

Argosy Drive

Utilities Strategy

60663052-ACM-ArA2-XX-RP-BS-00001

Threadneedle Curtis Ltd

18 March 2022

Quality information

Prepared by	Checked by	Verified by	Approved by
			
Sam Ashcroft Engineer	Steve Lees Principal Engineer	Leigh Groves Technical Director	Vin Bamford Technical Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position
1	14/04/2022	For Issue	Yes	Vin Bamford	Technical Director

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0	Y	Adam Austin / Workman

Prepared for:

Threadneedle Curtis Ltd

Prepared by:

Jack Lee
Senior Engineer
M: D +44 7990 074 193
E: jack.lee@aecom.com

AECOM Limited
1 New York Street
Manchester M1 4HD
United Kingdom

T: +44 161 601 1700
aecom.com

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1. Introduction

Threadneedle Curtis Ltd (Legal Entity) also known as Columbia Threadneedle Investments (CTI) have commissioned AECOM to prepare a utilities strategy for a proposed logistics development on the site of Argosy Drive, west of Viscount Drive. Along Argosy Drive there is an empty Building 305 that has been approved for demolition, a car park, Building 311, Building 304 which contains pumping station 6 control panel on the Argosy Drive side and 4 freight and logistics units on the York Drive side, and Building 303.

An outline masterplan for the site has been provided by RPS, ref 020867-RPS-SI-XX-DR-A-9039, showing three new units:

Unit 1 comprises a 65,000sq ft warehouse building which is split into 8 units with individual integral office Space. Office space is assumed to comprise of 15% of the overall gross internal floor area GIFA for the purpose of this Utilities Strategy.

Unit 2 comprises a 46,000sq ft warehouse building which is split into 4 units with individual integral office Space. Office space is assumed to comprise of 10% of the overall gross internal floor area GIFA for the purpose of this Utilities Strategy.

Unit 3 comprises a 33,000sq ft warehouse building which is split into 3 units with individual integral office Space. Office space is assumed to comprise of 10% of the overall gross internal floor area GIFA for the purpose of this Utilities Strategy.

This initial assessment will be undertaken on the basis of demand for the building as a whole. A 5% uplift allowance will be made in the demand calculations with the assumption that there may be nominal increases for the individual units based on tenant requirements.

CTI have been assigned utilities capacity by MAG to be services from the existing MAG networks as part of the land sale agreement. An assessment will be made of expected demand against committed capacity.

2. Site Location

Argosy Drive Developments are located on Argosy Drive within the global logistics area at Manchester airport. The site is bound by York Drive to the north, Viscount Drive to the east, Avro Way to the south and Runger Lane to the west. The Site is situated within a predominately urban area and comprises industrial units, offices and roads

3. Utilities Strategy

The following utilities strategy has been prepared based on the following maximum areas for each unit associated with the Argosy Drive Development:

Unit 1 - 65,000sqft of building footprint

Unit 2 - 46,000sqft of building footprint

Unit 3 - 33,000sqft of building footprint

3.1 Demand Calculations

Demand calculations have been prepared in line with the CIBSE guidance assuming warehouse and office use with 15% of unit 1 area being allocated as Office space, and 10% of Unit 2 and unit 3 footprints allocated as office space.

A 20% additional demand has been assumed within the power load for future EV charging requirements.

The following demand loads are estimated for the proposed Argosy Drive development:

Unit 1

Power = 577kVA

Gas – N/A - calculated at 44m³/hr if required

Water = 0.83 l/s

Foul = 0.852l/s

Unit 2

Power = 316kVA

Gas – N/A - calculated at 32m³/hr if required

Water = 0.49 l/s

Foul = 0.546 l/s

Unit 3

Power = 233kVA

Gas – N/A - calculated at 23m³/hr if required

Water = 0.35 l/s

Foul = 0.565 l/s

3.2 Power

MAG Utilities have advised that there is insufficient spare capacity on the existing HV ring that currently supplies the area. Therefore, it will not be possible to connect the new substation into the existing ring on site. As such a new ring, or an alternate approach will need to be established. This solution has not yet been agreed and may be subject to a separate project to increase capacity in the area.

The power supply to the Argosy development will be delivered in 3 phases.

Phase 1 - Divert HV to avoid new unit 1 construction

In the first phase, unit 1 of the development will be constructed, and a new substation also constructed to the north end of the site. Units 1, 2 and 3 are proposed to be served from the new substation, and sufficient space will need to be allowed to supply all 3 buildings.

It is proposed that each individual tenanted unit within the building(s) will have it's own incoming Low Voltage supply from the sub station (8 No.). The Low Voltage supplies will be routed through a pit and duct system to the front of the units.

The existing HV ring that is currently routed along Argosy Drive will be within the boundary of the new site, and as such will need to be diverted. This will need to be considered along with the proposal to provide access to the rear of the existing buildings.

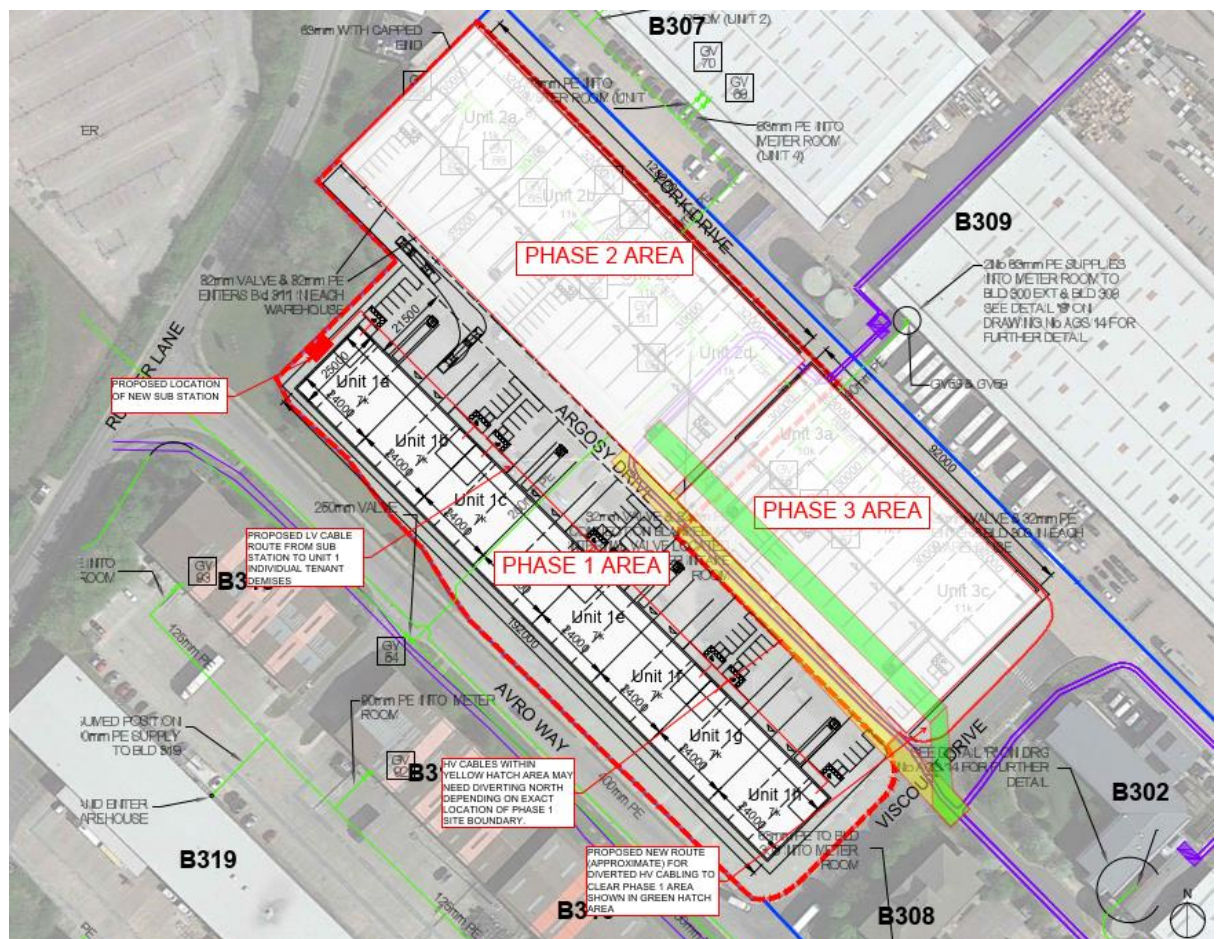


Figure 1 - Phase 1 Proposed HV supply

Phase 2 - Divert HV to avoid new unit 2 construction

The second phase of the works will involve the demolition of EXISTING buildings to make way for the new unit 2. The new unit will also be fed at Low Voltage from the new sub station, with individual feeds to each tenants demise, a total of 4 No. for unit 2.

The existing HV ring will need to be diverted as unit 2 is currently proposed to be built on the HV route. It is proposed to create a new route through the phase 3 site, which will then connect to the HV route already diverted under phase 1 of the works along argosy drive.

