
Appendix D – Other Supporting Information

- D.1.1 Clancy Flood Risk Assessment (FRA) and SUDS Strategy, 02/07/2019 (Report Reference 8/1982)



Flood Risk Assessment and SUDS Strategy

Langstone Technology
Park,
Langstone Road,
Havant,
PO9 1SA

2nd July 2019

Ref: 8/1982

Prepared on Behalf of:
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1.0 INTRODUCTION

1.1 General

- 1.1.1 This report has been prepared on instructions received from AG Langstone BV and Trinity Investment Management.
- 1.1.2 This report relates to the proposed works at Langstone Technology Park, Havant to reconfigure the existing building '1000', add new areas of car parking along with construction of 12 No. units on the South West of the site.
- 1.1.3 This report sets out the results of a flood risk assessment required in support of a planning application for this development. The assessment has been carried out in accordance with the general principals set out in National Planning Policy Framework, Technical Guidance to the National Planning Policy Framework published in March 2012 and Planning Practice Guidance May 2019, Flood risk last updated in March 2014.
- 1.1.4 This report is prepared solely for the benefit of the Client. This report may not be assigned without prior written permission from Clancy Consulting.

1.2 Background Information

- 1.2.1 In 2001 the Department for Transport Local Government Regions (DTLR) published Planning Policy Guidance Note 25 (PPG25), which explains how flood risk should be taken into consideration during the planning and development process.

PPG25 was replaced by Planning Policy Statement 25: Development and Flood Risk published in March 2010. This latest Policy Statement has been introduced to place more emphasis on the increased flood risk from climate change.

PPS25 specifies a sequential test which local planning authorities should apply to all future proposed development sites. An exception test may also be applied to provide a method of managing flood risk while still allowing necessary development to occur.

In Feb 2019, the Government released a revised National Planning Policy Framework (NPPF) aiming to make the planning system less complex and more accessible, to protect the environment and promote sustainable growth.

NPPF accompanied with the Technical Guidance published also in March 2012 supersedes PPS25 although the principles set out in the new publication remain similar in terms of the flood risk aspect. The flood risk Practice Guide was published on-line in March 2014.

- 1.2.2 The following zones define the levels of flood risk:

Zone 1: Low Probability.

This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any one year. (<0.1%)

Zone 2: Medium Probability

This zone comprises land assessed as having between 1 in 100 and 1 in 1000 annual probability of river flooding (1%-0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.

Zone 3a: High Probability

This zone comprises land assessed as having between 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

Zone 3b: Functional Flood Plain

This zone comprises land where water has to flow or be stored in times of flood. Strategic Flood Risk Assessments should identify this zone.

- 1.2.3 As part of its general obligations under the Water Resources Act 1991, The Environment Agency has carried out surveys of its existing defences against flooding and has published a series of nationwide 'Indicative Floodplain Maps' based upon information from historic flood events and basic hydraulic modelling. In general terms, these maps give a good indication of the areas likely to be affected by flooding. More recently, the Environment Agency have published the 'Flood Map' on their website which is based on improved hydraulic modelling and detailed local data. The map highlights Zones 2 and 3 on the map with all other areas being Flood Zone 1.
- 1.2.4 The EA Flood Map for the area of the proposed development indicates that there is a small strip of land within flood zone 3 on the site. However, the majority of the development lies in an area of flood risk **zone 1 – low probability of flooding**.

