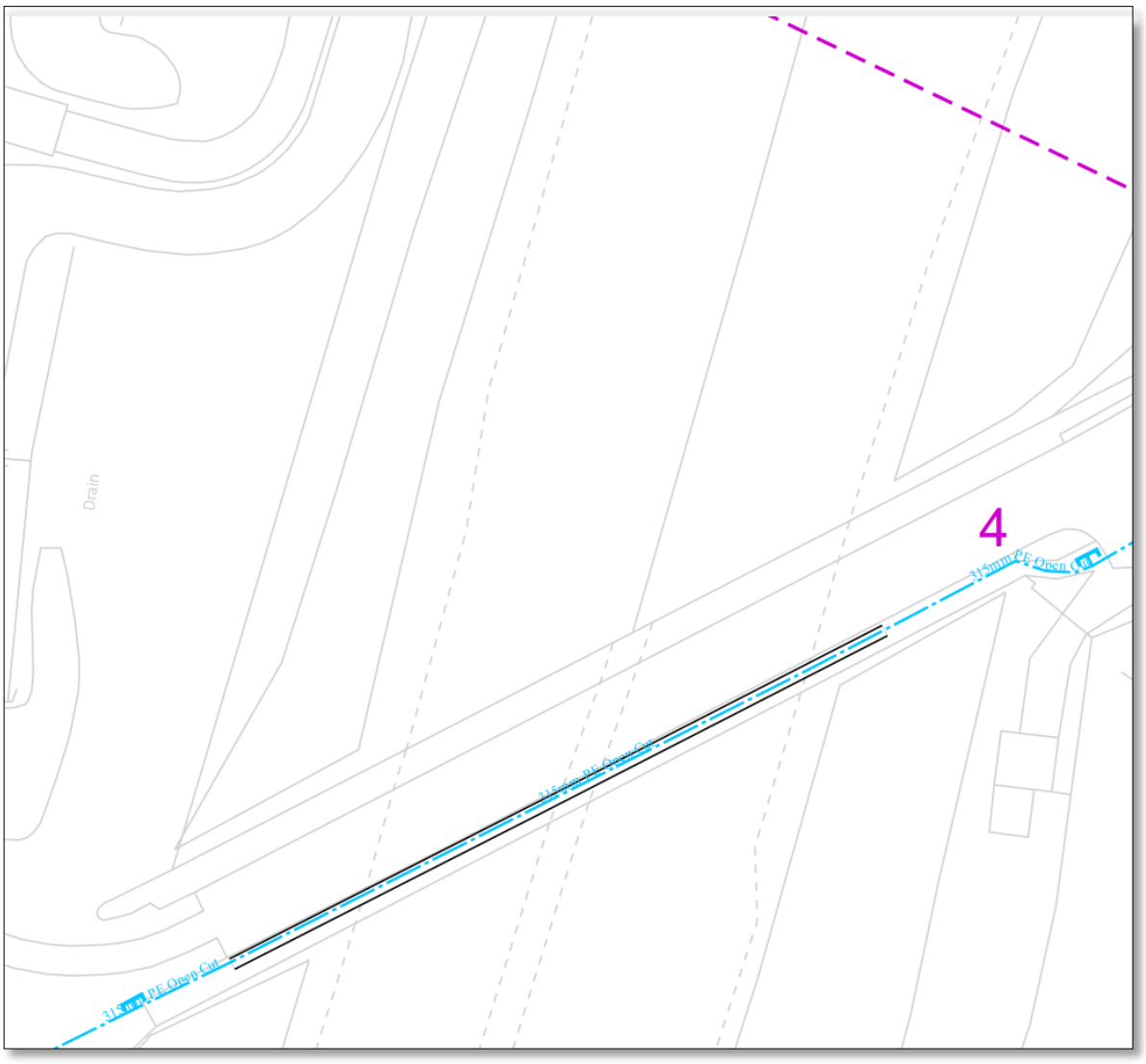
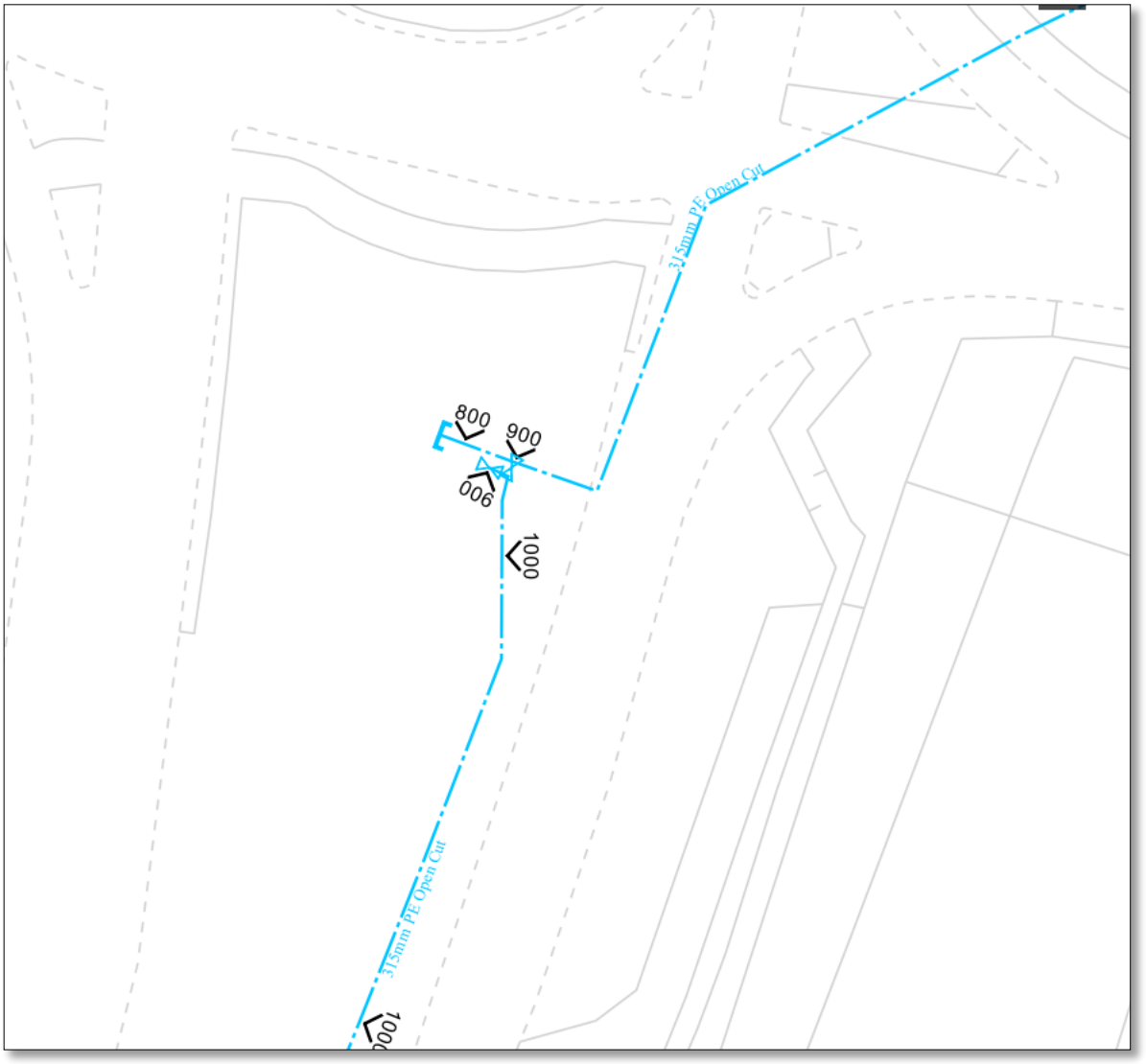


Figure 5.11.6 – Existing 315mm PE MP gas main in close proximity to the existing roundabout



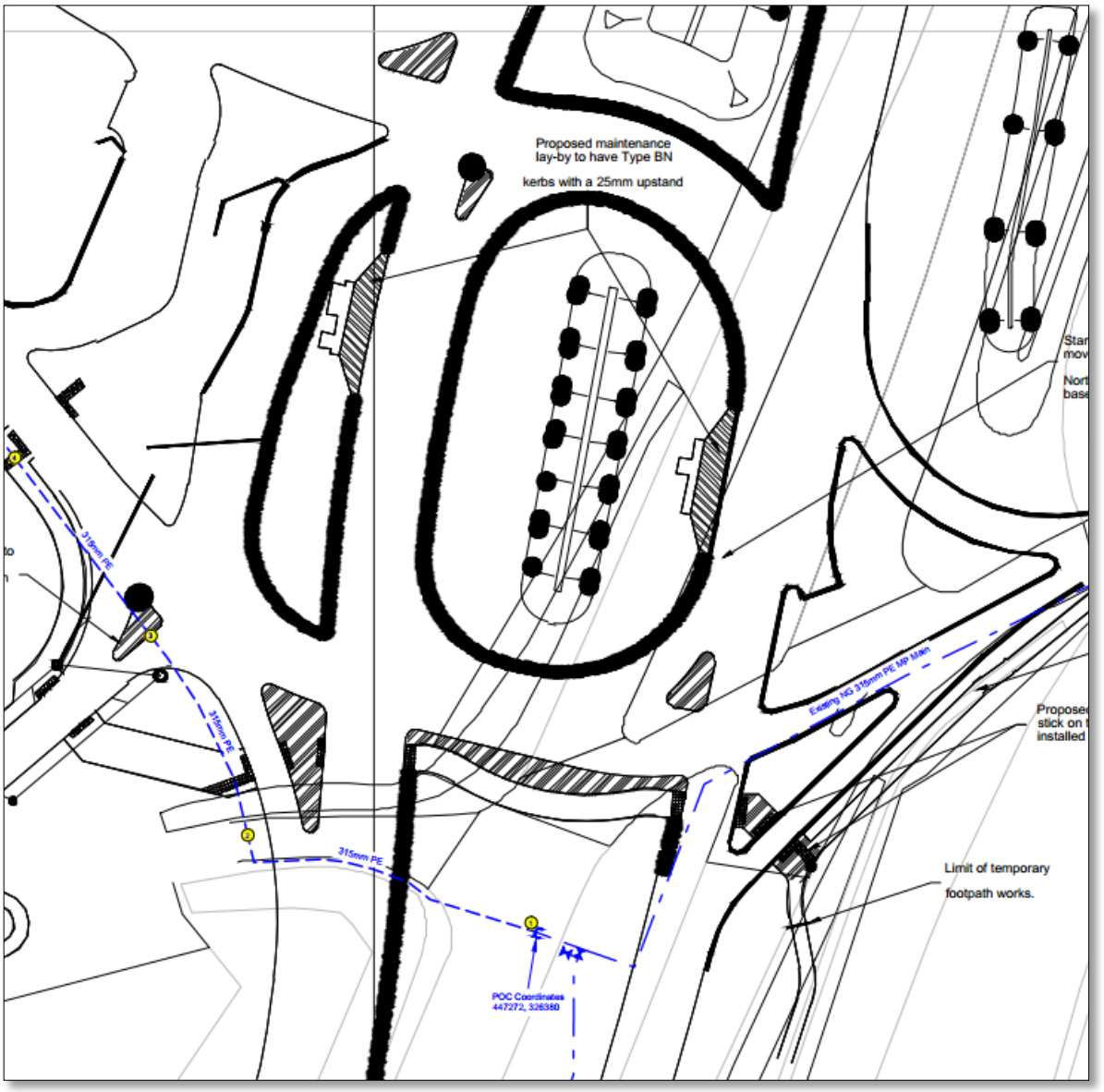
GAS – ESP GAS

MEDIUM PRESSURE NETWORK – 315MM PE MEDIUM PRESSURE MAIN

The ESP Gas asset record indicates there is an existing 315mm PE Medium Pressure (MP) gas main which runs near existing roundabout as indicated by figure 5.11.7 below, however it's anticipated that it will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary, by trial hole investigations.

Figure 5.11.7 – Existing 315mm PE MP gas main in close proximity to the existing roundabout



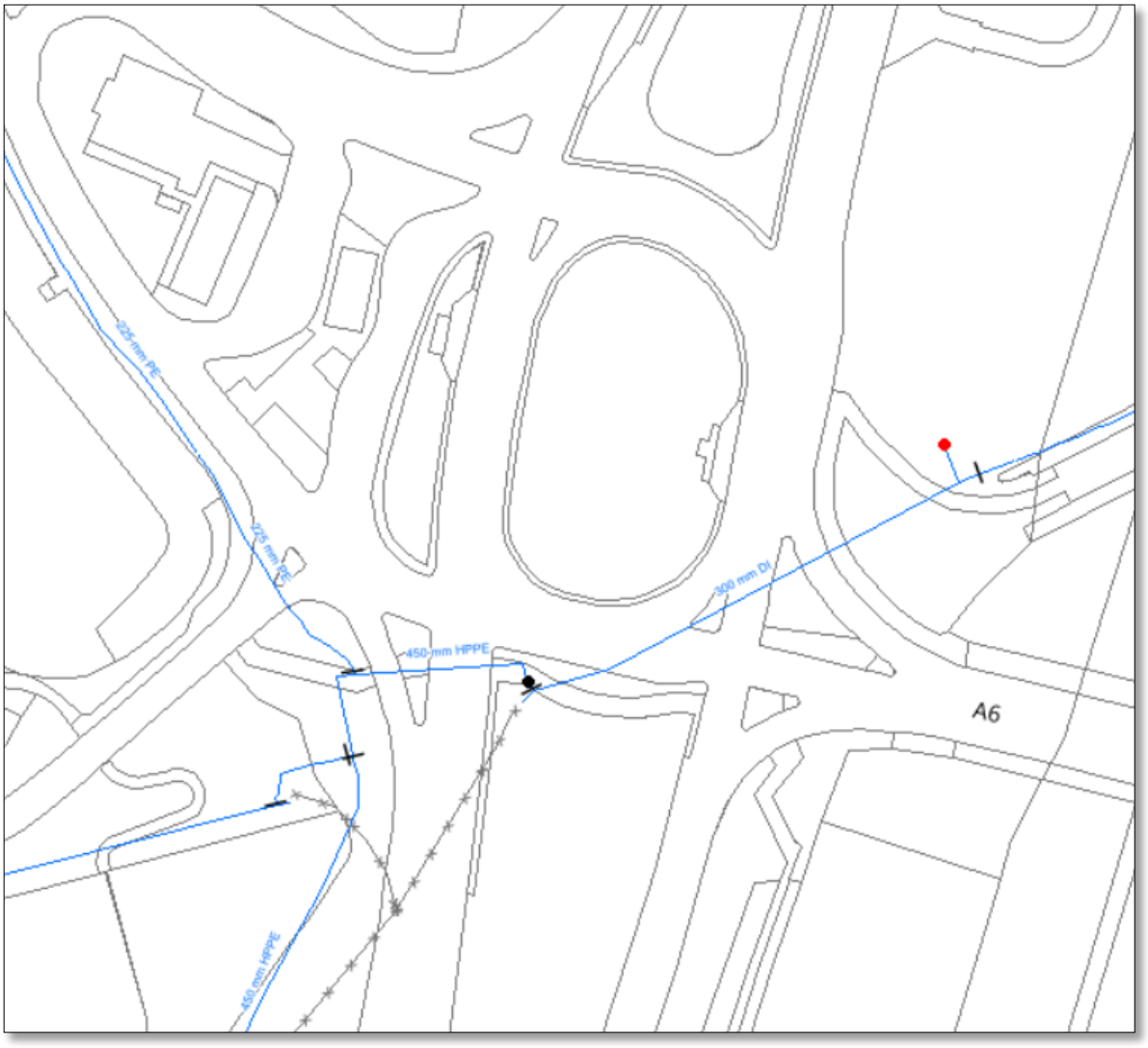
WATER – SEVERN TRENT WATER

POTABLE WATER NETWORKS

The Severn Trent Water asset record indicates there are existing 300mm DI, 450mm HPPE and 225mm PE water mains both within and near existing roundabout as indicated by figure 5.11.8 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary, by trial hole investigations.