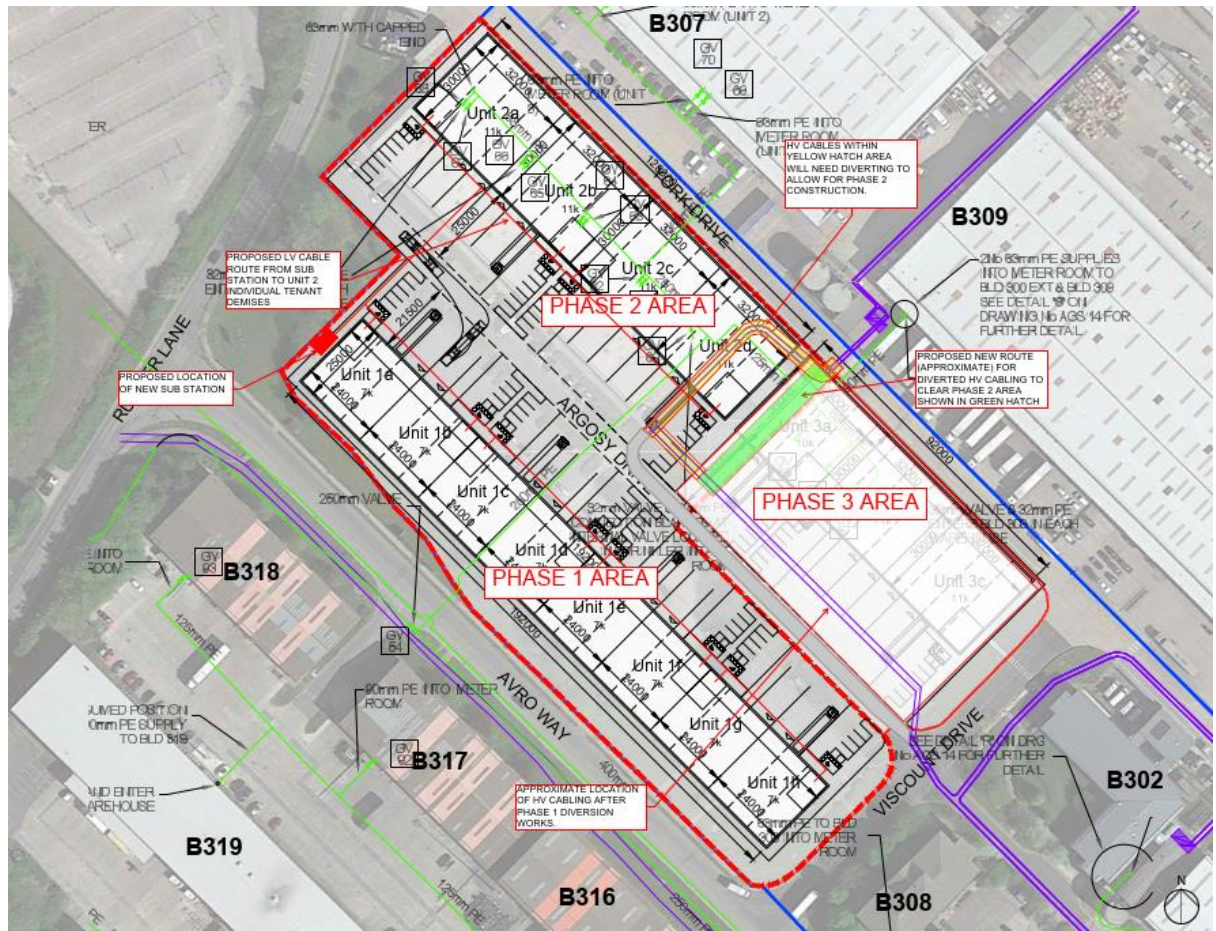


Figure 2 - Phase 2 Proposed HV supply

Phase 3 - Divert HV to avoid new unit 3 construction

The Third phase of the works will involve the demolition of further buildings, to make way for new unit 3. The new unit will also be fed at Low Voltage from the new sub station, with individual feeds to each tenants demise, 3 No. for unit 3.

The existing HV ring will need to be diverted as unit 3 is currently proposed to be built on the HV route. This will require diversion of the HV ring cables along York drive to the junction of Viscount drive, where it can be jointed in the verge adjacent to building 302. Further joints will be required at the junction of Viscount Drive and Argosy drive to complete the existing ring circuit.



2 No. 1MVA transformers will be provided in the new sub-station and this will provide the supply to the new facilities. The estimated load for the new development, i.e. units 1, 2 and 3 is 1.690kVA

For the purposes of this report, it is assumed that the warehouse will be unheated and that the offices will be provided with all electric heating systems. The market is currently moving away from gas fired heating to electric, via various heating systems such as Ground source heat pumps, air source heat pumps, etc. This is to align with the Net Zero carbon aspirations set out by the government. In the event that the Warehouse does need to be heated, then this will significantly increase the electrical load for the building.

3.3 Gas

Phase 1 - Divert to avoid new unit 1 construction

Gas is to be provided to the development via Manchester Airports Prime 2 Gas Network. There is an existing gas supply pipe in Avro Way adjacent to the proposed site which serves existing units in the vicinity of the proposed works. The existing gas is routed through the proposed unit 1 location so will need to be diverted to allow for construction works to take place. As such it is proposed to provide a new diverted gas route from the gas main in Avro way, through Viscount drive and then Argosy way to serve the existing units which will remain in situ during phase 1 of the works. This main will need to be suitably size to cater for Phases 2 and 3 of the development, as described later.

The existing gas pipework route can then be stripped out to allow the construction to take place during phase 1. It is proposed to install a valved connection point to the gas main for potential future gas requirements on the site, though currently there is no intention to supply gas to the units.

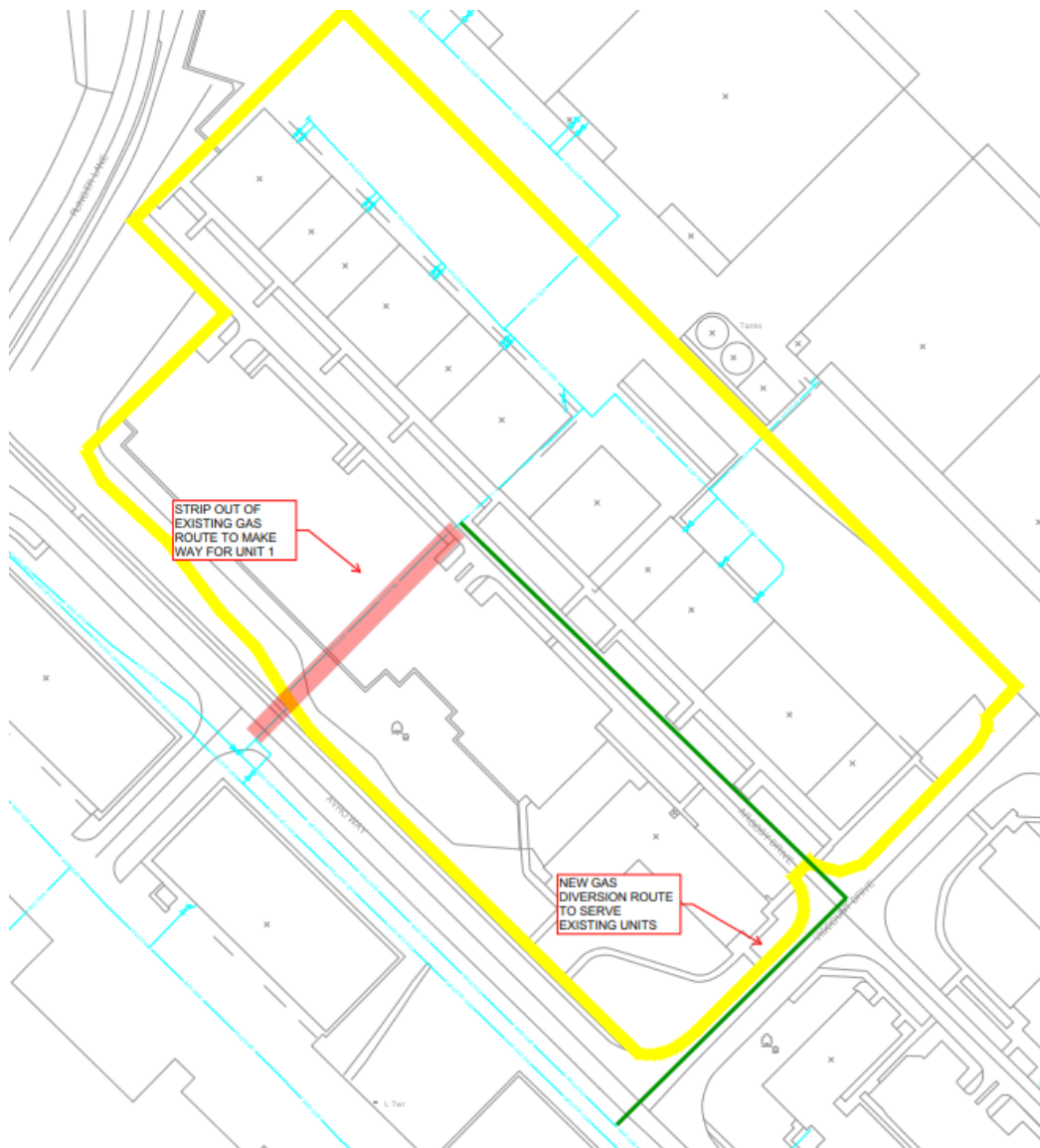


Figure 4 – Phase 1 Proposed Gas supply

Phase 2 – Divert around unit 2

In phase 2 a further section of existing gas pipework will need to be stripped out to make way for the proposed construction of units 2 (& 3). In this phase the diversion route would be needed to be extended further through Viscount Drive and then down York Drive to re-serve retained existing units to the rear of the development.

