

Building 402

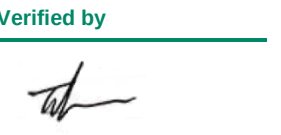
Utilities Strategy

60663052-ACM-402-XX-RP-BS-00001

Threadneedle Curtis Ltd

4 February 2022

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
1	25/02/2022	For Issue	Yes	Vin Bamford	Technical Director

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Table of Contents

1.	Introduction.....	5
2.	Site Location.....	5
3.	Utilities Strategy.....	5
3.1	Demand Calculations	5
3.2	Power.....	6
3.3	Gas	7
3.4	Water.....	7
3.5	Comms.....	8
3.6	Existing Utilities	9
	Appendix A – Existing Utilities Drawings	10
A.1	Existing Water Main Services	10
A.2	Existing Gas main services.....	11
A.3	Existing HV cable Distribution.....	12
A.4	Existing Comms / IT cable distribution	13

List of Figures

Figure 1 - Proposed HV supply	6
Figure 2 - Proposed Gas supply.....	7
Figure 3 - Proposed Water supply.....	8
Figure 4 - Proposed Comms Supply	9

1. Introduction

Threadneedle Curtis Ltd have commissioned AECOM to prepare a utilities strategy for a proposed logistics development on the site of Building 402 in the global logistics area at Manchester Airport.

An outline masterplan for the site has been provided by RPS showing one new unit, called Unit 2. Unit 2 comprises a 92,000sq ft warehouse building which is split into 4 units with individual integral office Space. Office space for all units 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.

Threadneedle Curtis Ltd have been assigned utilities capacity by Manchester Airport Group (MAG) to be serviced 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

The Unit 2 site is bounded by Avro Way to the North, Building 401 and Manchester Airport Coach Parimit to the East, Wilmslow Old Road to the South and an Unnamed Road that is perpendicular to Avro Way to the West. Air Menzies International sits across the Unnamed Road to the West of the site and the A538 Wilmslow Road is located to the South-East. 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 on the basis of a maximum 90,000sqft of building footprint

3.1 Demand Calculations

Demand calculations have been prepared in line with the CIBSE guidance assuming warehouse and office use with 10% of the overall footprint dedicated as office.

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 402 Unit development:

Power = 832kVA

Gas – N/A - calculated at 64m³/hr if required

Water = 1 l/s

Foul = 2.09l/s

3.2 Power

The power supply to unit 402 is to be provided via the relocated ZZ sub-station which will be sited in the north east corner of the site. The existing ZZ sub-station has to be relocated to allow the demolition of the existing building.

ZZ sub station is currently supplied from an 11kV Ring Main Unit located at Z sub station. This will remain as the main point of connection, but with a diverted cable and new sub station Z established to suit the new 402 site. The final location and arrangement is to be agreed.



Figure 1 - Proposed HV supply

Any electrical works associated with the HV elements of the diversion and new substation location must be undertaken by ENWL as per the COMA agreement allowing ENWL to act as network operator for the Manchester Airport Group.

A 1MVA transformer will be provided in the new ZZ sub-station and this will provide the supply to the new facility. The estimated load for the new development is 832kVA

Power will be taken from the MAG operated network and details for billing, metering and sub-metering will need to be agreed with MAG Utilities.

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

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. It is proposed to install a valved connection point of this existing main for future gas requirements on the site, though currently there is no intention to supply gas to the units.

A provisional gas load for the site has been calculated based on future gas heating to the building, should this be required. The predicted gas demand for the new 402 development is therefore 64m³/hr, for heating of the building with gas only.

The location for the proposed connection point is shown below



Figure 2 - Proposed Gas supply

3.4 Water

An existing potable water supply from United Utilities is available adjacent to the site located in Old Wilmslow Road. The size and capacity of this main is unknown and will need to be confirmed with UU as to whether it is suitable for use. Alternatively, it may be possible to connect to the MAG Potable water main which is located in Avro Way.

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 same distribution main in Avro Way.

The location for the proposed connection points is shown below.