Figure 5.11.8 – Existing 300mm DI, 450mm HPPE and 225mm PE water mains in close proximity to the existing roundabout



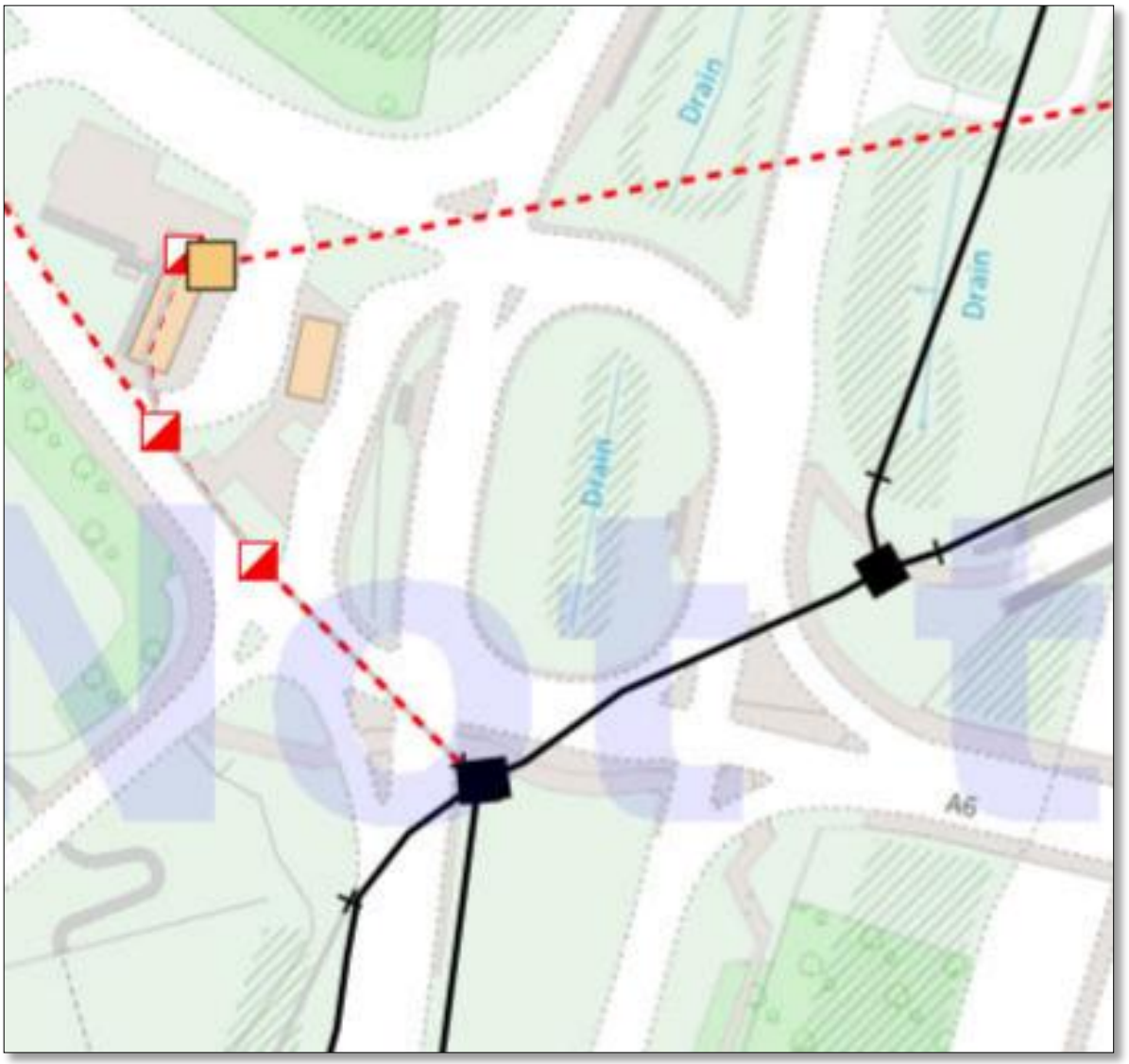
TELECOMS – OPENREACH

DUCTED NETWORK

The Openreach asset record indicates there are existing underground chambers and ducts both within and near the existing roundabout as indicated by figure 5.11.9 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed if necessary, by trial hole investigations.

Figure 5.11.9 – Existing underground ducts and chambers within and in close proximity to the existing roundabout



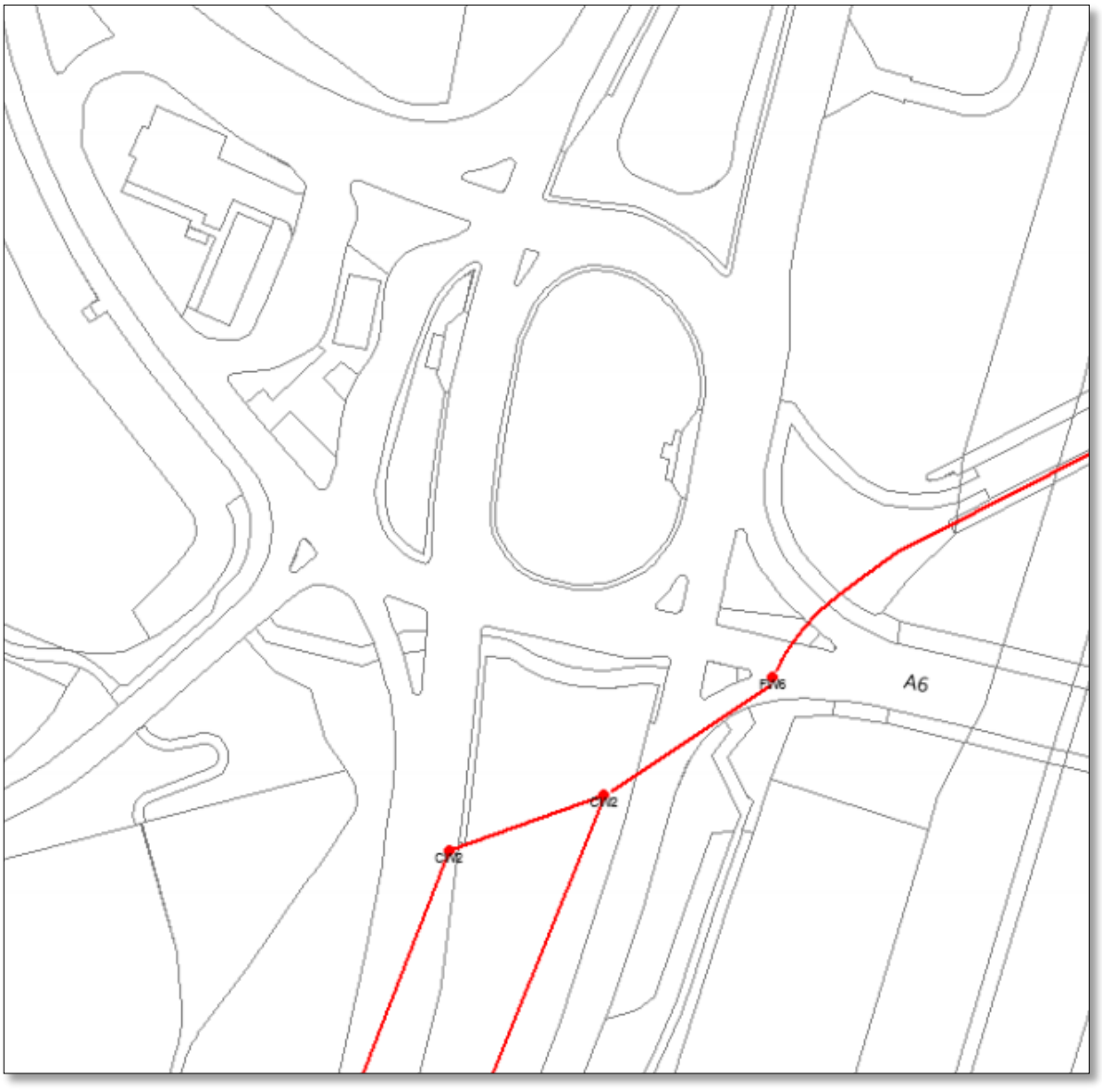
TELECOMS – VIRGIN MEDIA

DUCTED NETWORK

The Virgin Media asset record indicates there are existing underground chambers and ducts near the existing roundabout as indicated by figure 5.11.10 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed, if necessary, by trial hole investigations.

Figure 5.11.10 – Existing underground ducts and chambers within and in close proximity to the existing roundabout



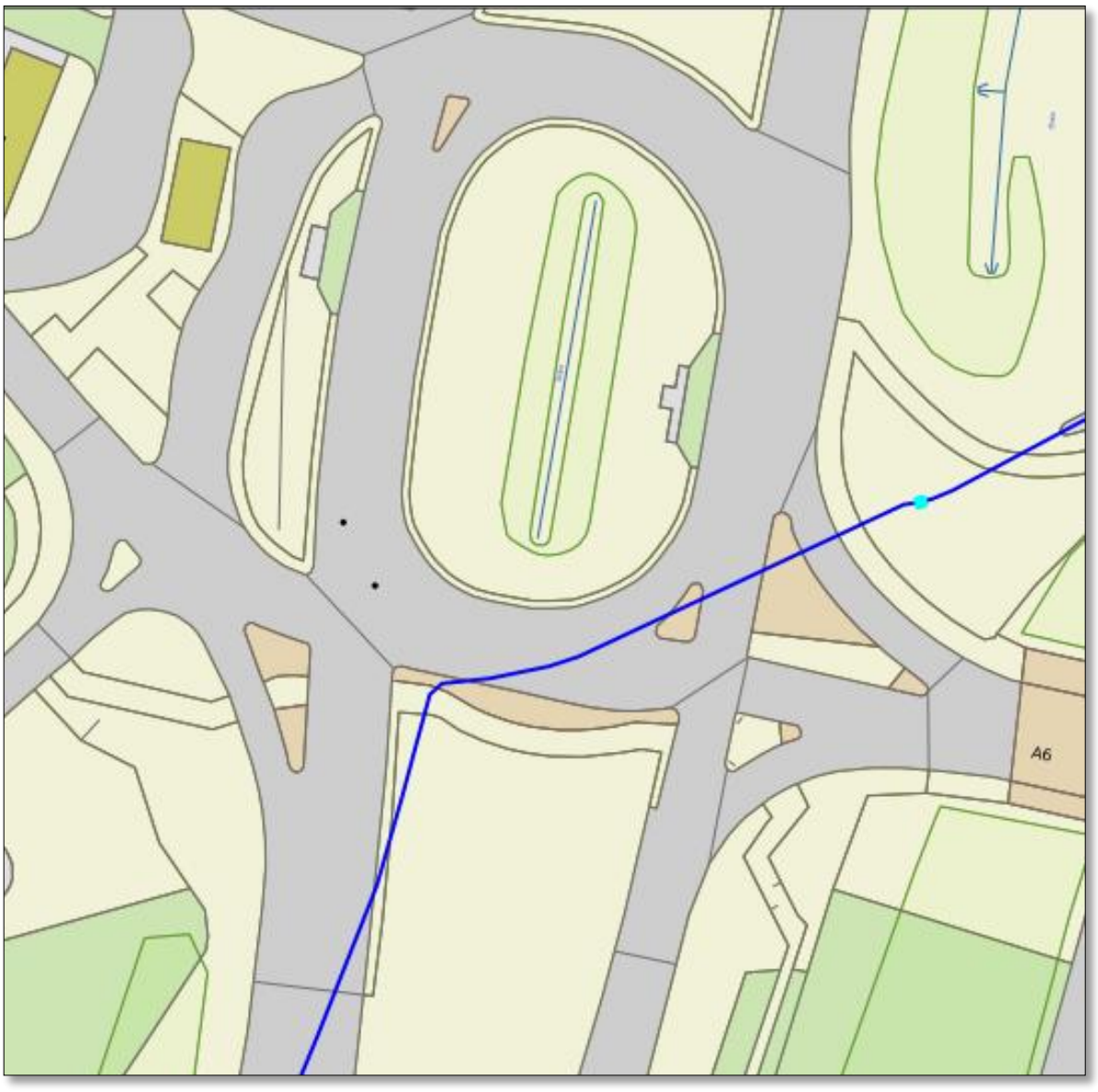
TELECOMS – VODAFONE

DUCTED NETWORK

The Vodafone asset record indicates there are existing underground chambers and ducts both within and near the existing roundabout as indicated by figure 5.11.11 below, however it's anticipated that they will remain unaffected by the proposed widening of the existing carriageway.

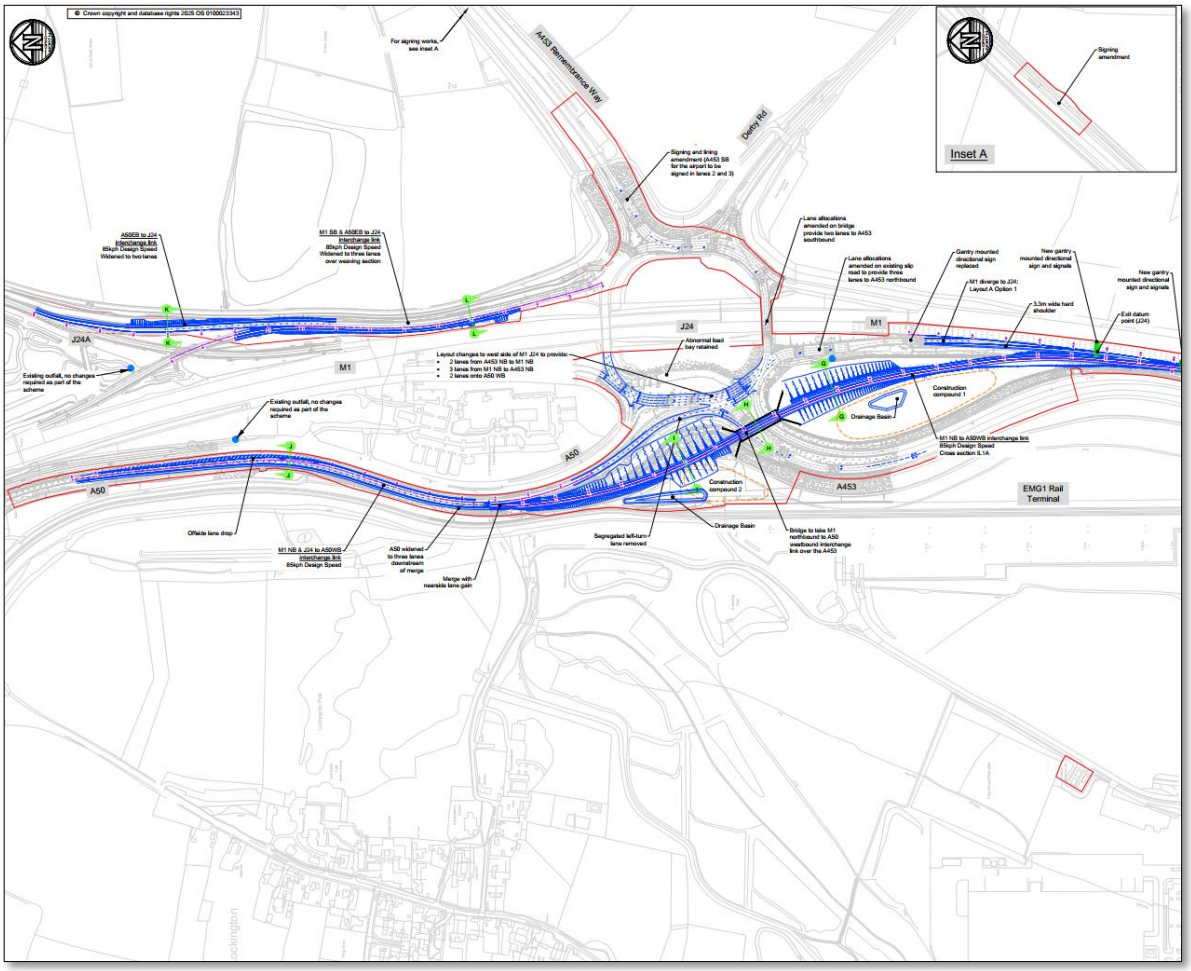
It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed if necessary, by trial hole investigations.