The recently installed gas main in Argosy way could then be retained for potential use by any Argosy way tenants who require gas in future. It is proposed to install a valved connection point to the gas main for potential future gas requirements on the site, though currently there is no intention to supply gas to the units.

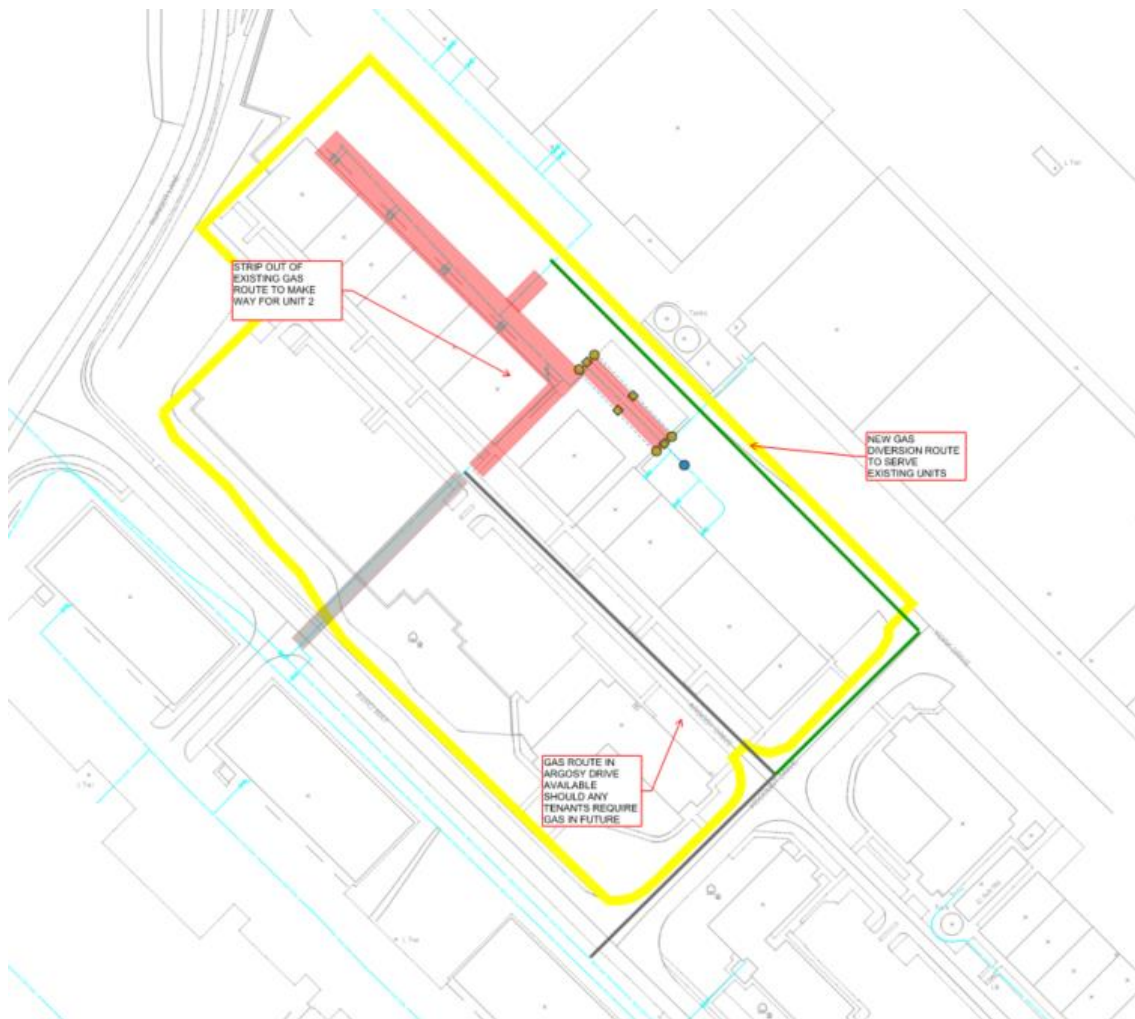


Figure 5 – Phase 2 Proposed Gas supply

Phase 3 – Remove existing redundant Gas amins

In phase 3, further sections of the existing gas pipework will need to be stripped out to make way for the proposed construction of unit 3. There is no requirement for further diversion works, as this was undertaken in Phase 2.

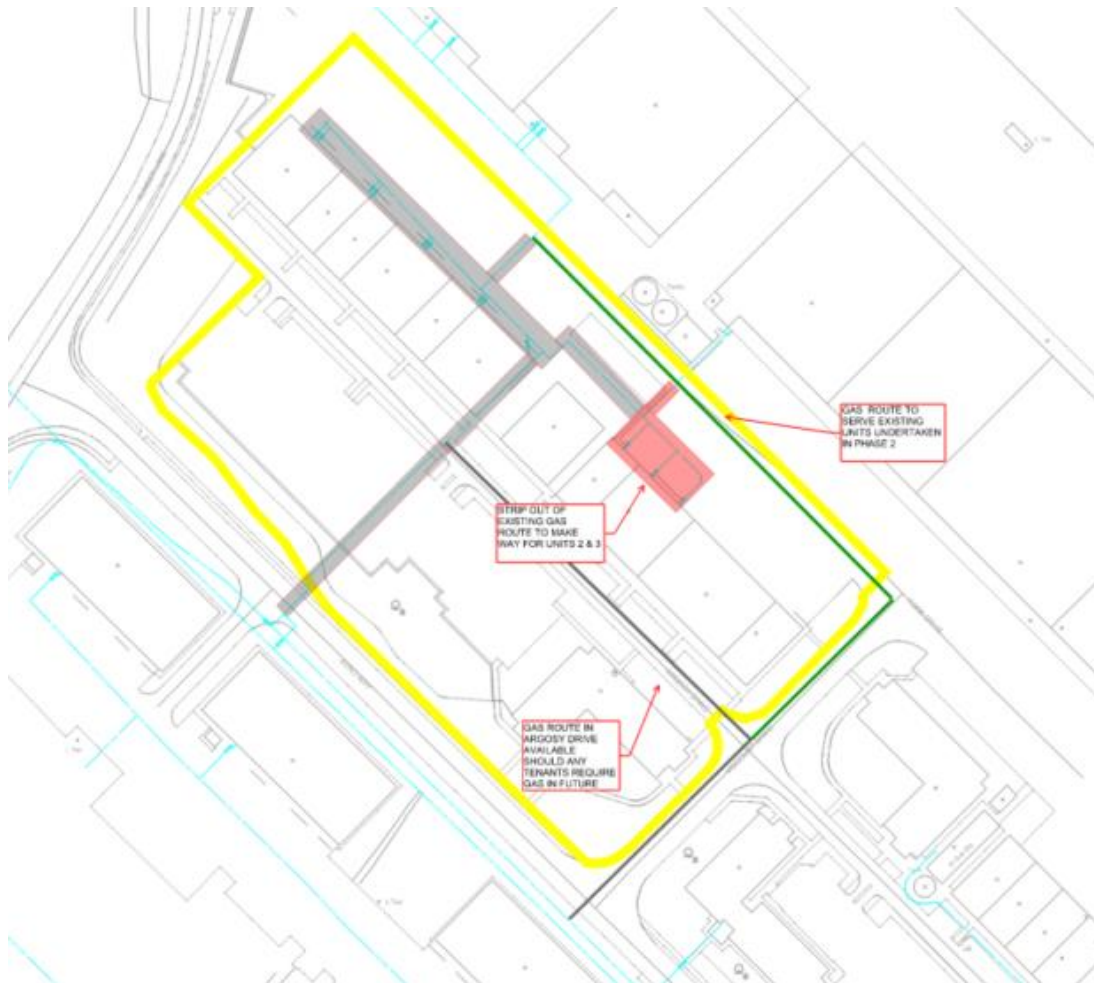


Figure 6 – Phase 3 Proposed Gas supply

3.4 Water

Phase 1 – Water supplies to Unit 1

An existing potable water supply from MAG Utilities is available adjacent to the site located in Avro Way. A section of water pipework is located in the area of the proposed unit 1 construction so will need to be stripped back as part of the demolition works but this doesn't appear to serve other areas. It is proposed to provide water to the new unit 1 development from the existing water main in Avro way, this will need to be routed through Viscount Drive and then through Argosy way where it can branch to serve connections to each of the tenanted units as part of unit 1.