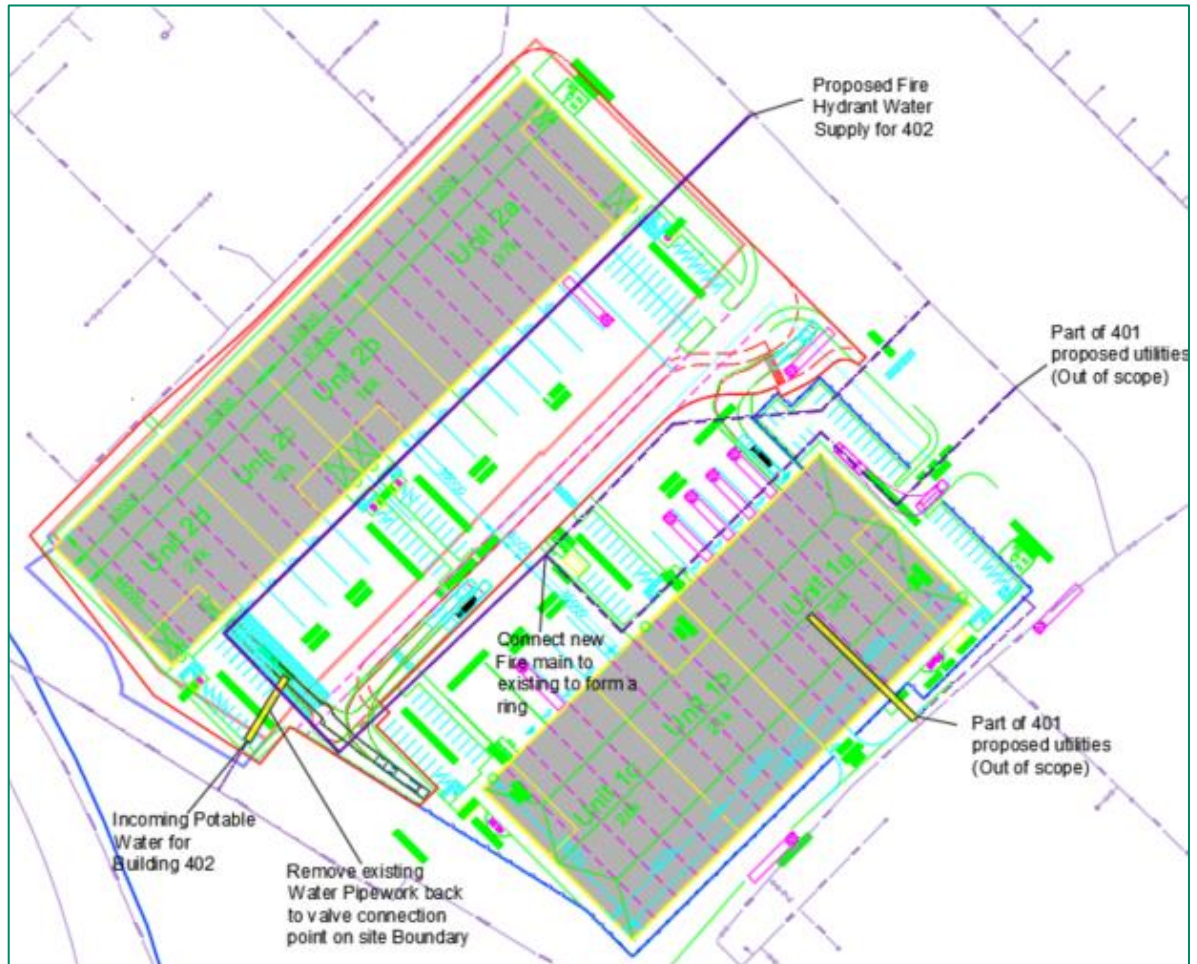


Figure 3 - Proposed Water supply

3.5 Comms

Comms provision will need to be provided via the BT network in Avro Way. A pit and duct system is present within Avro Way and the existing verge. A new connection will need to be installed from the proposed site to the BT network in Avro way. 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