Figure 5.11.11 – Existing underground ducts and chambers within and in close proximity to the existing roundabout



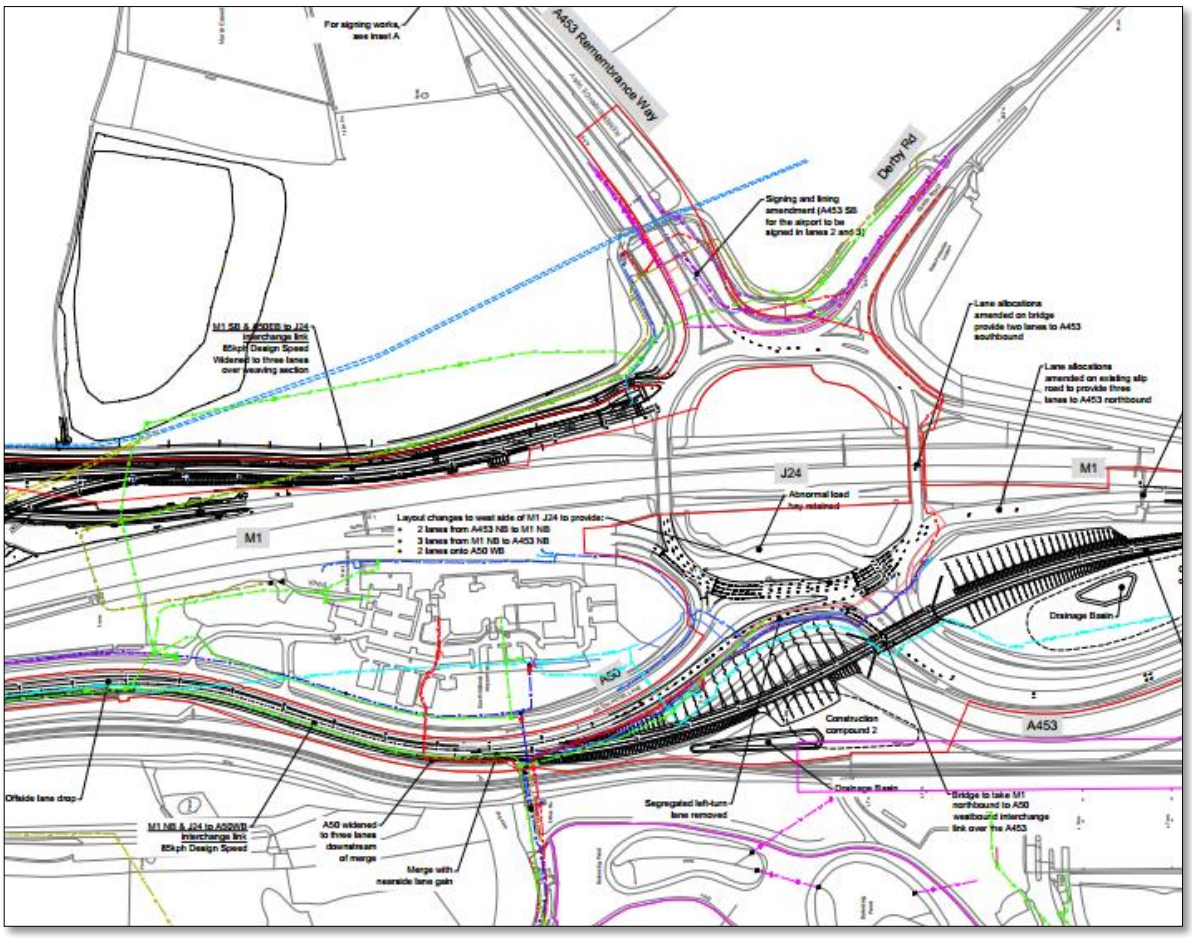
5.12. S278 HIGHWAYS WORK AREA 05 – M1 JUNCTION 24

Figure 5.12.1 – M1 Junction 24



UTILITY NETWORK COMPOSITE OVERLAY – M1 JUNCTION 24

Figure 5.12.3 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – M1 JUNCTION 24

A utility asset records search has been undertaken to determine what assets exist near to or within the existing junction.

The results of this search and affected assets only can be seen in table 5.12.4 below.

Table 5.12.4 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
Cadent Gas Networks	Gas	Yes
Severn Trent Water	Water	Yes
Openreach	Telecoms	Yes

5.13. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

ELECTRICITY – NGED

HV AND LV NETWORK – UNDERGROUND 11KV (HV) AND LV CABLES

The NGED asset record indicates there are existing underground 11kV (HV) and LV cables which run along the verge on the western side of the A50 as indicated by figures 5.13.1 and 5.13.2 below, it's anticipated that these cables will need to be diverted to accommodate the construction of the proposed access road.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary by trial hole investigations.

Figure 5.13.1 – Existing underground 11kV (HV) and LV cables in the verge of the A50

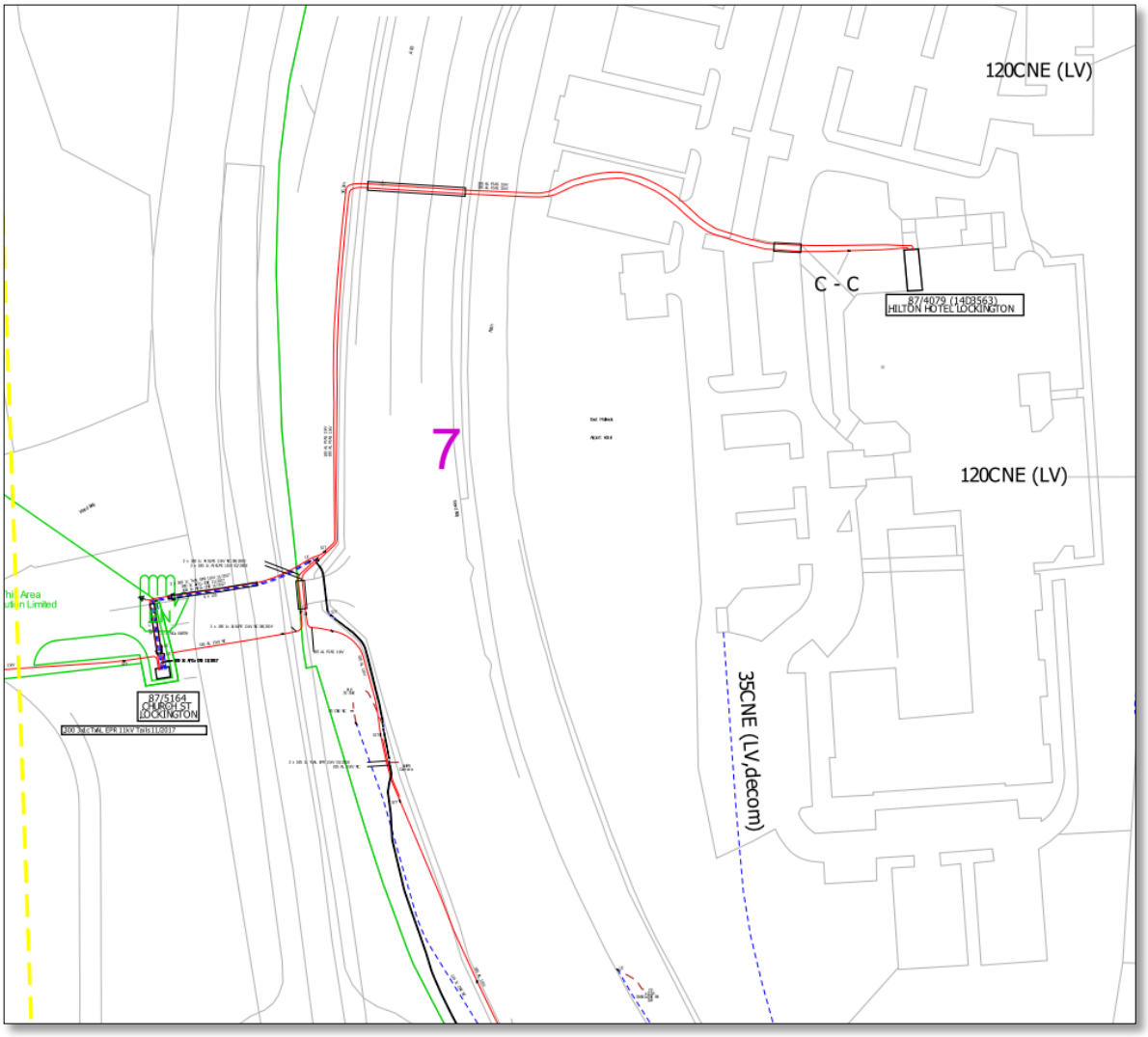
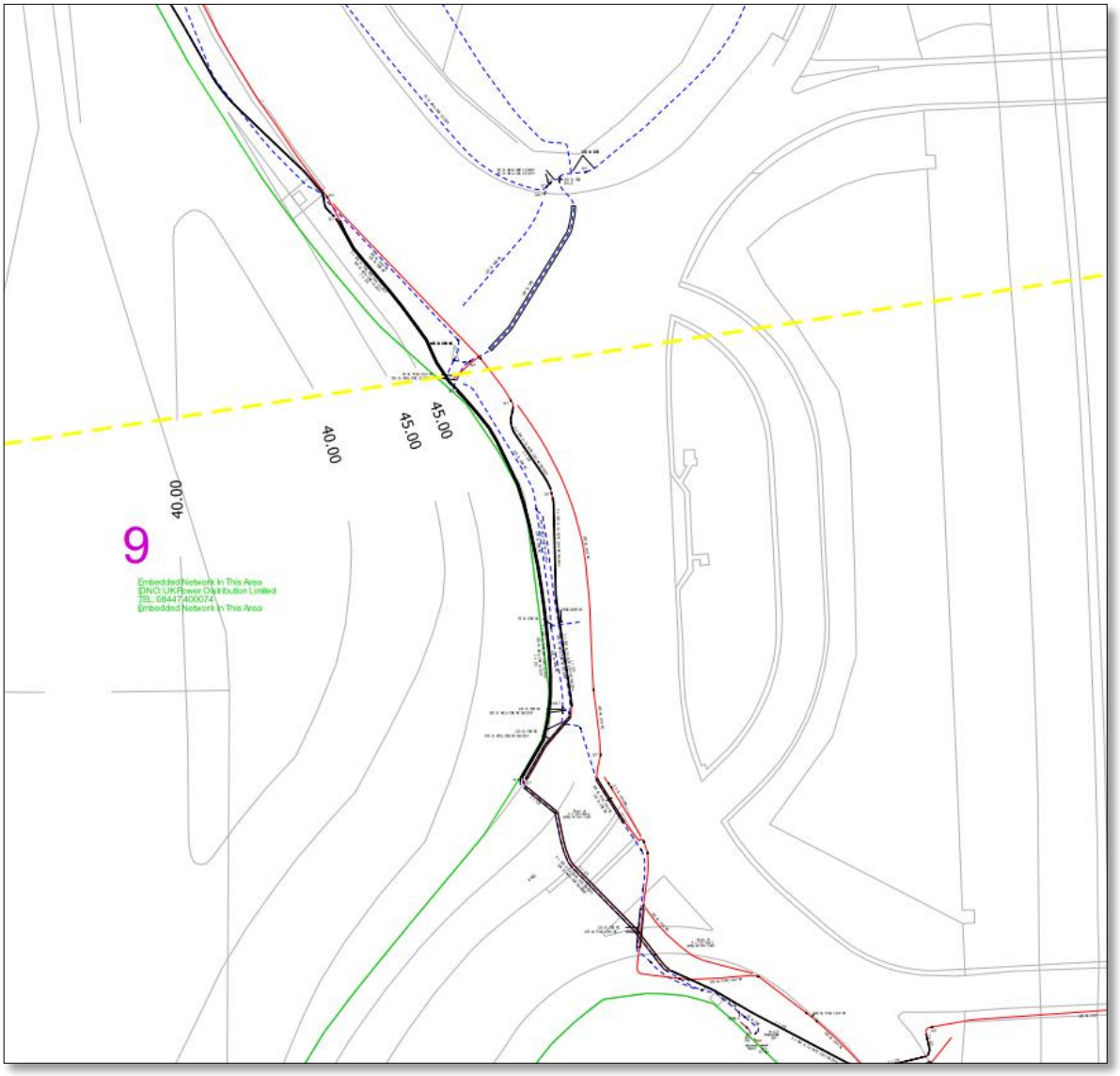


Figure 5.13.2 – Existing underground 11kV (HV) and LV cables in the verge of the A50