This new ring main will need to be sufficiently sized to serve units 2 & 3 in future as described later.

The existing site is not currently serviced by fire hydrants. To meet current standards and the safeguarding requirements of the airport it is expected that new hydrant provision to the proposed development will likely be required. It is proposed that a new hydrant main is installed from the existing MAG main distribution main in Avro Way. To meet the requirements of the MAG Asset standards this will need to be installed as a ring main connection with the main starting and terminating at the distribution main in Avro Way.

The location for the proposed connection points are shown below.

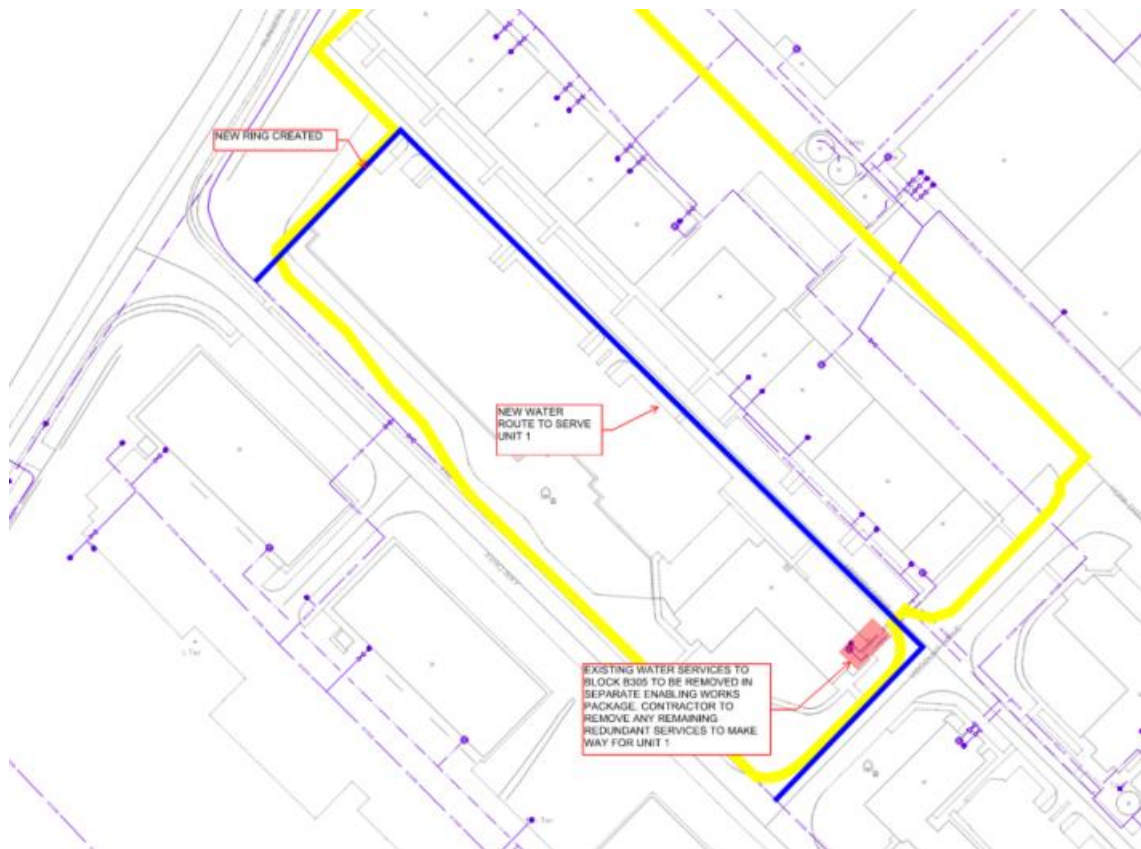


Figure 7 – Phase 1 Proposed Water supply

Phase 2 – Water supplies to Units 2

The new potable water supply along Argosy way installed as part of Phase 1 works can then be utilised to make new connections to serve the proposed Unit 2 tenanted units.

Existing redundant water mains serving the buildings to be demolished in Phase 2 will need to be stripped back to the nearest branch connection. No dead legs are to be left on the system.

To meet current standards and the safeguarding requirements of the airport it is expected that new hydrant provision to the proposed development will likely be required and this is proposed to be served from the new ring main to the site installed under Phase 1 works

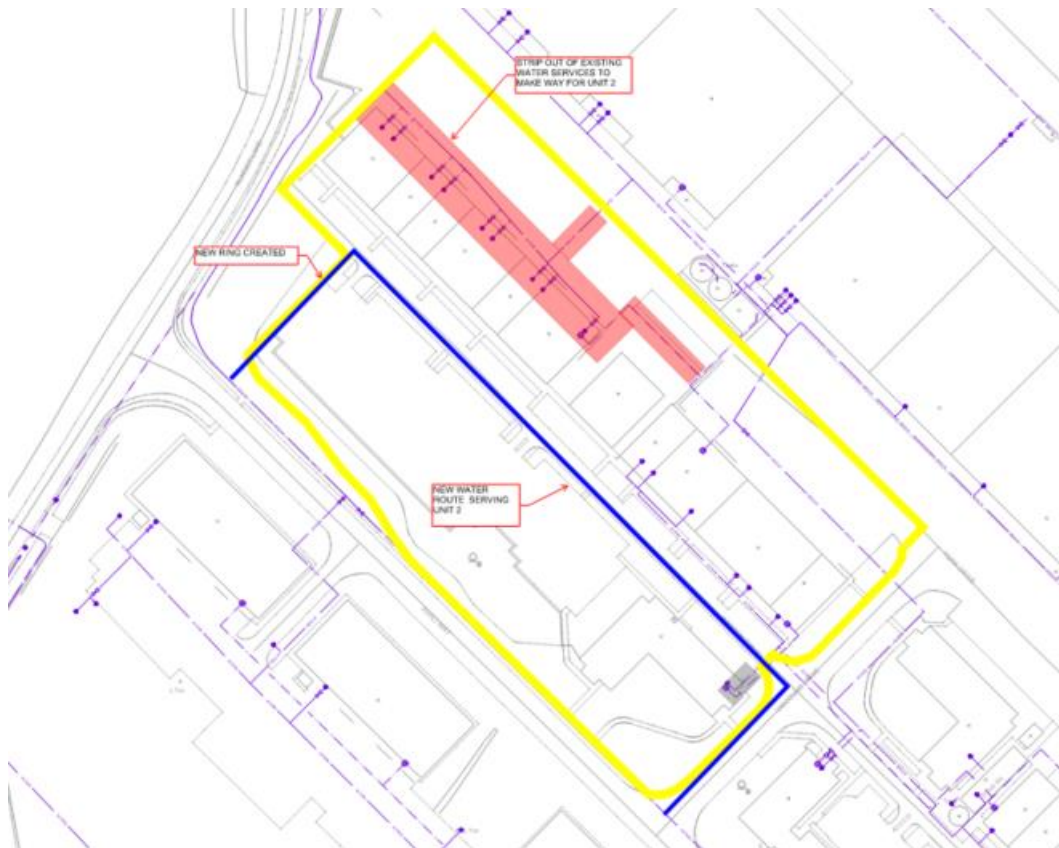


Figure 8 – Phase 2 Proposed Water supply

Phase 3 – Water supplies to Unit 3

The new potable water supply along Argosy way installed as part of Phase 1 works can be utilised to make new connections to serve the proposed Unit 3 tenanted units.

Existing redundant water mains serving the buildings to be demolished in phase 3 will need to be stripped back to the nearest branch connection. No dead legs are to be left on the system.

A further pipeline in this area goes onto serve other areas of the site and would need to be relocated outside of the boundary of the site to continue to serve the existing supply. This proposed diversion would take place in York Drive as shown below.