The location for the proposed connection points is shown below

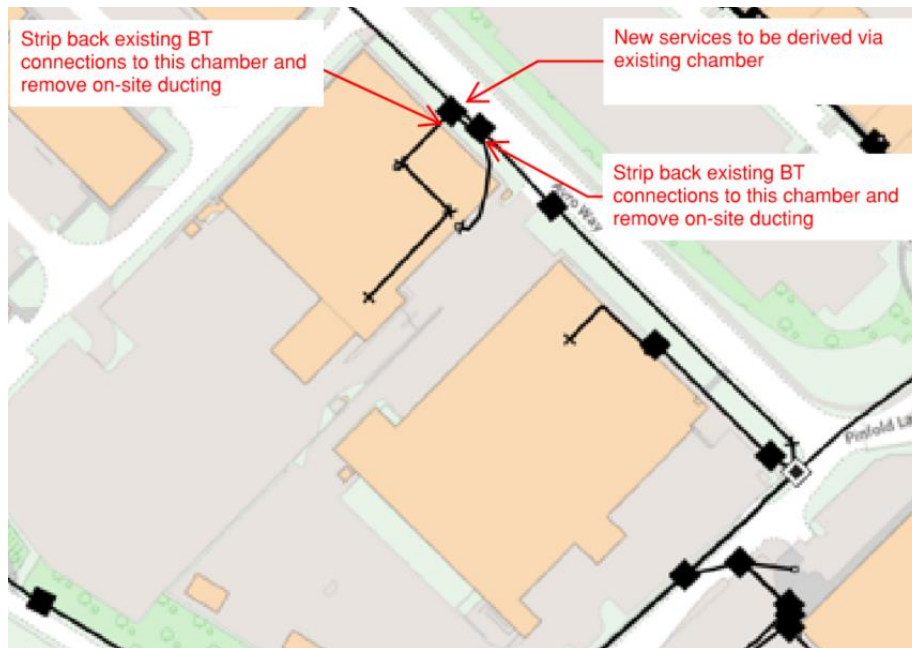


Figure 4 - Proposed Comms Supply

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 402 building has low voltage supplies from an internal panel supplied from the existing HV transformer at ZZ Substation. There are a number of external LV supplies to car park lighting, etc that are also fed from the building 402. It is assumed at this stage that all LV supplies will be isolated and removed as part of the demolition works package.

High Voltage (HV) electric

There is an existing HV ring cable from Z sub station to ZZ sub station. ZZ sub station will be relocated, and the existing cables diverted as part of the scope for relocating ZZ sub.

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 amended as required to service the proposed development.

The proposed site entrance will cross these mains and all works must be agreed with MAG Utilities prior to commencement on site. Protection or diversion works may be required.

Water

The existing 402 building is serviced from the united utilities water main located in Old Wilmslow Road. This supply is to be retained and amended as required to service the new building.

Comms

An existing comms supply is provided via the MAG network in Avro Way running along the western façade of the existing building. It is anticipated that the existing below ground cables will need to be removed following vacant possession.

Appendix A – Existing Utilities Drawings

A.1 Existing Water Main Services

- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE RELEVANT DRAWINGS AND SPECIFICATIONS.
- IF RECEIVED ELECTRONICALLY, IT IS THE RECIPIENT'S RESPONSIBILITY TO PRINT TO THE CORRECT SCALE. ONLY WRITTEN DIMENSIONS SHALL BE USED.
- ALL DIMENSIONS IN METERS UNLESS STATED OTHERWISE.