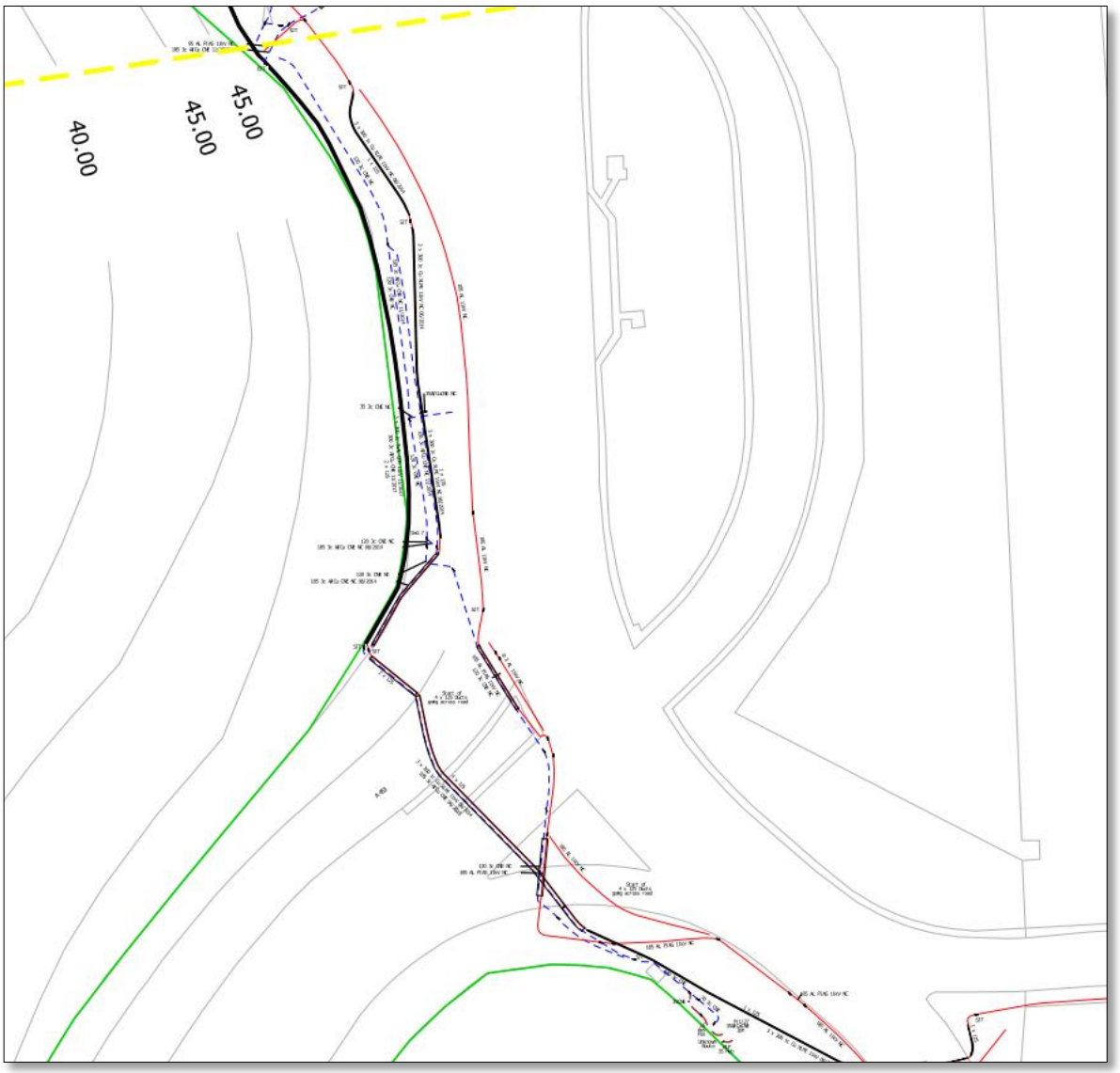


HV AND LV NETWORK – UNDERGROUND 11KV (HV) AND LV CABLES

The NGED asset record indicates there are existing underground 11kV (HV) and LV cables which run across the junction with the A453 as indicated by figure 5.13.3 below, it's anticipated that these cables will need to be diverted to accommodate the construction of the proposed underpass.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the cables, followed if necessary, by trial hole investigations.

Figure 5.13.3 – Existing underground 11kV (HV) and LV cables running across the junction with the A453



GAS – CADENT GAS NETWORKS

LOW PRESSURE NETWORK – 6INCH SI LOW PRESSURE MAIN

The Cadent Gas Networks asset record indicates there is an existing 315mm PE Medium Pressure (MP) gas main which runs near existing roundabout as indicated by figures 5.13.4 and 5.13.5 below, however it's anticipated that it will remain unaffected by the proposed widening of the existing carriageway.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed, if necessary, by trial hole investigations.

Figure 5.13.4 – Existing underground 6inch SI Low Pressure (LP) gas main in the verge of the A50

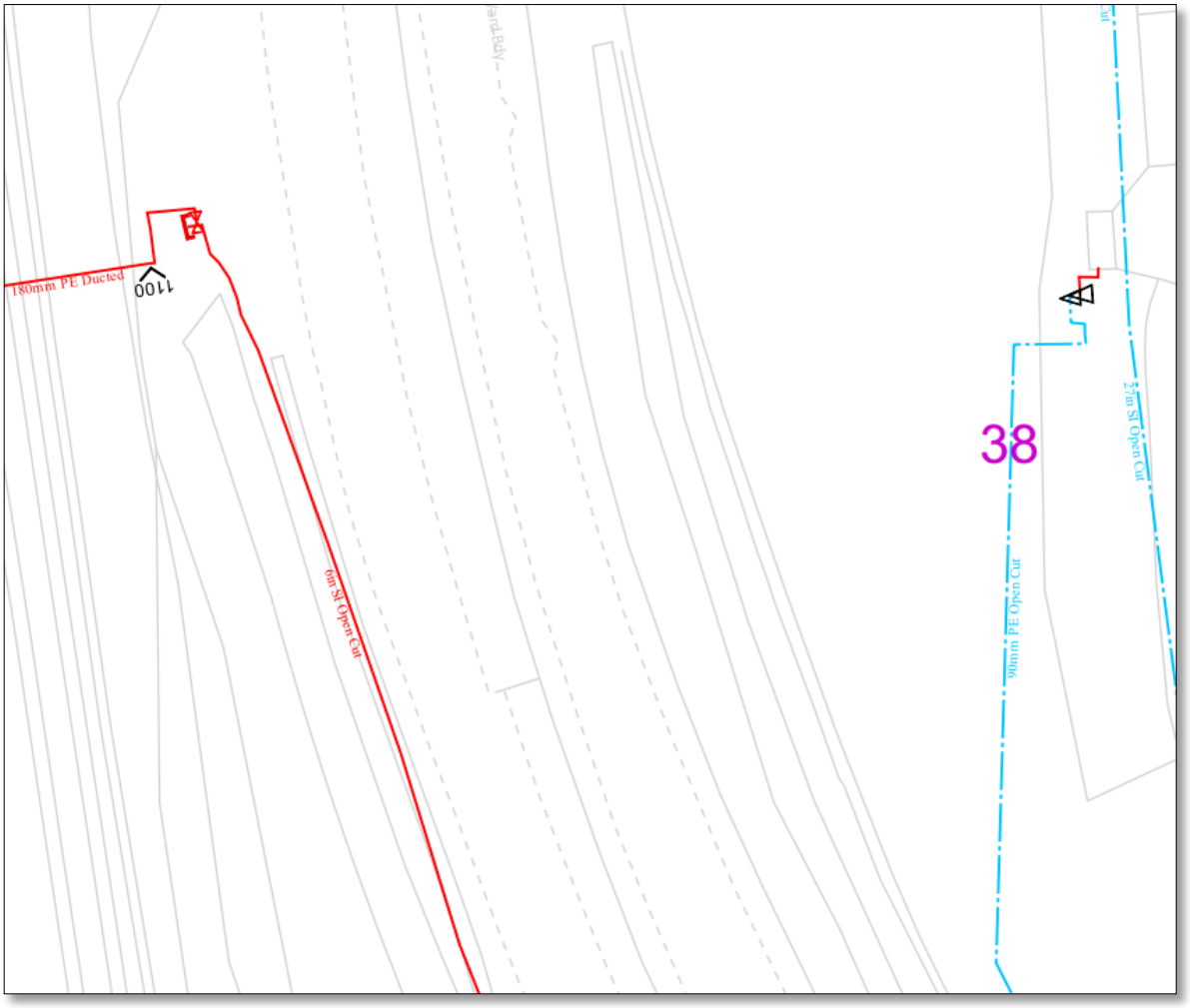
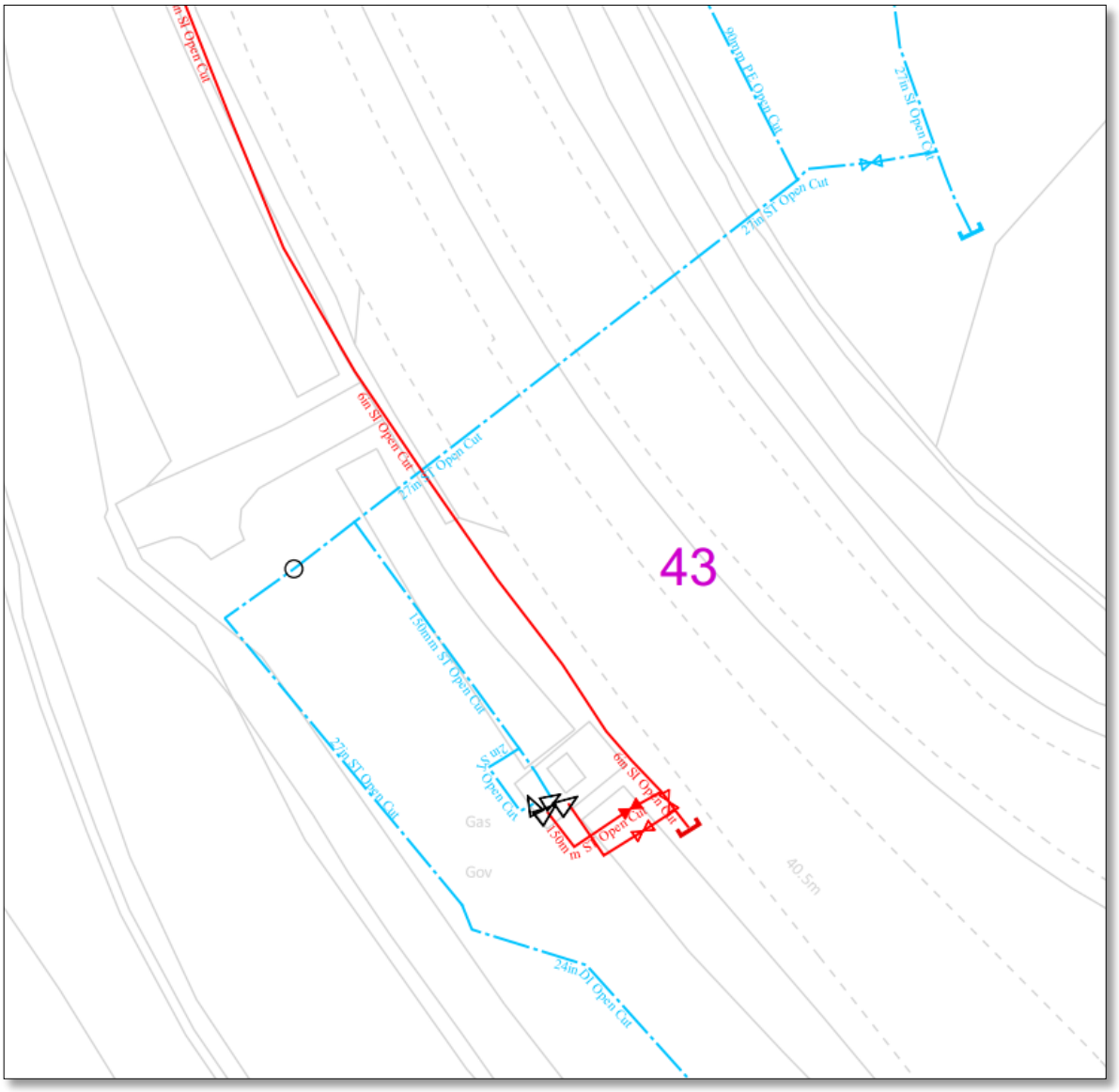


Figure 5.13.5 – Existing underground 6inch SI Low Pressure (LP) gas main in the verge of the A50



LOW AND MEDIUM PRESSURE NETWORK – GAS GOVERNOR

The Cadent Gas asset record indicates there is an existing gas governor positioned in the verge adjacent to the A50 as indicated by figures 5.13.6 and 5.13.7 below, its anticipated that the gas governor will need to be diverted to a suitable location to accommodate the construction of the link road between the A453 and the A50.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the mains, followed if necessary, by trial hole investigations.