To meet current standards and the safeguarding requirements of the airport it is expected that new hydrant provision to the proposed development will likely be required and this is proposed to be served from the new ring main to the site installed under Phase 1 works

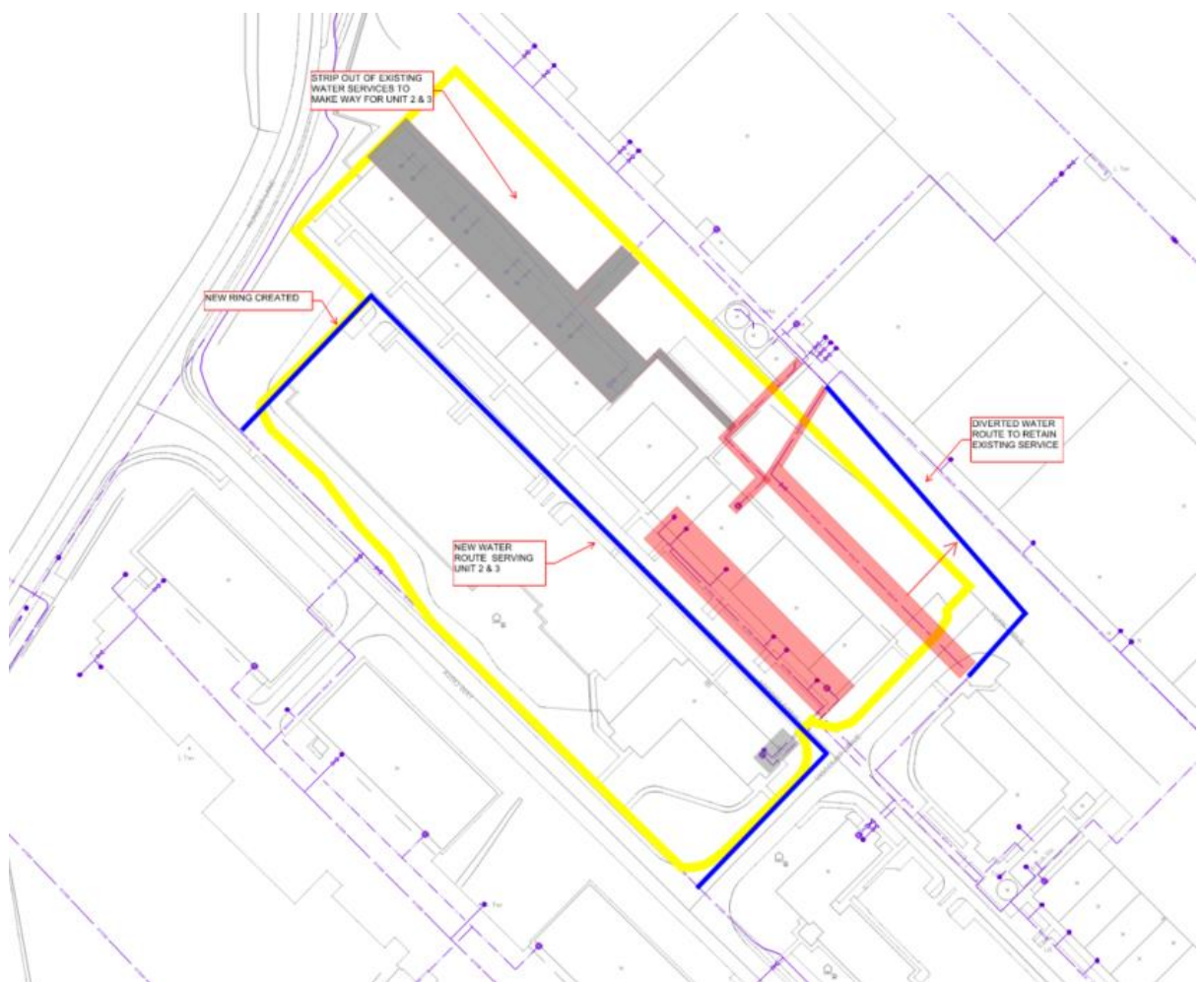


Figure 9 – Phase 3 Proposed Water supply

3.5 Comms

Comms provision will need to be provided via the BT network in Avro Way and Viscount Drive. A pit and duct system is present on Avro Way within the existing verge, and this branches into Viscount Drive. An application will need to be made to BT for the connection. It is anticipated that the applications will be made by the future tenants. Note that, depending on tenant requirements, it may be necessary to provide two diverse comms connections points into the site. This is to be confirmed later in the design stages.

There is a Virgin Media service available in Avro Way, also located in the verge alongside the BT route.

Phase 1 - New Infrastructure to supply new unit 1.

For Phase 1 of the works, it is proposed to install a new connection from the BT chamber located in Viscount Drive. The duct route will extend along the full length of Unit 1 with connections to each tenants demise. There should be no requirement to divert any existing services, assuming that the demolition works for 305 remove the service to this building.

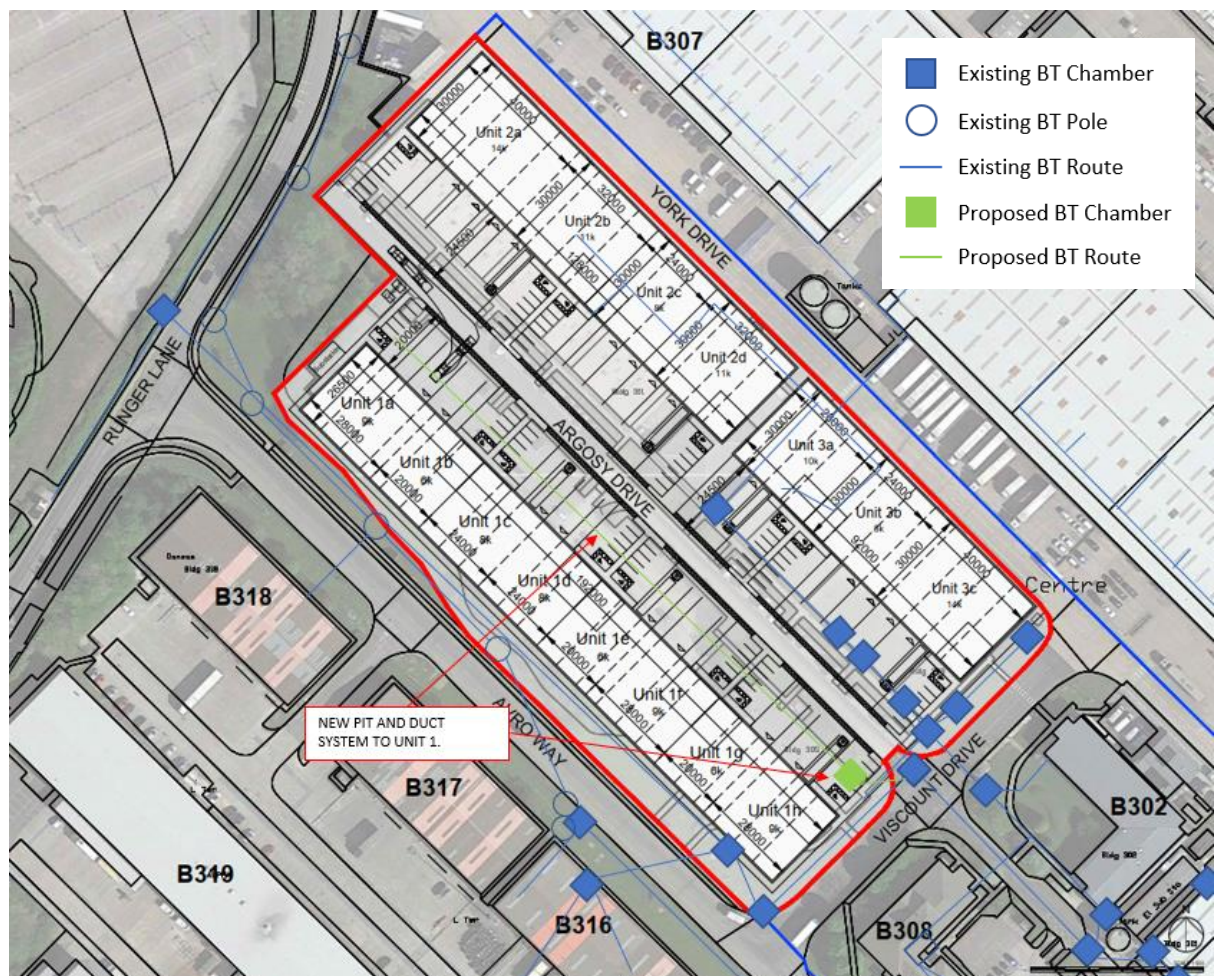


Figure 10 – Phase 1 Proposed Comms Supply

Phase 2 – Provide new and remove redundant BT services for unit 2

For phase 2, it will be necessary to remove some of the existing BT services currently serving the existing (to be demolished) buildings. To serve unit 2, a new pit and duct route will be required, along the frontage of the new unit with connections to each tenants demise.