- Existing Potable Water Supply from Proposed 401 Building Utilities

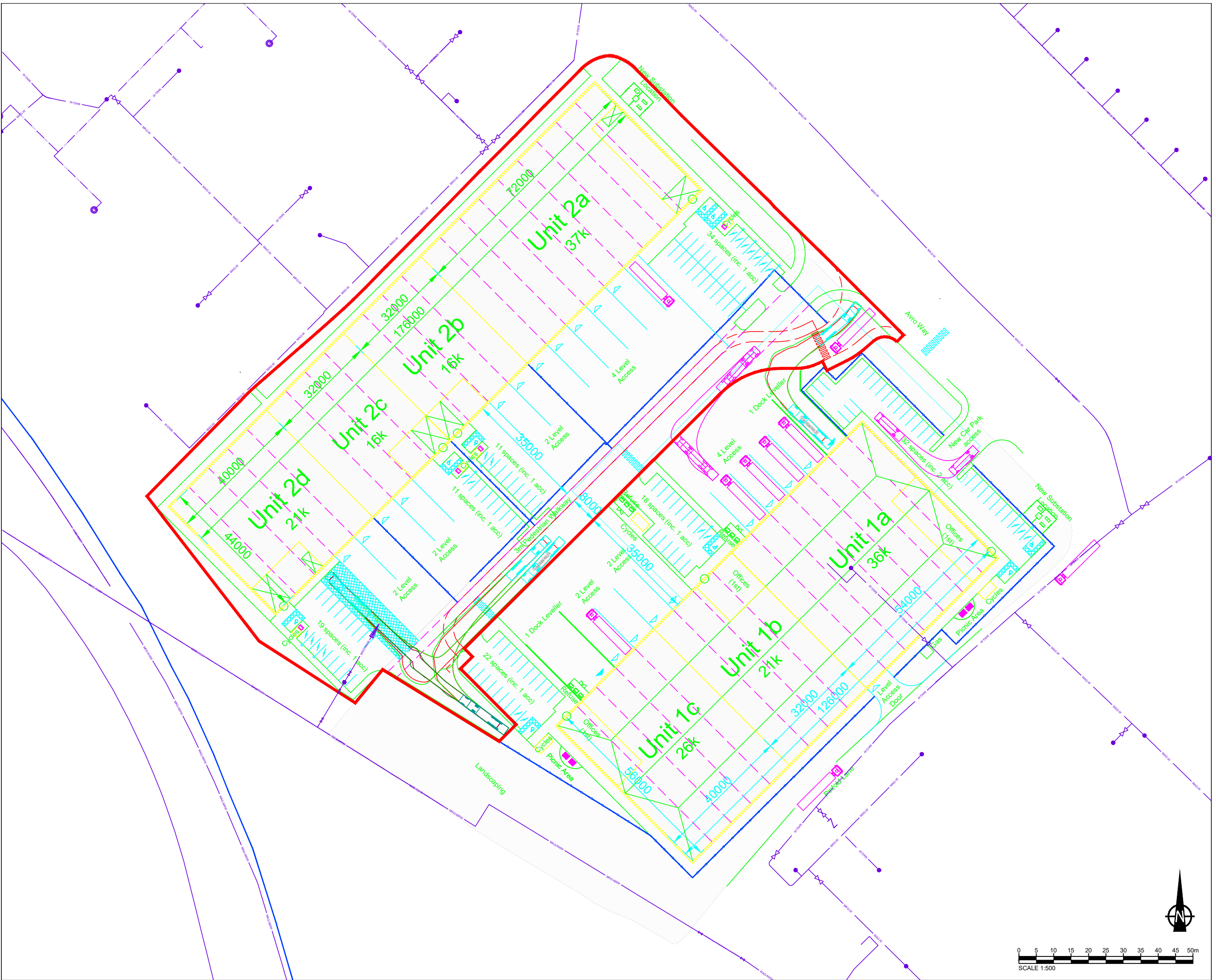
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I/R	DATE	DESCRIPTION