Figure 5.13.6 – Existing gas governor adjacent to the A50

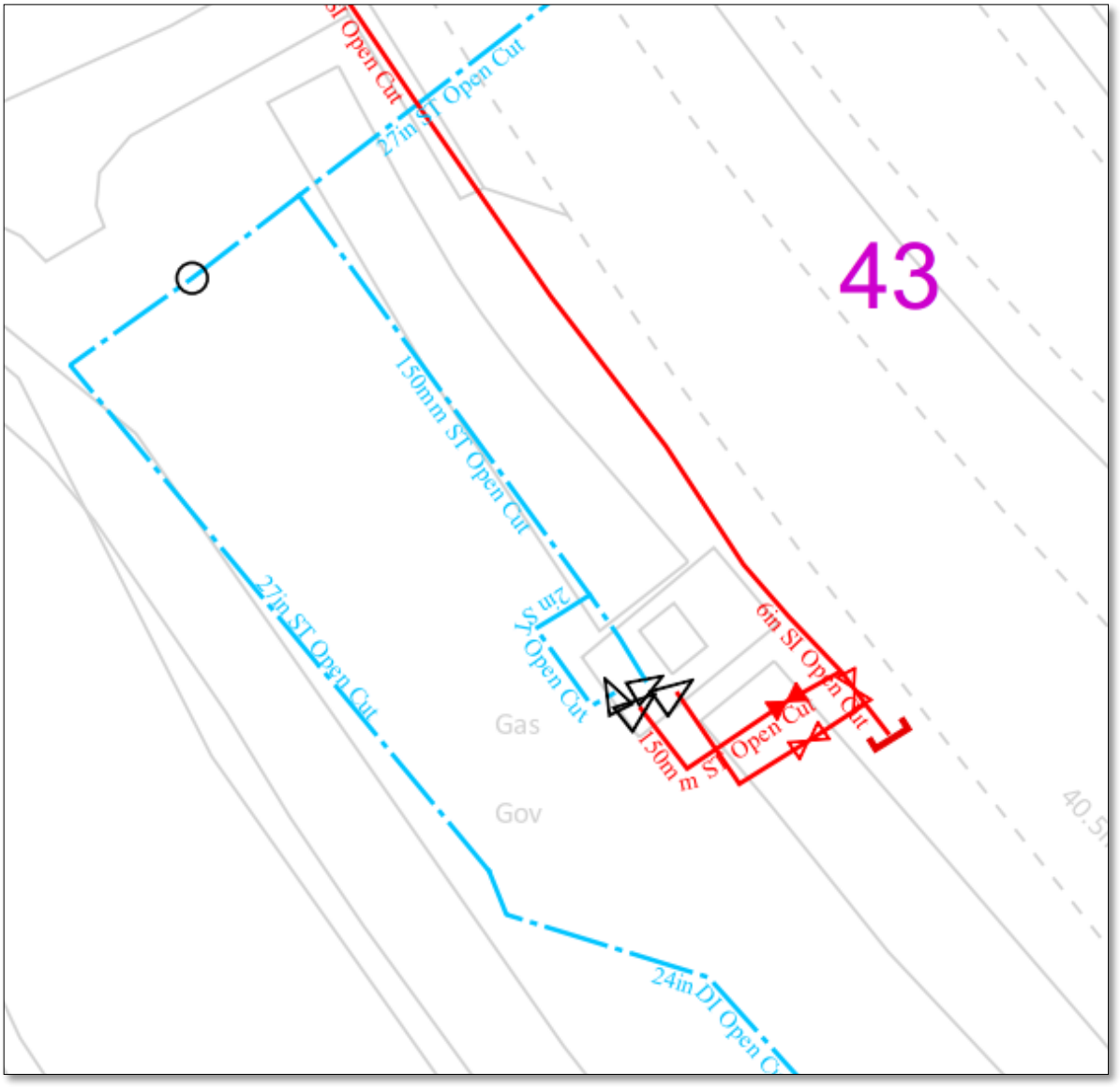


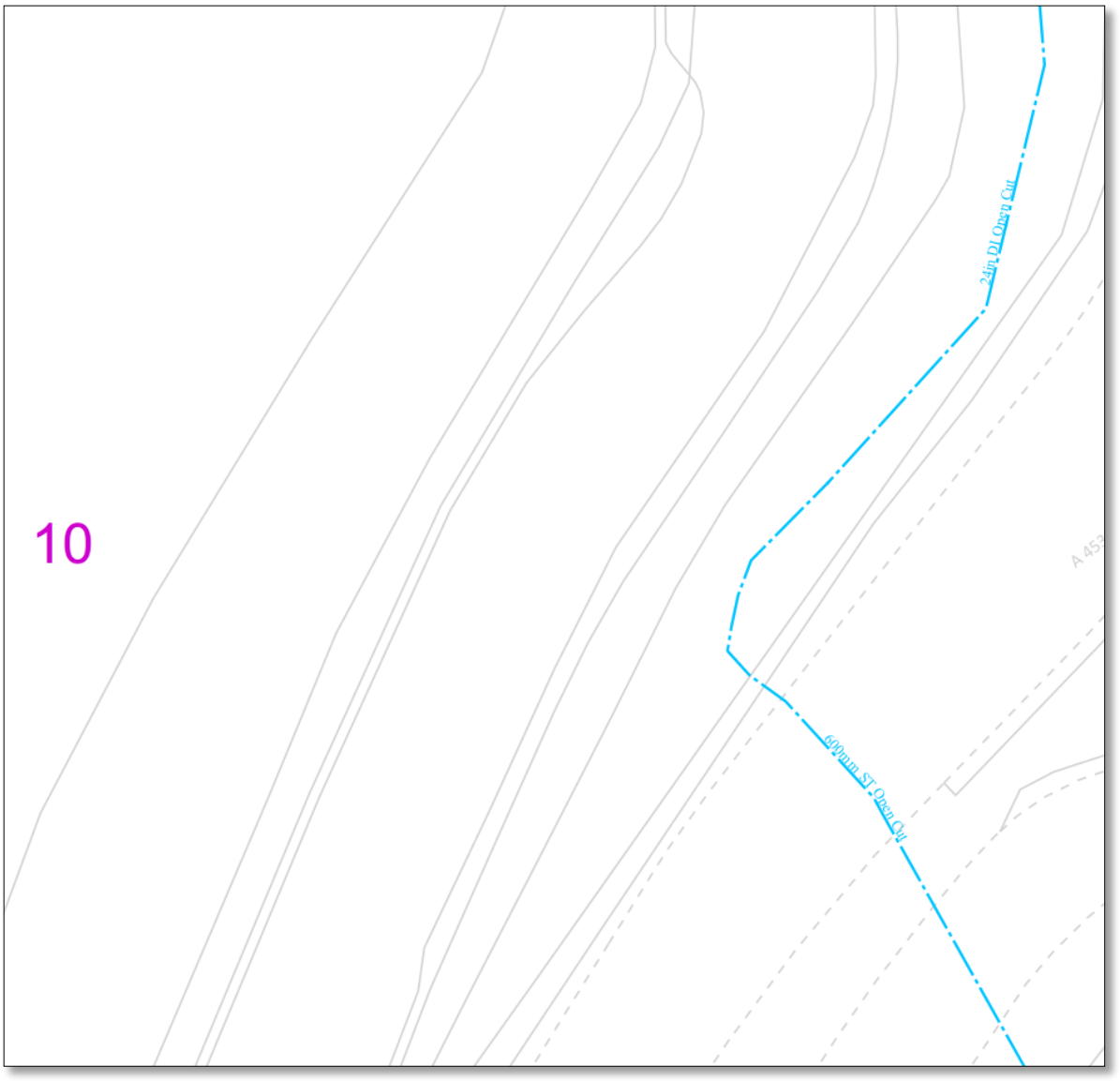
Figure 5.13.7 – Existing gas governor adjacent to the A50

MEDIUM PRESSURE NETWORK – 24INCH DI AND 600MM ST MEDIUM PRESSURE MAINS

The Cadent Gas asset record indicates there are existing underground 24inch DI and 600mm ST medium pressure (MP) gas mains which run parallel to and across the A453 as indicated by figures 5.13.8 below, it's anticipated that these mains will need to be diverted to accommodate the construction of the proposed underpass.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the mains, followed if necessary, by trial hole investigations.

Figure 5.13.8 – Existing underground 24inch DI and 600mm ST medium pressure (MP) gas mains running across the A453



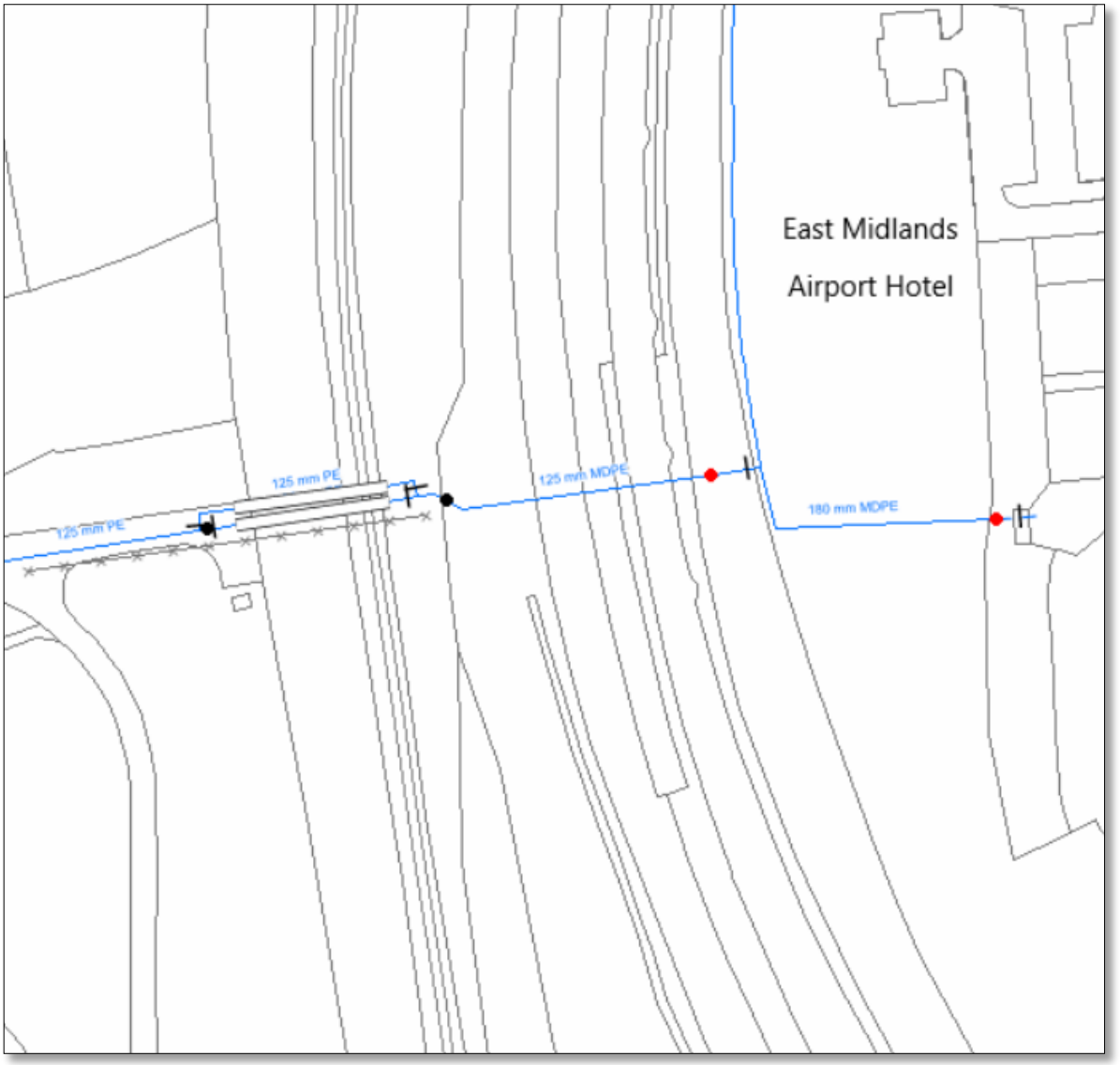
WATER – SEVERN TRENT WATER

POTABLE WATER NETWORKS

The Severn Trent Water asset record indicates there is an existing 125mm PE water main which runs underneath both the A50 and the existing railway track as indicated by figure 5.13.9 below, there is a possibility that the main could be affected by the construction of the proposed access road.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depth of the main, followed if necessary, by trial hole investigations.

Figure 5.13.9 – Existing 125mm PE water main running underneath the A50 and the railway track



TELECOMS – OPENREACH

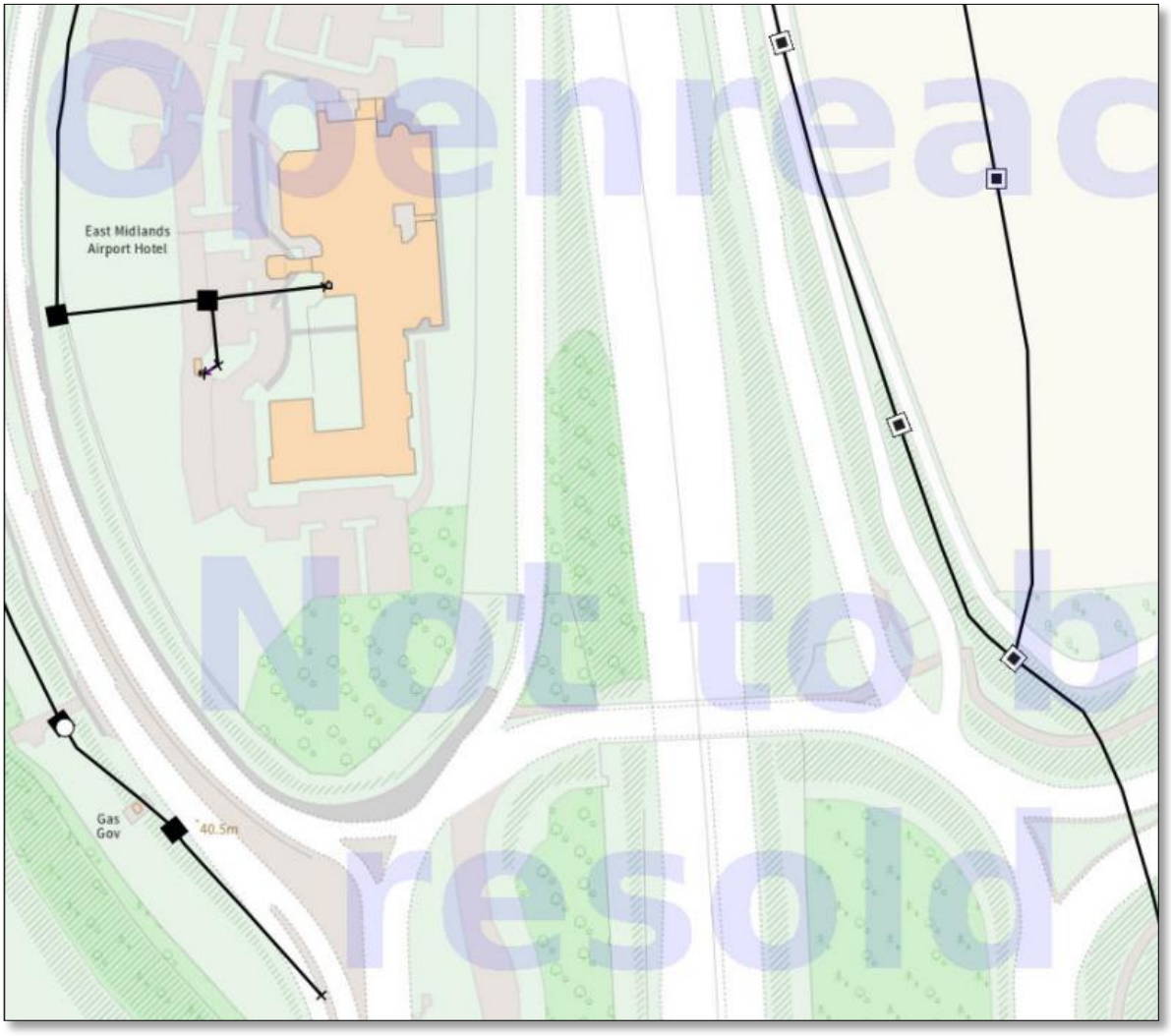
DUCTED NETWORK

The Openreach asset record indicates there are existing underground chambers and ducts which run along the verge on the western side of the A50 as indicated by figures 5.13.10 below, it's anticipated that these ducts and chambers will need to be diverted to accommodate the construction of the proposed access road.

It's recommended that a topographical and GPR survey is undertaken on the highway to establish the true positions and depths of the chambers and ducts, followed if necessary, by trial hole investigations.

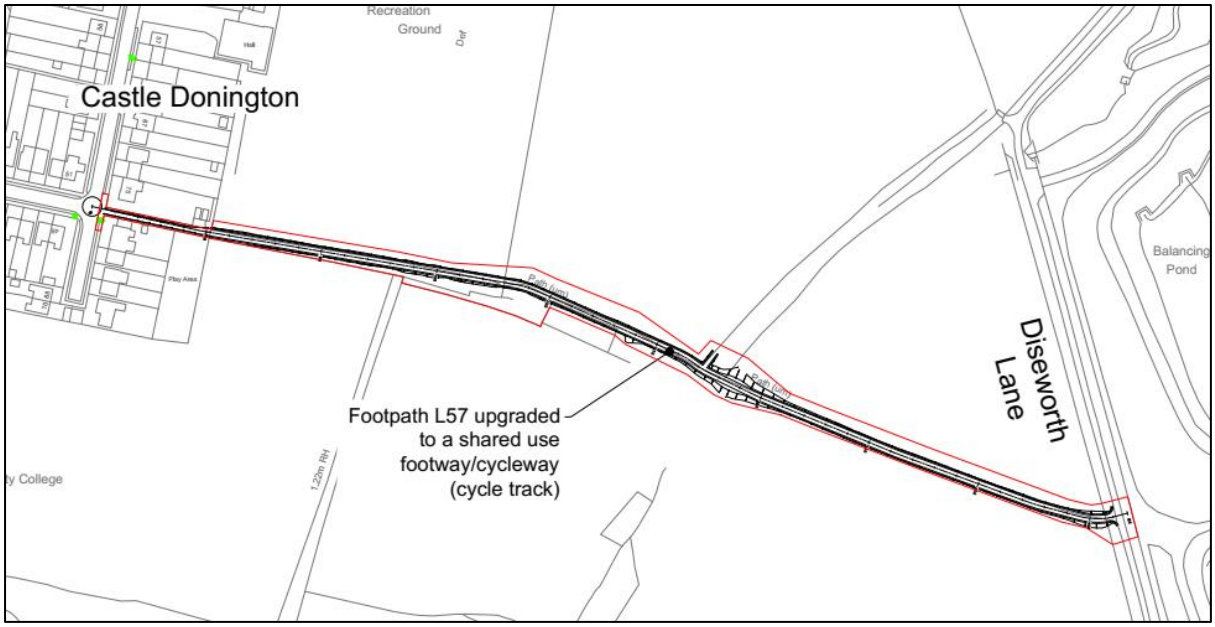
It's also recommended that Openreach are instructed to complete a C3 survey to establish the number of and the material of the lines within the ducts as there is a significant cost difference between fibre and copper lines.