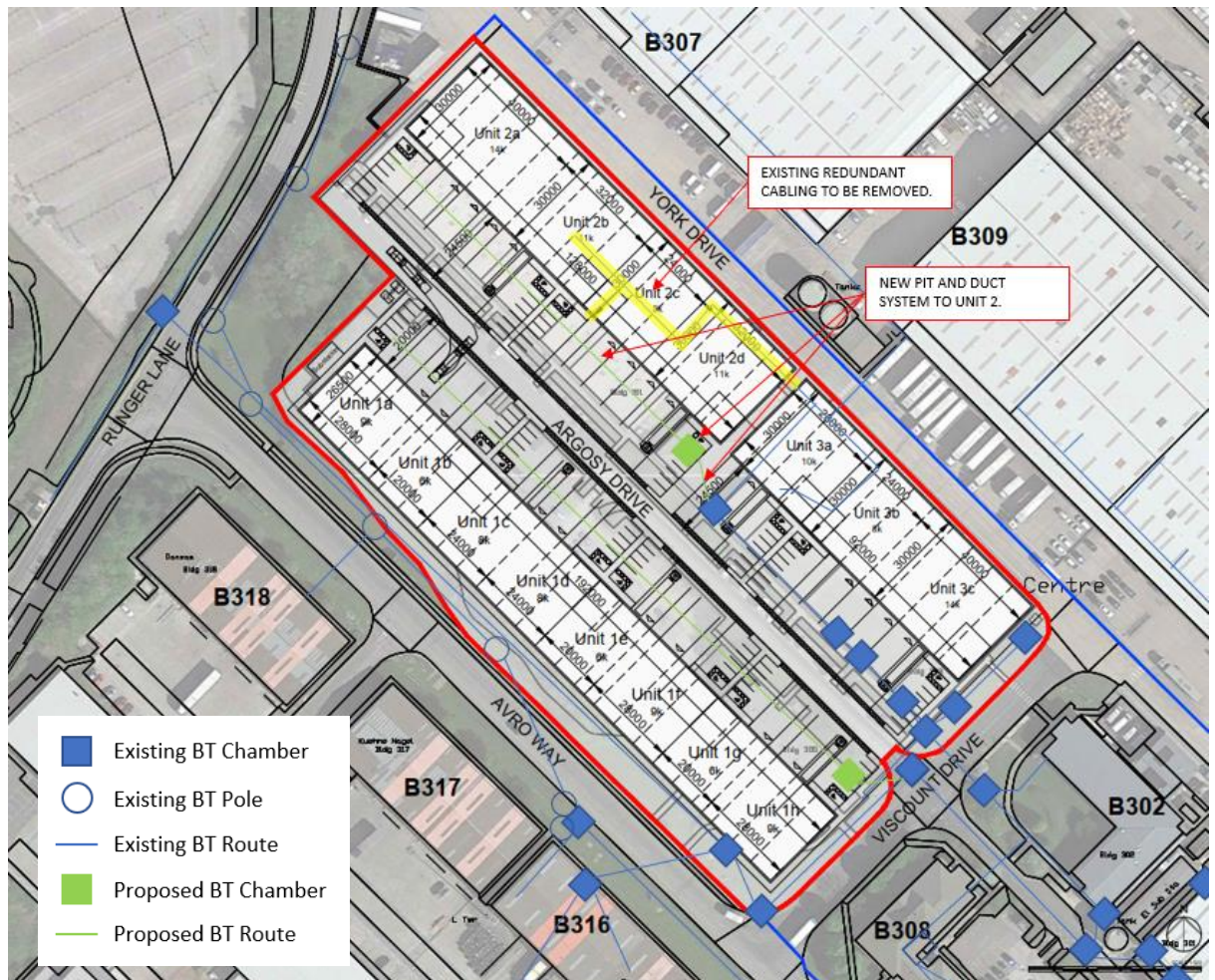


Figure 11 – Phase 2 Proposed Comms Supply

Phase 3 – Provide new and remove redundant BT services for unit 3

For phase 3, it will be necessary to remove some of the existing BT services currently serving the existing (to be demolished) buildings. To serve unit 3, a new pit and duct route will be required, along the frontage of the new unit with connections to each tenants demise. It will also be necessary to create a new duct route along York Drive to link into existing retained Buildings on York drive.

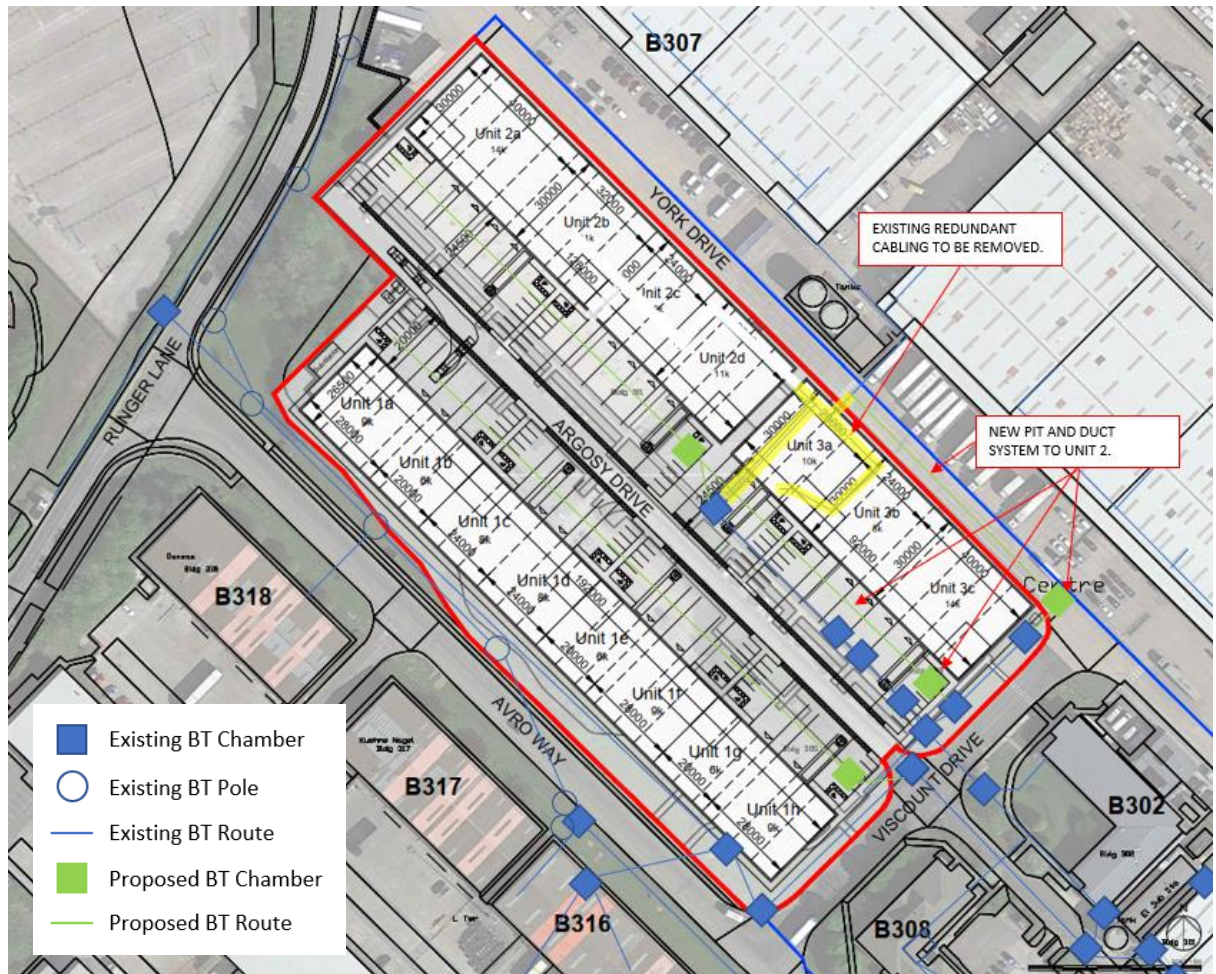


Figure 12 – Phase 3 Proposed Comms Supply

3.6 Existing Utilities

The site is currently fully serviced with all utilities from the adjacent existing networks. Drawings indicating the existing utility service locations are included in appendix A.

A summary of all services serving the existing site is provided as follows:

Low Voltage (LV supplies)

The existing buildings have low voltage supplies from an internal panel supplied from the existing HV transformer at Cargo 3 Substation. It is assumed at this stage that all LV supplies will be isolated and removed as part of the demolition works package. There are a number of external LV supplies to the High Mast Lighting, etc that are potentially fed from the existing sub station or from the existing buildings, which will be retained or removed accordingly.

High Voltage (HV) electric

There are existing HV ring cables from Cargo 3 sub station which will need to be diverted as part of the scope for constructing the new buildings.

Gas

An existing gas supply is present within the site from the Prime 2 network along Avro way as previously detailed. This is to be retained and diverted as required to service the proposed development.

The proposed Unit 1 construction will be located over the gas main to this area in Phase 1 and then Units 2 & 3 in Phase 2, hence the main will need to be diverted through Viscount Drive and subsequently York Drive to avoid the proposed construction site phases. All works must be agreed with MAG Utilities prior to

commencement on site. Protection or diversion works may also be required to existing services affected by the works.

Water

The existing buildings are serviced from the MAG Utilities water main from the airfield side. This supply is to be retained and amended in phases as required to retain services to existing buildings outside of the proposed phases of works.