S3

60663052

MAG 402 Building
Existing Service Layout - Potable Water

60663052-ACM-402-XX-DR-M-10002



A.2 Existing Gas main services

PROJECT

BUILDING 402 -
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AIRPORT

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KEY

Existing Gas Supply from
Proposed 401 Building Utilities

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ISSUE PURPOSE / SUITABILITY

S3

PROJECT NUMBER

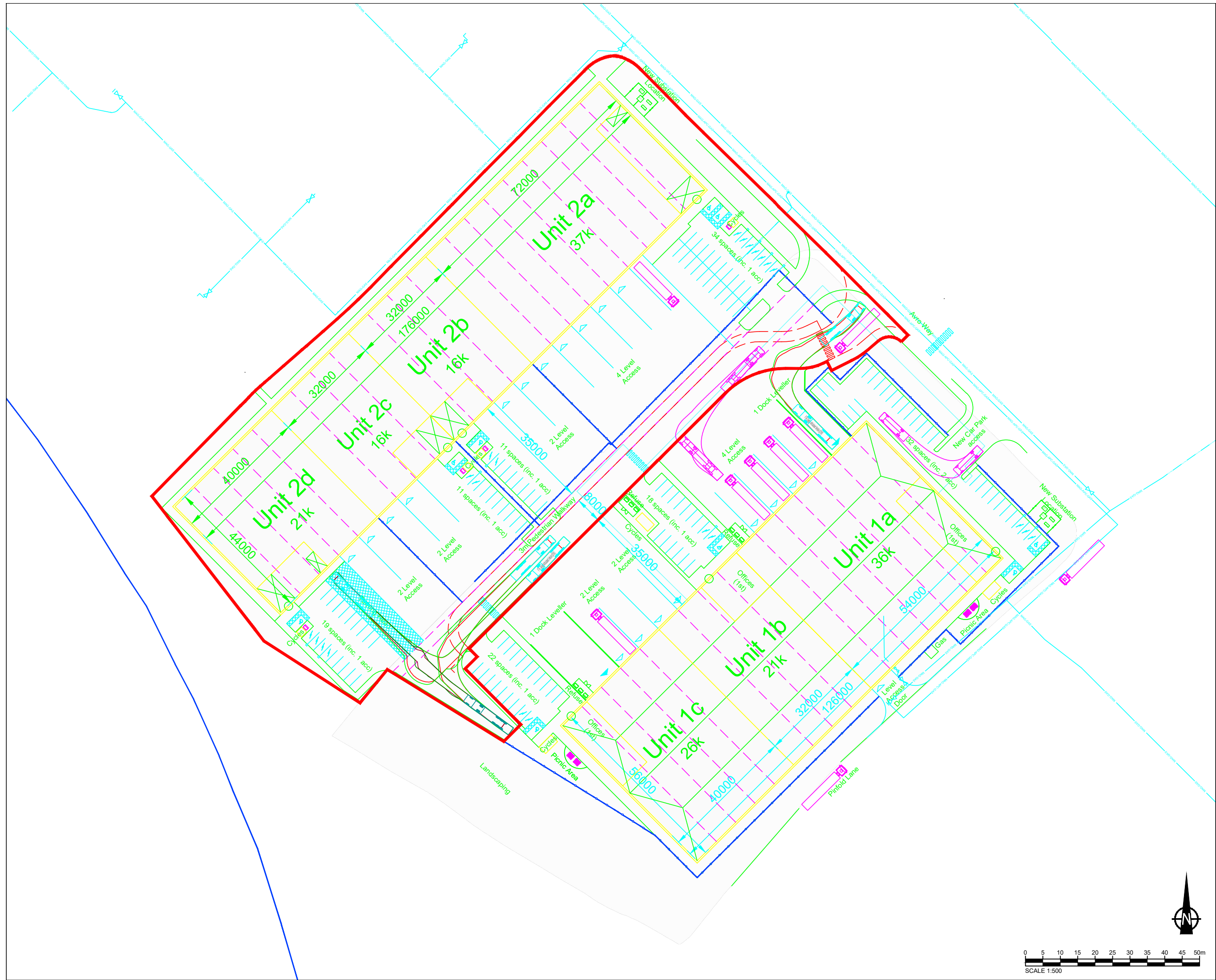
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SHEET TITLE

MAG 402 Building
Existing Service Layout - Gas

SHEET NUMBER

60663052-ACM-402-XX-DR-10004



A.3 Existing HV cable Distribution

BUILDING 402 -
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KEY

- ### Existing HV Supply from Proposed 401 Building Utilit

SUE/REVISION

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R	DATE	DESCRIPTION

SUE PURPOSE / SUITABILITY

3

PROJECT NUMBER

0663052

HEET TITLE

AG 402 Building
Existing Service Layout - HV

SHEET NUMBER

0663052-ACM-402-XX-DR-E-10001