Figure 5.13.10 – Existing ducts and chambers in the western verge of the A50



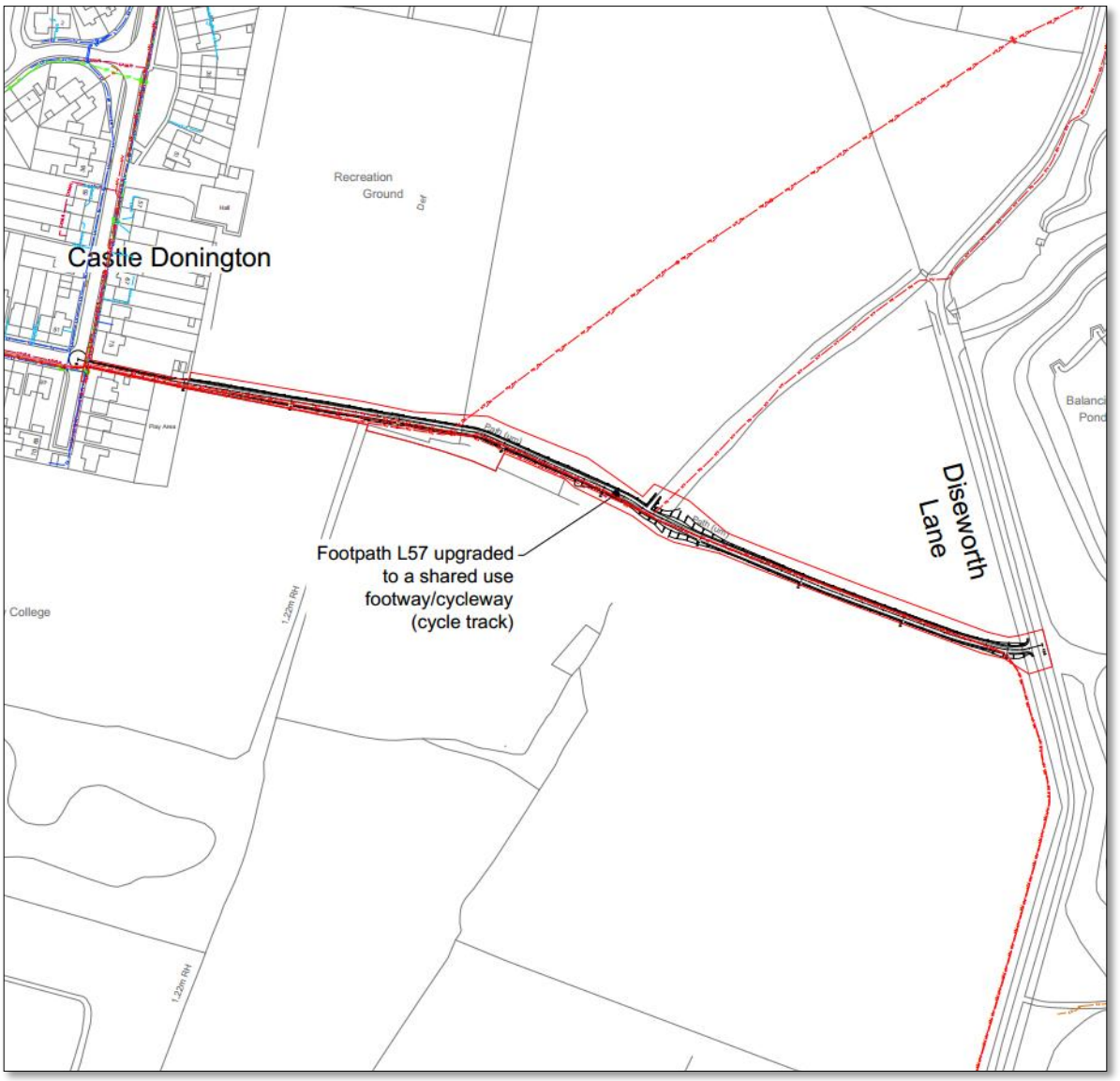
5.14. S278 HIGHWAYS WORK AREA 06 – L57 FOOTPATH UPGRADE

Figure 5.14.1 – L57 footpath upgrade



UTILITY NETWORK COMPOSITE OVERLAY – L57 FOOTPATH UPGRADE

Figure 5.14.2 – Utility Network Composite Overlay



UTILITY NETWORK ASSET RECORDS SEARCH – L57 FOOTPATH UPGRADE

A utility asset records search has been undertaken to determine what assets exist near to or within the existing junction.

The results of this search and affected assets only can be seen in table 5.14.3 below.

Table 5.14.3 – Search Results

Company Name	Type	Plant in Area
NGED	Electricity	Yes
UK Power Distribution	Electricity	Yes
Cadent Gas Networks	Gas	Yes
Openreach	Telecoms	Yes

5.15. IDENTIFIED UTILITY NETWORKS, DIVERSIONS AND TERMINATIONS

ELECTRICITY – NGED

HV NETWORK – UNDERGROUND 11KV (HV) CABLES

The NGED asset record indicates there are existing underground 11kV (HV) cables which run along the public footpath from Moira Dale to Diseworth Lane as per figures 5.15.1 and 5.15.2 below, however it's anticipated that they will remain unaffected by the proposed upgrade to the footpath.

It's recommended that a topographical and GPR survey is undertaken on the existing footpath to establish the true positions and depths of the cables, followed, if necessary, by trial hole investigations.

Figure 5.15.1 – Existing underground 11kV (HV) cables running along the existing public footpath

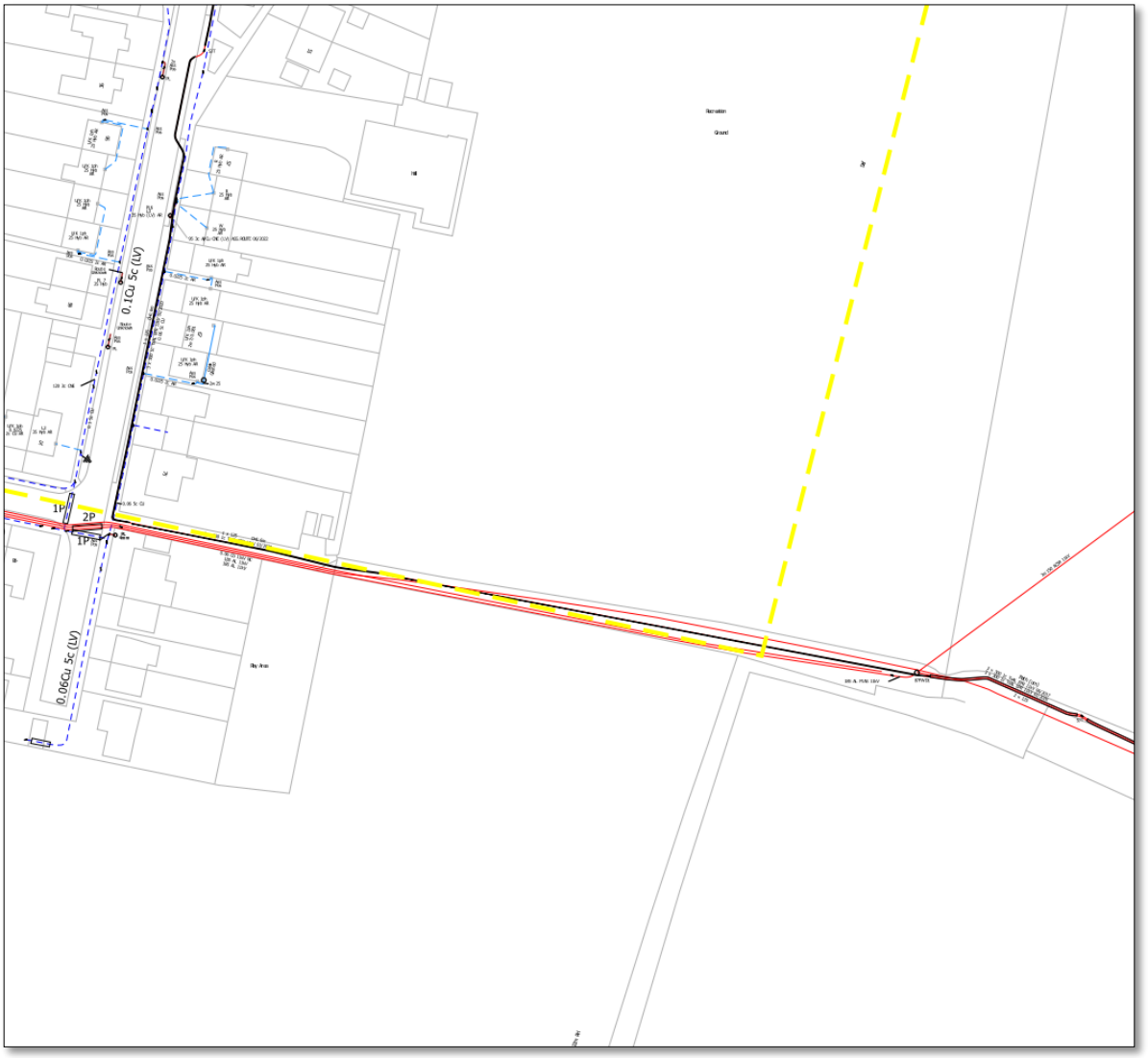
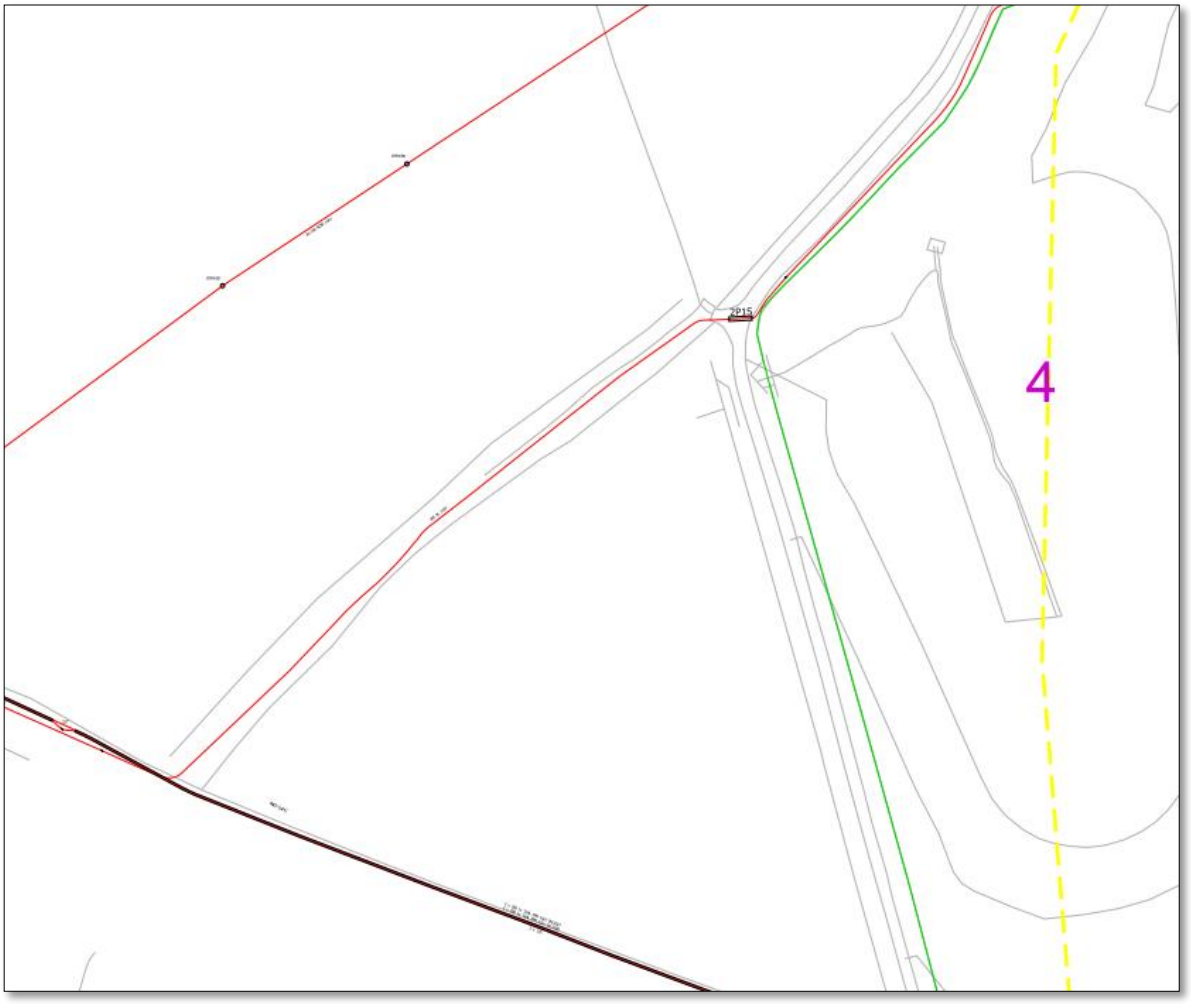


Figure 5.15.2 – Existing underground 11kV (HV) cables running along the existing public footpath