Comms

An existing comms supply is provided via the MAG network in Avro Way and extending up Viscount Drive. This branches off along Argosy drive and also York drive. It will be necessary to divert some of the existing services and allow for disconnections of the demolished buildings

Appendix A – Existing Utilities Drawings

A.1 Existing Water Main Services



PROJECT

BUILDING ARGOSY -
MANCHESTER
AIRPORT

CLIENT



CONSULTANT

AECOM
5th Floor
1 New York Street
Manchester M1 4HD
United Kingdom
T +44 161 601 1700
F +44 161 601 1700
www.aecom.com

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KEY

Existing Potable Water Supply
from Proposed 401 Building
Utilities

ISSUE/REVISION

P1	07/02/2022	FOR PLANNING
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

S3

PROJECT NUMBER

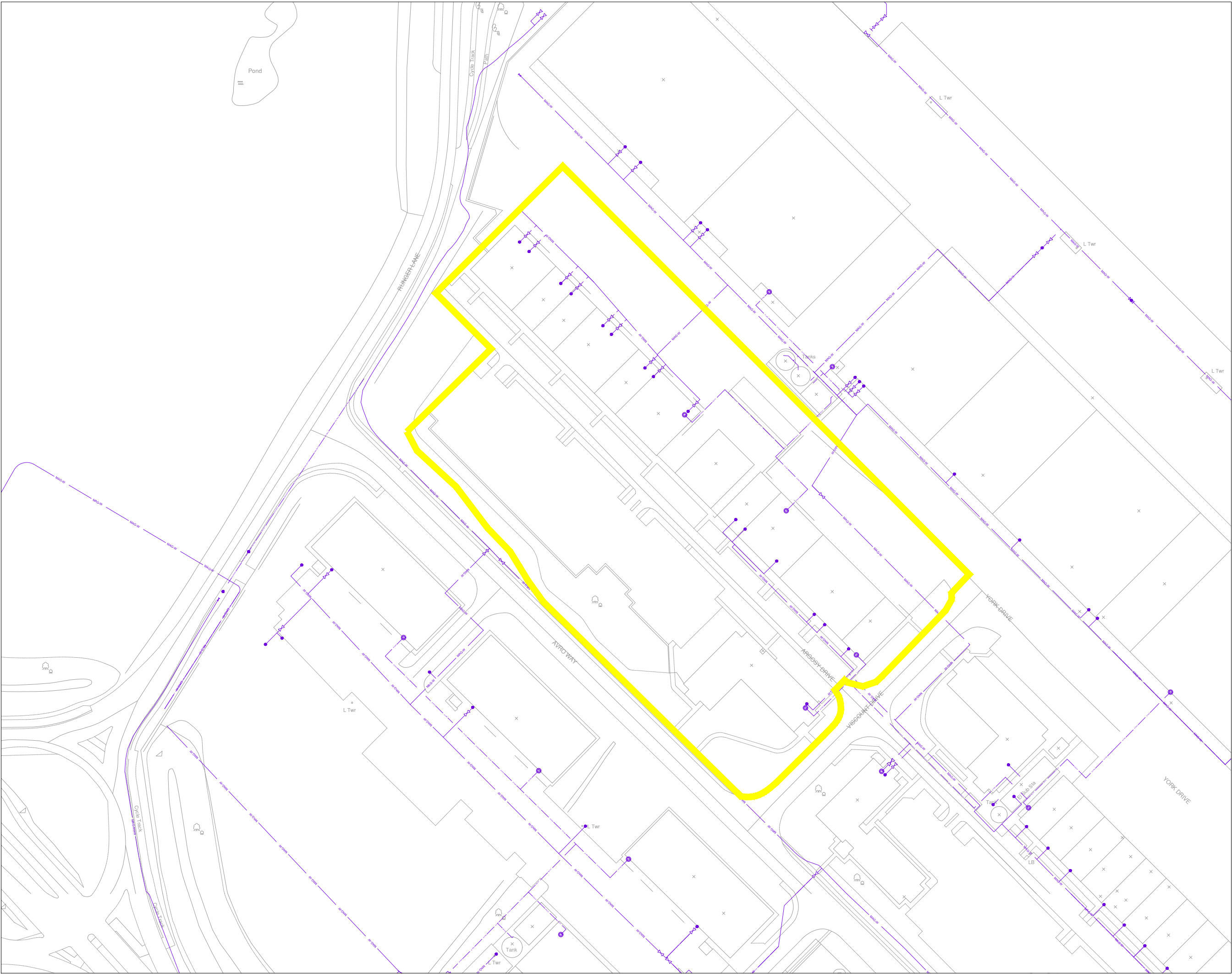
60663052

SHEET TITLE

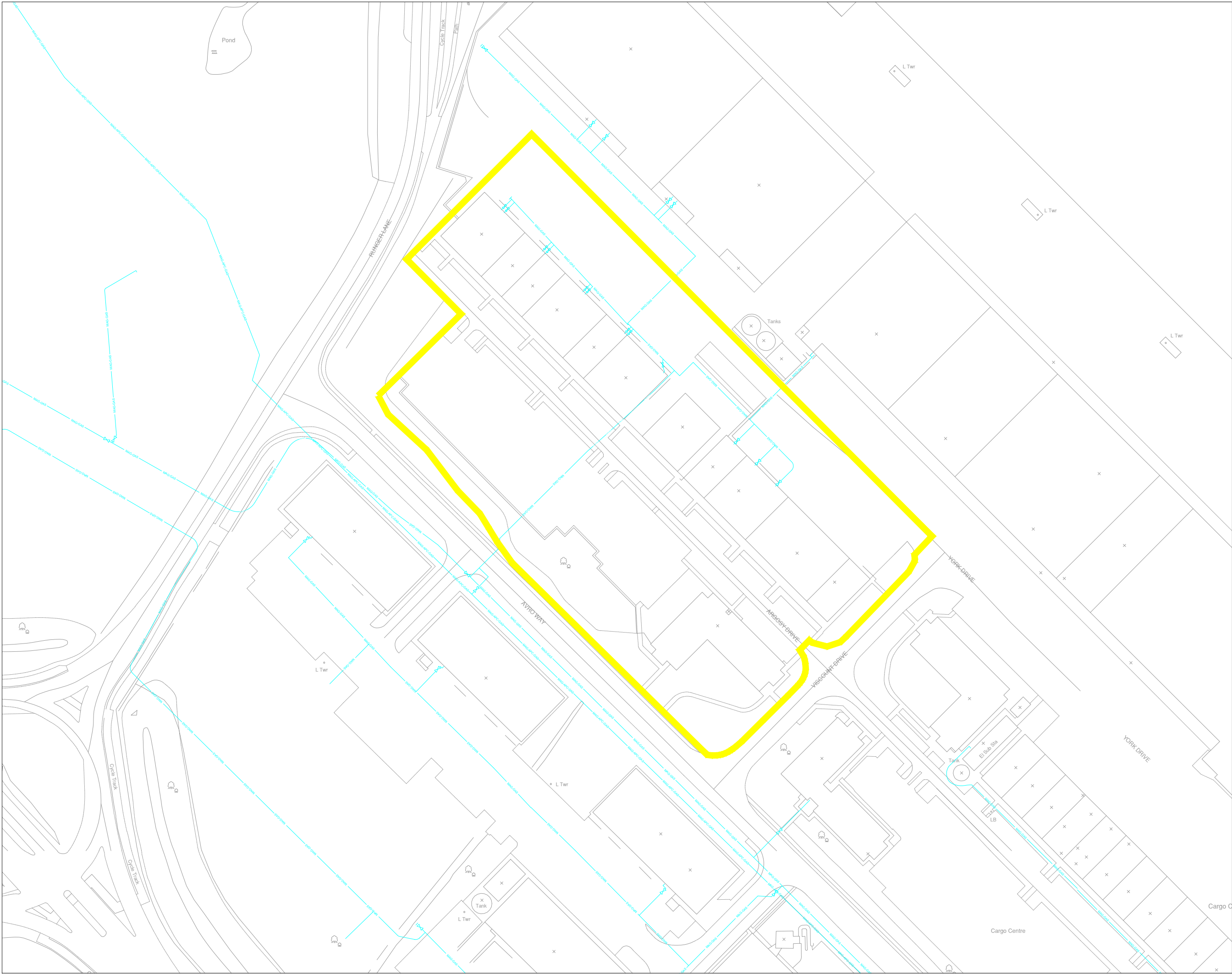
MAG Argosy Building
Existing Service Layout - Potable Water

SHEET NUMBER

60663052-ACM-ARA-XX-DR-M-10002



A.2 Existing Gas main services



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BUILDING ARGOSY -
MANCHESTER
AIRPORT

CLIENT



CONSULTANT

AECOM
5th Floor
1 New York Street
Manchester M1 4HD
United Kingdom
T +44 161 601 1700
F +44 161 601 1700
www.aecom.com

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KEY

Existing Gas Supply from
Proposed 401 Building Utilities

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I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

S3

PROJECT NUMBER

60663052

SHEET TITLE

MAG Argosy Building
Existing Service Layout - Gas

SHEET NUMBER

60663052-ACM-ARA-XX-DR-M-10003

A.3 Existing HV cable Distribution



PROJECT

BUILDING ARGOSY -
MANCHESTER
AIRPORT

CLIENT



CONSULTANT

AECOM
5th Floor
1 New York Street
Manchester M1 4HD
United Kingdom
T +44 161 601 1700
F +44 161 601 1700
www.aecom.com

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KEY

Existing HV Supply from
Proposed 401 Building Utilities

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S3

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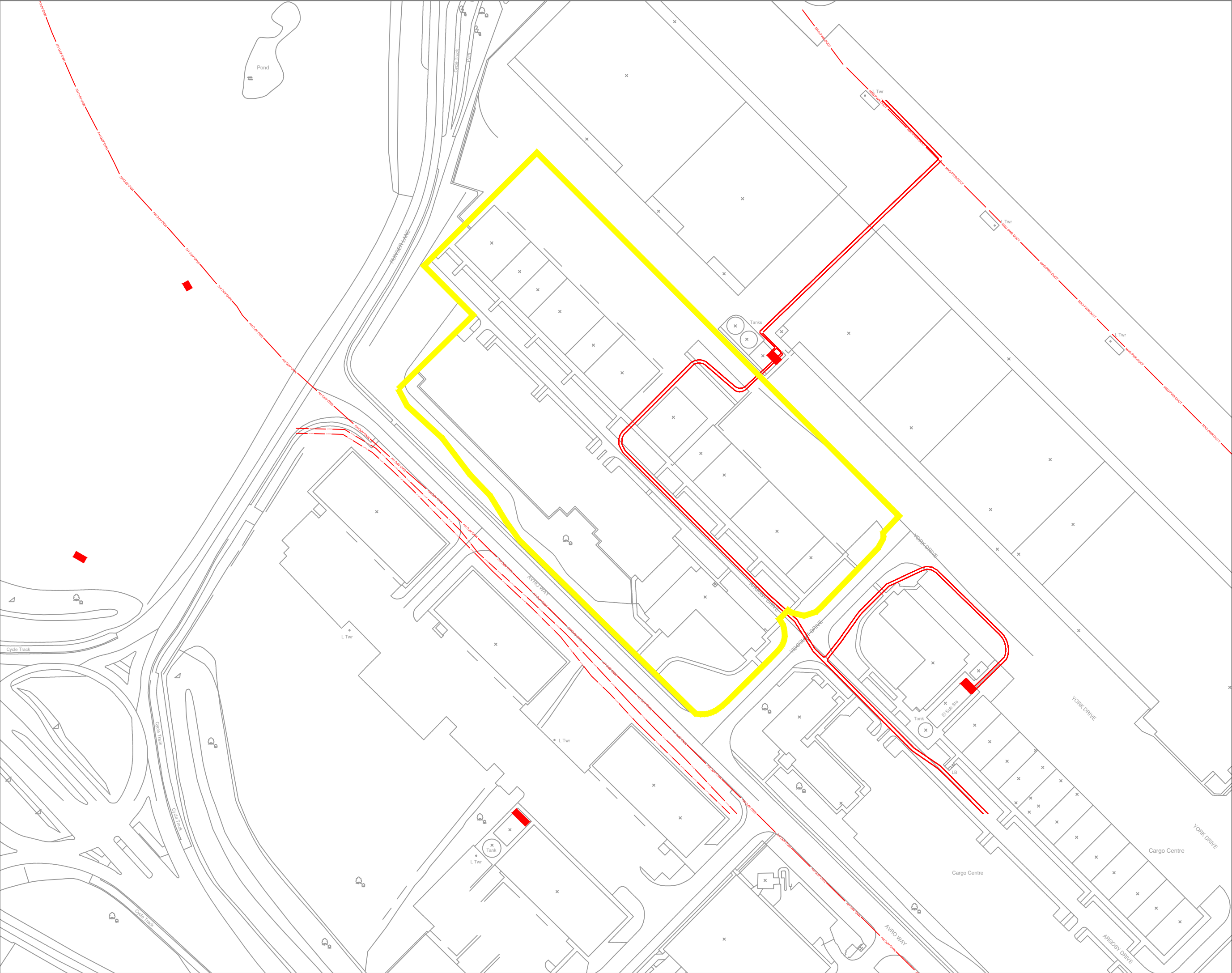
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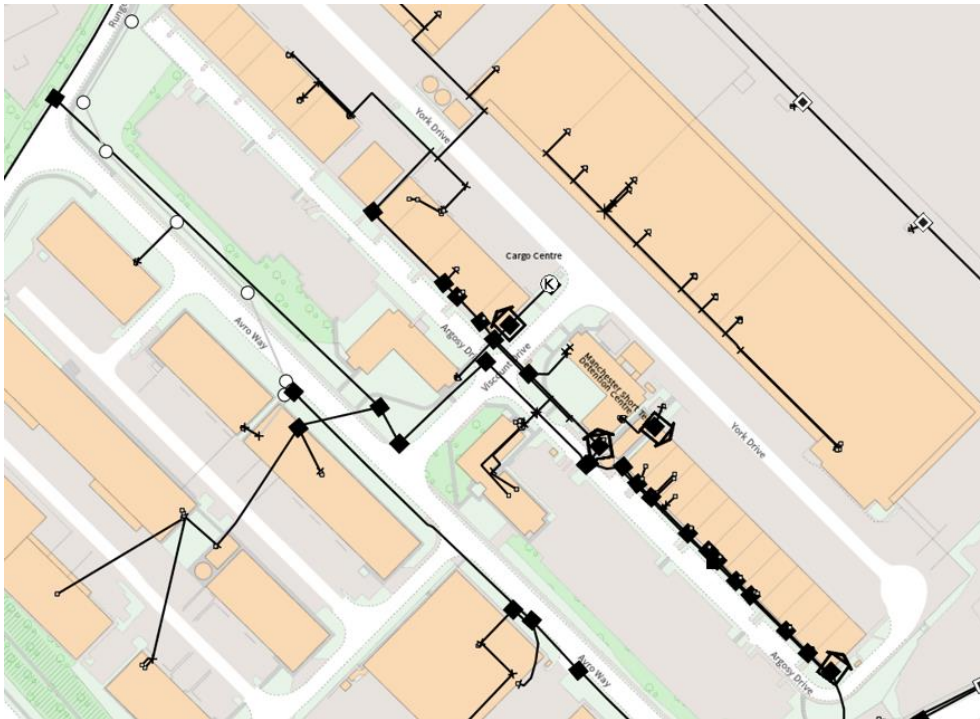
MAG Argosy Building
Existing Service Layout - HV

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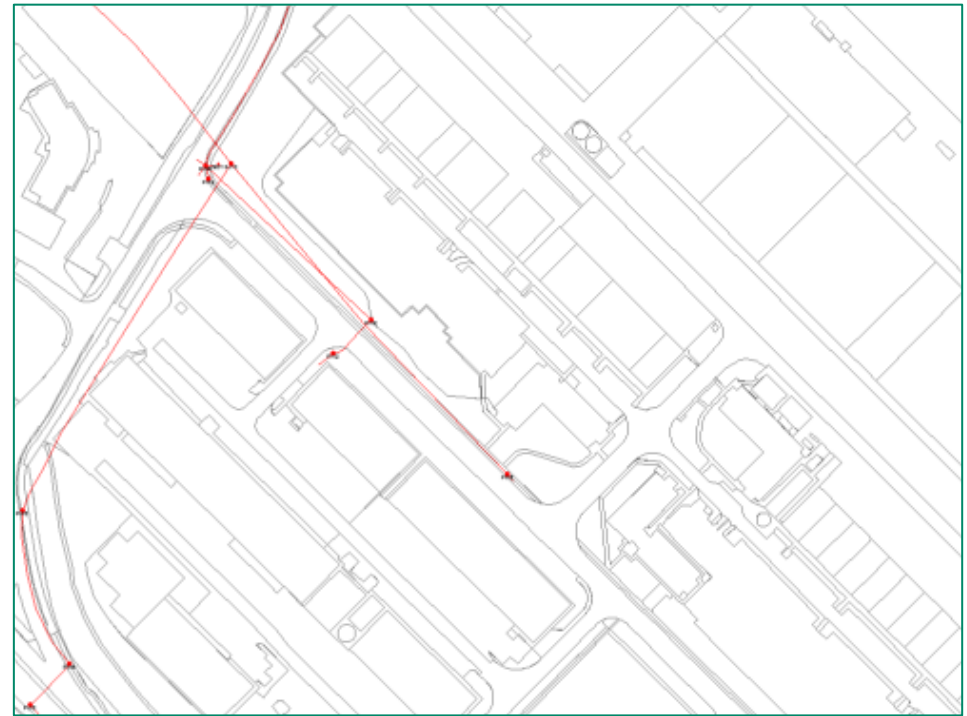
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A.4 Existing Comms / IT cable distribution



Existing BT Duct routes



Existing Virgin Media Duct routes