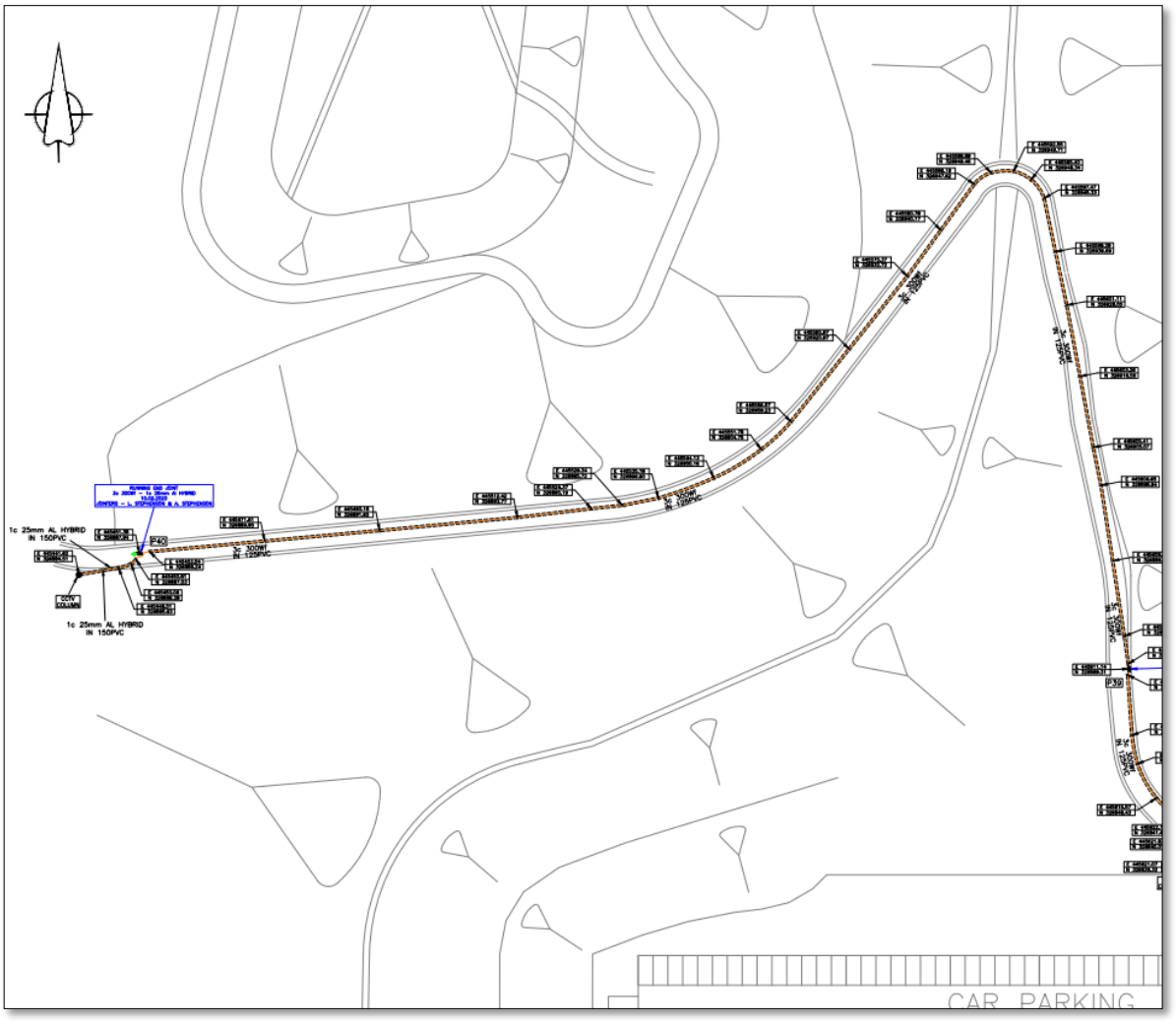
ELECTRICITY – UK POWER DISTRIBUTION

LV NETWORK – UNDERGROUND LV CABLE

The UK Power Distribution asset record indicates there is an existing underground LV cable which supplies an existing CCTV column located at the end of Wilders Way as shown in figure 5.15.4 below, however its anticipated that it will remain unaffected by the proposed upgrade to the footpath.

It's recommended that a topographical and GPR survey is undertaken on the existing footpath to establish the true position and depth of the cable, followed, if necessary, by trial hole investigations.

Figure 5.15.4 – Existing underground low voltage cable to the existing CCTV column



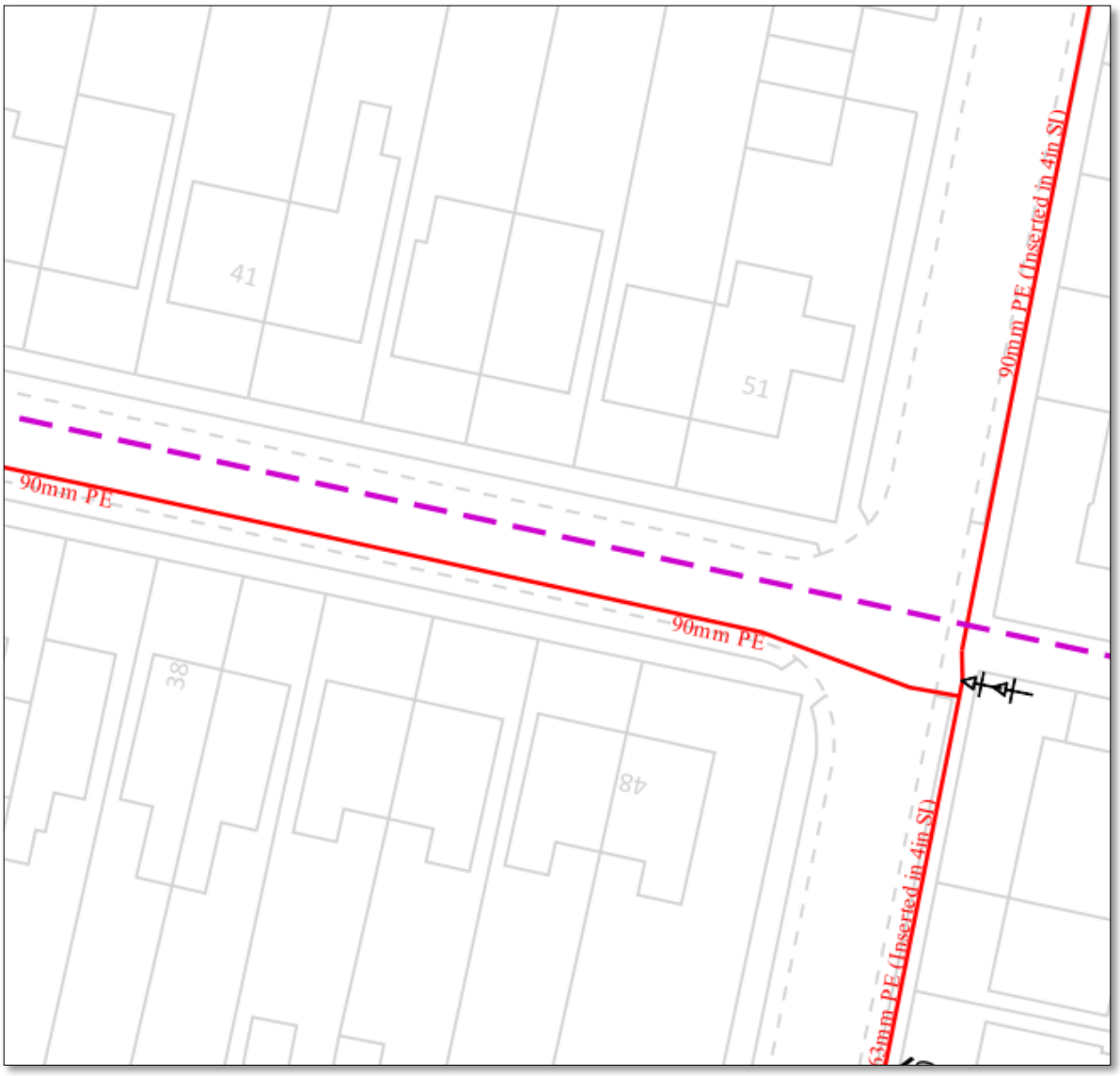
GAS – CADENT GAS NETWORKS

MEDIUM PRESSURE NETWORK – 90MM LOW PRESSURE GAS MAIN

The Cadent Gas Networks asset record indicates there is an existing underground 90mm PE low pressure gas main which runs along the public footpath from Moira Dale as per figure 5.15.4 below, however anticipated that it will remain unaffected by the proposed upgrade to the footpath.

It's recommended that a topographical and GPR survey is undertaken on the existing footpath to establish the true positions and depths of the main, followed, if necessary, by trial hole investigations.

Figure 5.15.4 – Existing underground 90mm PE low pressure gas main in Moira Drive



TELECOMS – OPENREACH

DUCTED NETWORK

The Openreach asset record indicates there are existing underground ducts and chambers in the footpath of Moira Dale as per figure 5.15.5 below, however its anticipated that they will remain unaffected by the proposed upgrade to the footpath.

It's recommended that a topographical and GPR survey is undertaken on the existing footpath to establish the true positions and depths of the main, followed, if necessary, by trial hole investigations.

Figure 5.15.5 – Existing underground ducts and chamber in Moira Drive

6. NEW INFRASTRUCTURE

DEVELOPMENT LOAD SCHEDULE

The table below provides details of the capacities that should be used for the new mains infrastructure.

Unit	sqft	Electricity kVA	Gas kwh	Water L/s
Unit 01	802,000	5750	4617	3.0
Unit 02	205,800	1500	1705	1.0
Unit 3A	390,800	2500	2149	2.0
Unit 3B	192,600	1500	1497	1.0
Unit 04	310,700	2000	1574	1.2
Unit 5A	371,300	3000	992	2.0
Unit 5B	330,100	2000	2144	1.8
Unit 06	333,900	2250	1574	1.3
Landlords	-	1500	-	-
Total	**2,937,000**	**22,000**	**16,252**	**13.3**

6.1. ELECTRICITY POINT OF CONNECTION (NON-CONTESTABLE)

NGED have provided a Point of Connection offer under reference **4504052.**

DEVELOPMENT LOAD SCHEDULE

An electrical import supply capacity of 22,000kVA has been requested from NGED as detailed in the table above.

The offer excludes allowance for export/generation.

POINT OF CONNECTION

NGED have provided a Point of Connection from existing 33kV EHV network at Toton Bulk Supply Point.

NON-CONTESTABLE WORKS

As part of the non-contestable works NGED are responsible for the following:

- Installation of a new 33,000V IDNO boundary circuit breaker on a new 3-panel switchboard at Toton.
- Diversion of GT interplant cable and the installation of a 33kV busbar interconnector.
- Completion of a 33,000V indoor switchgear termination.

REINFORCEMENT WORKS

- ECCR payment towards to GT replacement at Toton Bulk Supply Point

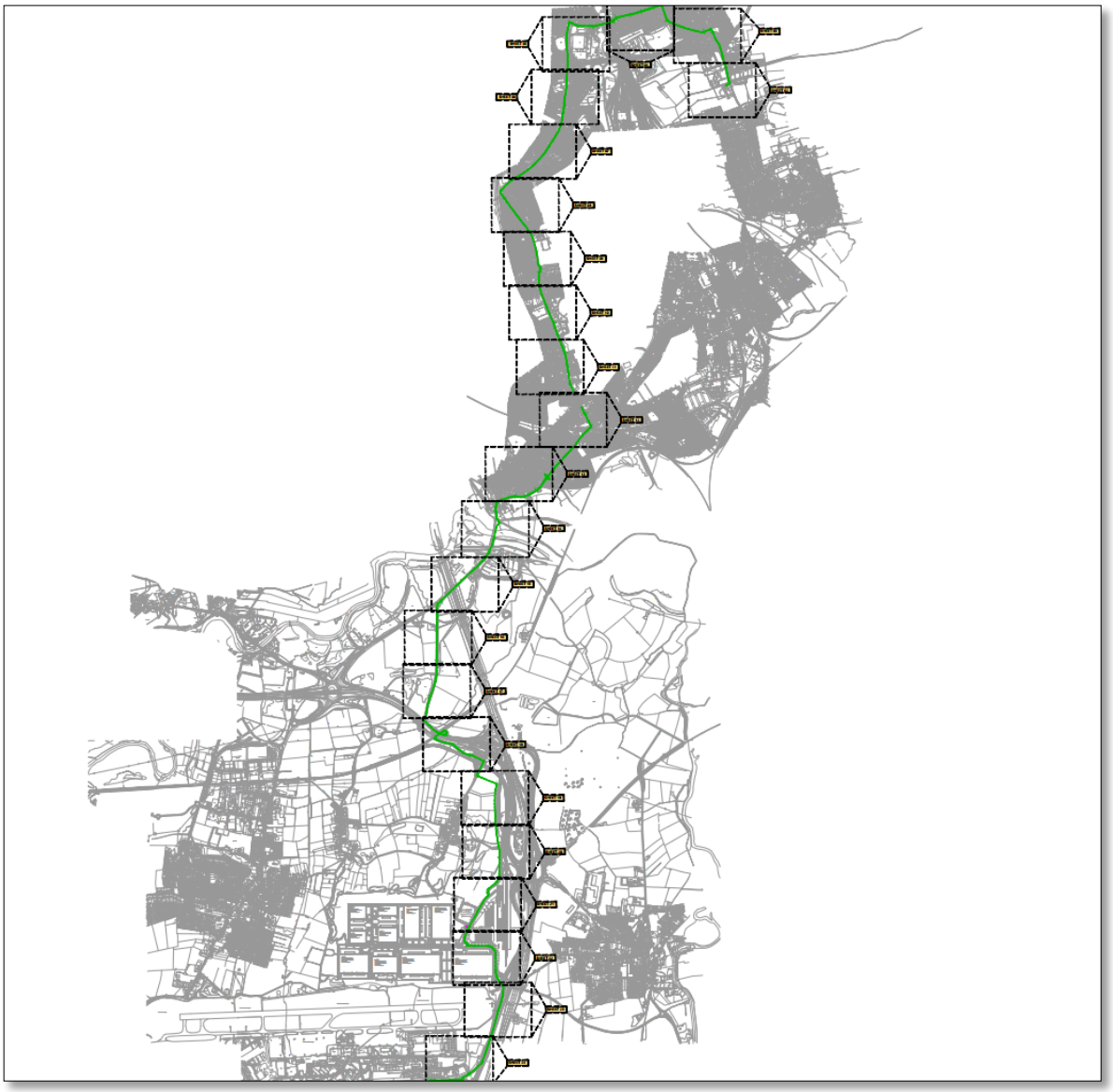
6.2. ELECTRICITY – NEW CONNECTION (CONTESTABLE)

OFFSITE ROUTE (33,000 VOLT NETWORK)

The installation of 1no. 33kV Extra High Voltage cable will be required from the new IDNO boundary circuit breaker at Toton Bulk Supply Point to a new 33kV switchboard within the compound of the EMG1 Primary Substation.

The proposed route for the new 33kV Extra High Voltage cable can be seen in figure 6.2.1 below.

Figure 6.2.1 – Proposed cable route for the new 33kV cable from Toton BSP to EMG1 Primary Substation

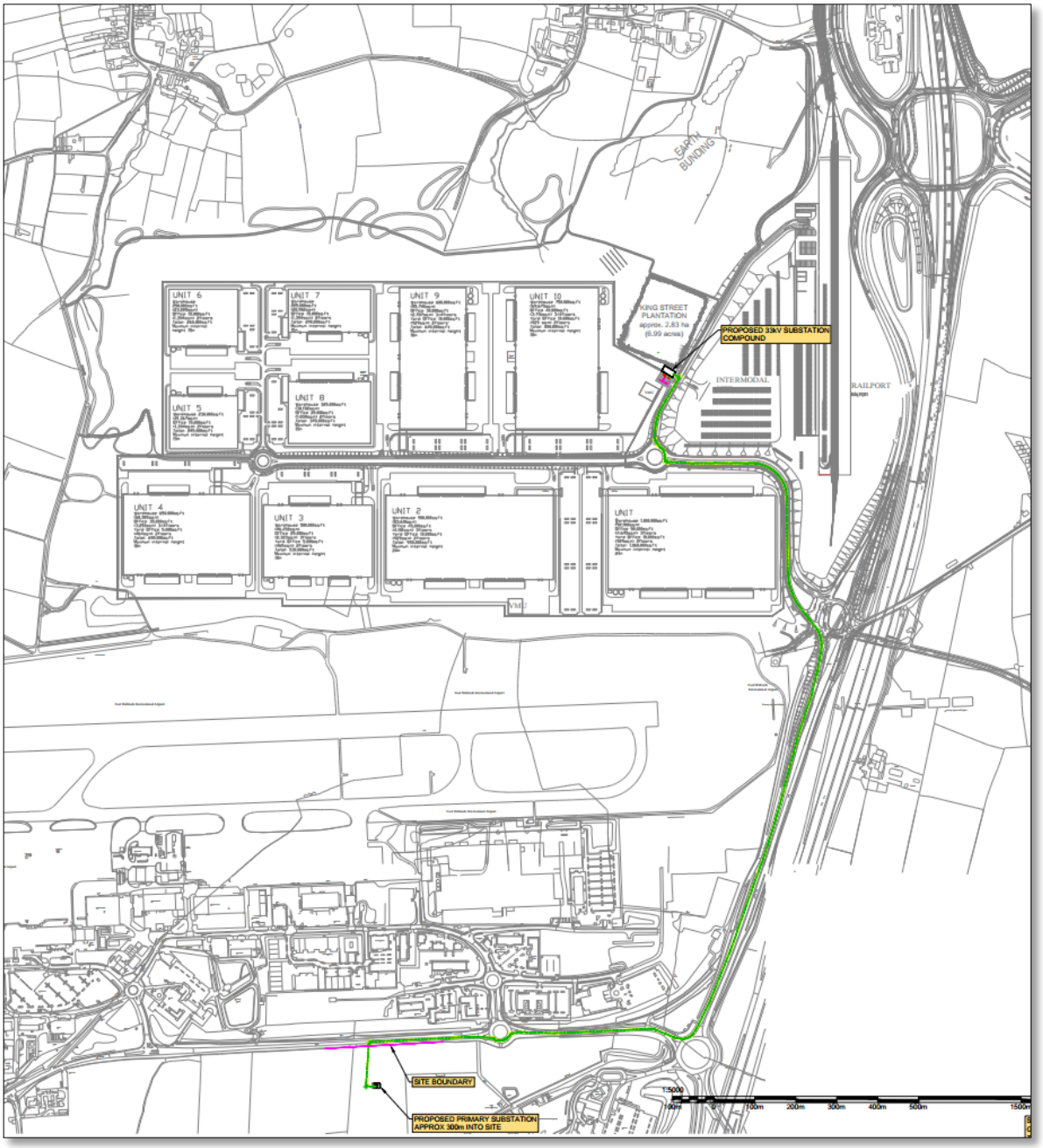


OFFSITE ROUTE (33,000 VOLT NETWORK)

The installation of 2no. 33kV Extra High Voltage cables will be required from the new 33kV switchboard within the compound of the EMG1 Primary Substation to a new 33kV/11KV Primary Substation within the EMG2 development boundary.

The proposed route for the new 33kV Extra High Voltage (EHV) cables can be seen in figure 6.2.2 below.

Figure 6.2.2 – Proposed cable route for the new 33kV cables to the new 33kV/11kV Primary Substation for EMG2



ONSITE HV & LV MAINS INFRASTRUCTURE

From the new IDNO 33kV / 11kV primary substation, multiple 11kV HV circuit breakers will be installed to serve multiple 11kV HV circuit's within the EMG2 development. 11kV HV mains will be installed within the spine road infrastructure for the scheme to serve all unit's intended as well as provision for landlords' substations and LV to serve all intended street lighting, street furniture and pumping stations required.

6.3. WATER POINT OF CONNECTION

Severn Trent Water have provided a pre-development report under reference **1121138**.

SITE LOAD

A peak flow rate of 13.3 litres per second has been requested from Severn Trent Water as detailed within the table above.

POINT OF CONNECTION

The Point of Connections identified by Severn Trent Water are from the existing 12inch SI main which runs down the verge of A453 Ashby Road as indicated by figure 6.3.1 below, it has been confirmed that there is sufficient capacity within the main to support the requested flow rate of 13.3 litres per second.

NON-CONTESTABLE WORKS

- Design Approval and Inspection
- Connections onto the existing 12inch SI main in A453 Ashby Road

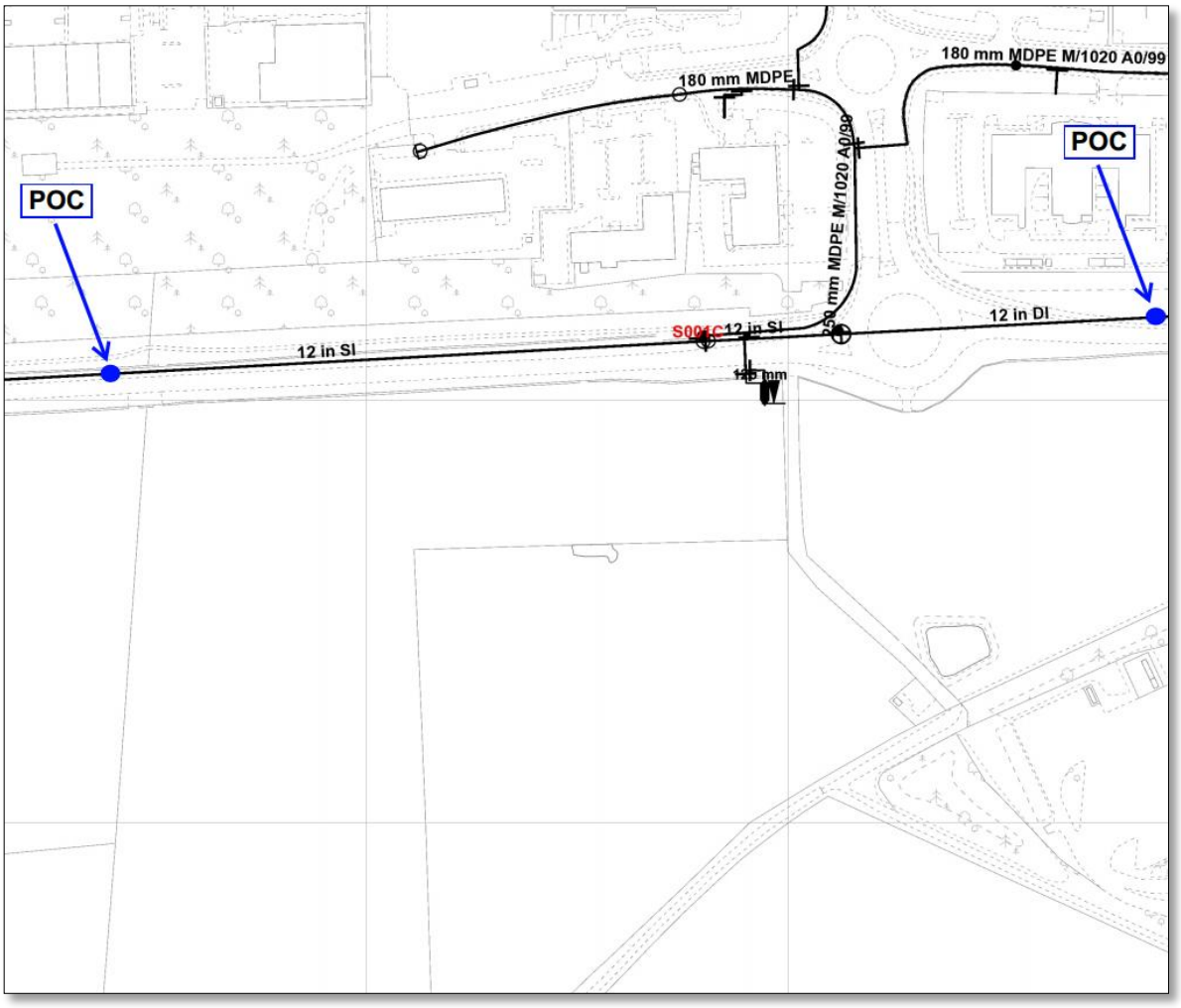
CONSTRAINTS

- Installation of the new mains and services across A453 Ashby Road.
- Coordination of the installation of the new mains and services across A453 Ashby Road with the S278 works.

FIRE FIGHTING REQUIREMENTS

No specific firefighting requirements have been considered at this time with the exception of new fire hydrants which will be installed onsite as part of the new mains infractructure, if firefighting supplies are required for any of the proposed unit's on site we will requied confirmed flow rates to ensure the mains are correctly sized.

Figure 6.3.1 – Existing 12inch SI water main in A453 Ashby Road



6.4. WATER – NEW CONNECTION (CONTESTABLE)

OFFSITE ROUTE

The POC's have been determined from the existing 12inch SI main position in the verge of A453 Ashby Road to the north of the site approx. 20 metres from the site boundary.

ONSITE POTABLE WATER NETWORK

Extension of network will be required onsite to provide connections to each plot for the potable water supplies using a minimum of a 180mm PE main to meet the required flow rate of 13.2 litres per second for the main development.

The site is assumed to be uncontaminated and the installation of the non-barrier pipework has been assumed, however a full SI report will need to be issued to Severn Trent Water to assess before they issue a formal Point of Connection offer.

Figure 6.4.1 – Indicative onsite water distribution

6.5. GAS POINT OF CONNECTION

Cadent Gas networks have provided a land enquiry response under reference **180015289**.

SITE LOAD

A peak demand of 16,252kWh has been requested from Cadent Gas Networks as detailed within the table above.

Elevated pressure has not been accounted for as part of the land enquiry, however it should be noted that there is sufficient Medium Pressure network within the area to facilitate this if required.

POINT OF CONNECTION

The Point of Connections identified by Cadent Gas are from the existing 315mm PE and 250mm PE Medium Pressure gas mains which run down the verge of A453 Ashby Road as indicated by figure 6.5.1 below, it has been confirmed that there is sufficient capacity within these mains to support the requested demand of 16,252kWh.

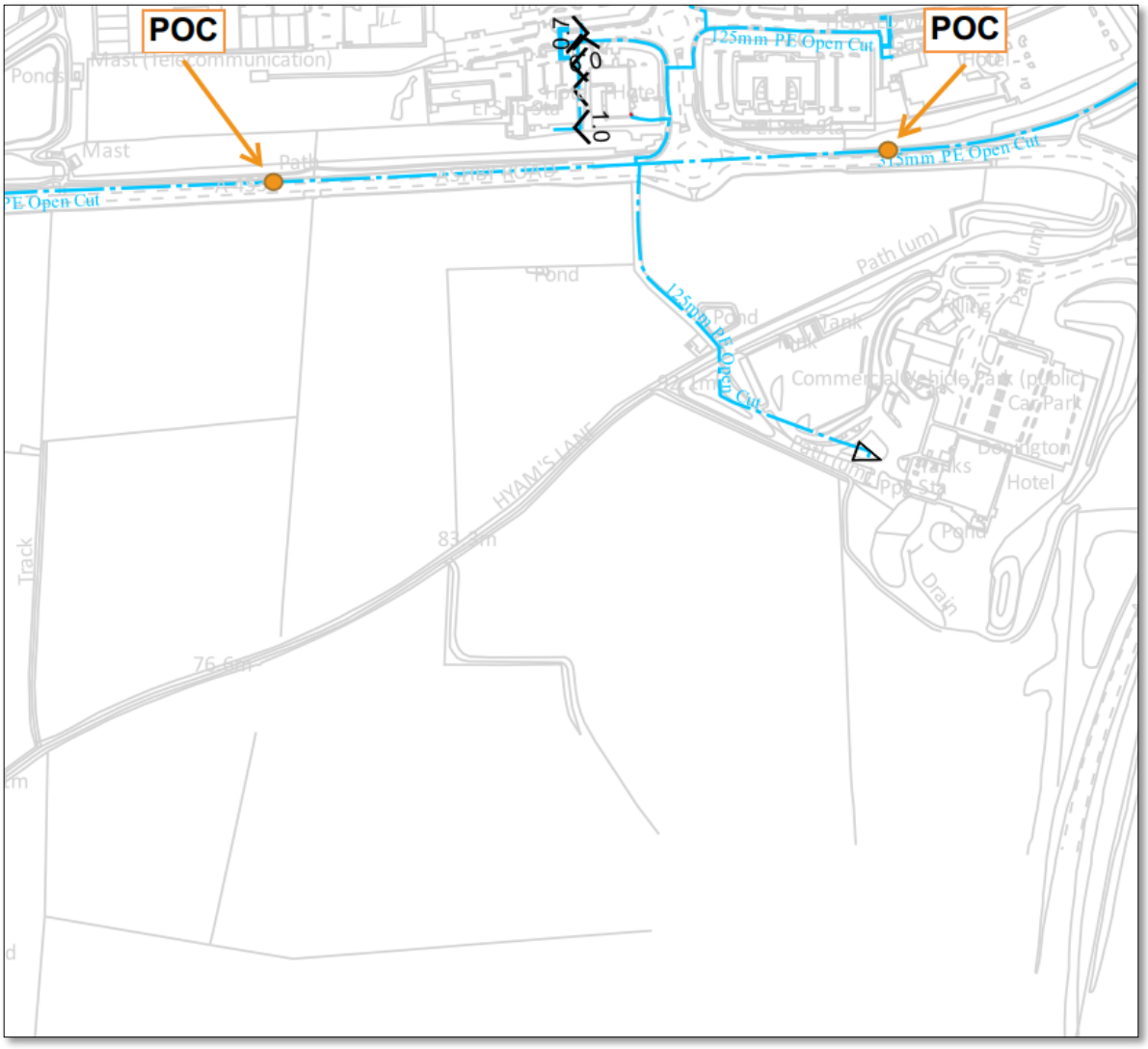
NON-CONTESTABLE WORKS

- Design Approval and Inspection
- Connections onto the existing 315mm PE and 250mm PE Medium Pressure gas mains in A453 Ashby Road

CONSTRAINTS

- Installation of the new mains and services across A453 Ashby Road.
- Coordination of the installation of the new mains and services across A453 Ashby Road with the S278 works.

Figure 6.5.1 – Existing 250mm PE and 315mm PE Medium Pressure gas mains in A453 Ashby Road



6.6. GAS – NEW CONNECTION (CONTESTABLE)

OFFSITE ROUTE

The POC's have been determined from the existing 315mm PE and 250mm PE Medium Pressure gas mains in the verge of A453 Ashby Road to the north of the site approx. 20 metres from the site boundary.

ONSITE MAINS NETWORK

Extension of network will be required onsite to provide connections to each plot for the gas supplies using a minimum of a 250mm PE main to meet the required demand of 16,252kWh for the main development.

Figure 6.6.1 – Indicative onsite gas distribution

6.7. TELECOMS – NEW CONNECTION

Based on the Openreach asset records there are existing underground ducts and chambers positioned in the verge of the A453 Ashby Road as shown in figure 6.7.1 below, it's anticipated that new ducts will be installed across A453 Ashby Road and a new chamber installed in the verge to serve as the connection point to the proposed development.

Openreach now charge for installation of Fibre & Copper networks and will only provide an FTTP installation (Fibre to The Premises) as part of the new site application. This will need to be considered with and requirement for leased lines (Ethernet)or copper (FTTC) being an extra over to the standard Newsites application.

Figure 6.7.1 – Telecoms Point of Connection