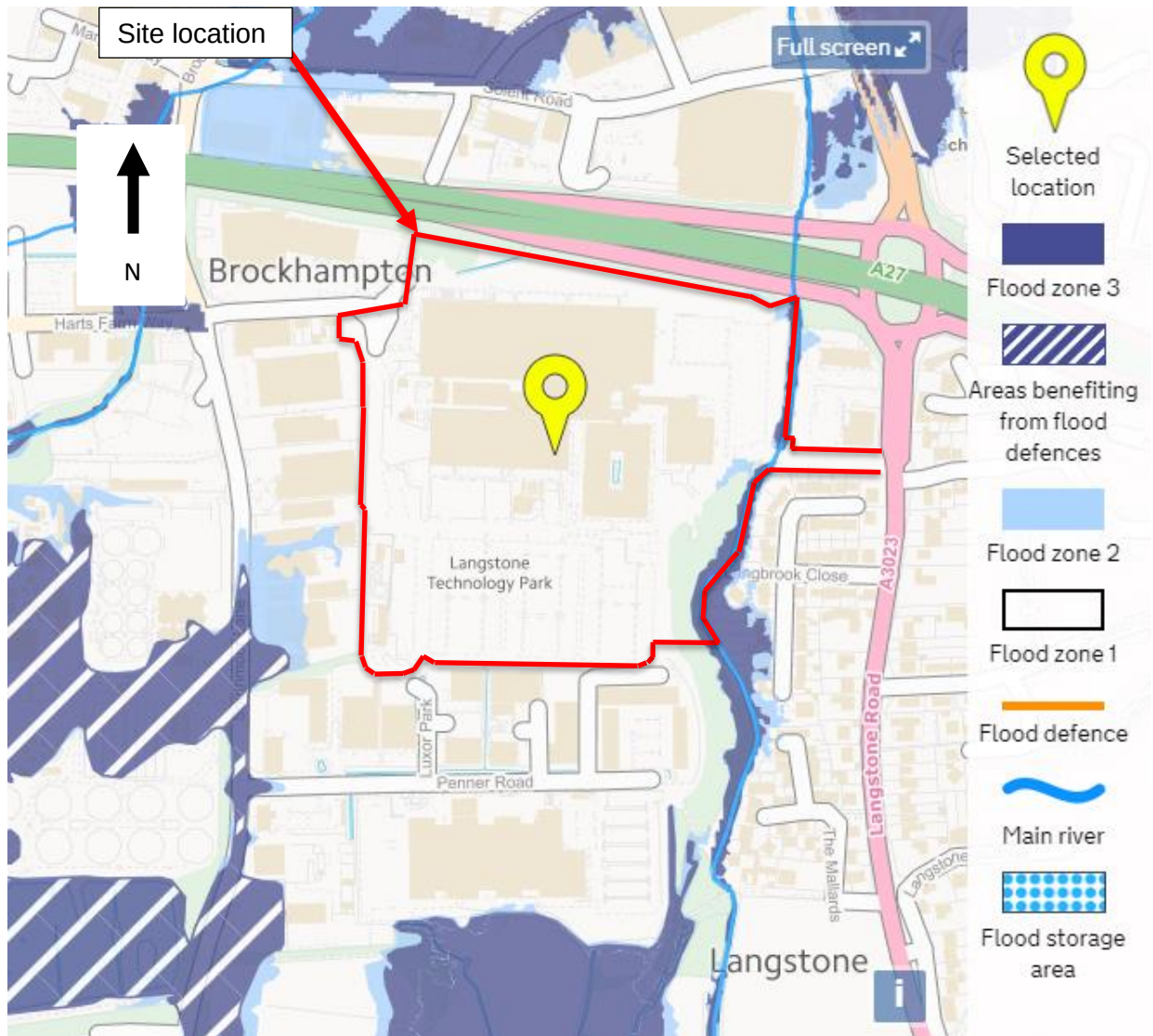


Figure 1 - Risk of Flooding from Rivers and Seas (EA)

2.0 STRUCTURE OF THE REPORT

2.1 The report has been structured to follow the general principals set out in the Technical Guidance published in March 2012.

2.2 The methodology for this FRA has comprised a desktop study and liaison with the Environment Agency (EA) and reference has also been made to relevant plans including plans showing the location of local sewers.

2.3 Sources of information

- Flood maps from the Environment Agency published online (EA)
- Havant Borough Council Strategic Flood Risk Assessment 2018
- British Geological Survey (BGS)
- Southern Water Asset Plan (SW)
- Preliminary Geo-environmental Risk Assessment (deltasimons May 2019)

3.0 SITE DESCRIPTION

3.1 Location

3.1.1 The site is located as detailed as below.

OS X (Eastings)	471279
OS Y (Northings)	105702
Nearest Post Code	PO9 1SA
Lat (WGS84)	N50:50:47 (50.846458)
Long (WGS84)	W0:59:20 (-0.988916)
LR	50.846458,-0.988916
National Grid	SU712057 / SU7127905702
mX	-110085
mY	6561024

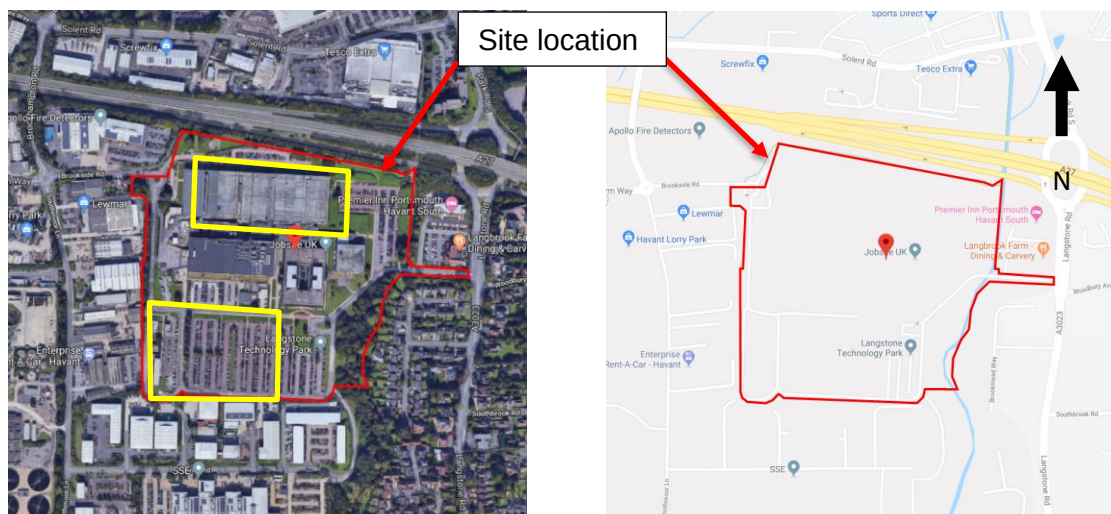


Figure 2 - Site Location Plan (Google Maps)

3.1.2 The overall site is approximately 425m long by 400m wide (17ha) and comprises of multiple large office and laboratory spaces hosting multiple businesses.

3.2 Development Proposals

3.2.1 The applicant seeks full planning permission for the part-demolition of Building 1000, installation of a new flank elevation to the East, a new elevation to the North of Building 4000 as a result of the aforementioned part-demolition of Building 1000, the erection of new buildings in flexible B1c, B2 and B8 use in the South-West corner of the site with associated parking; and the creation of new car parking areas and the rationalisation of existing parking areas.

4.0 FLOOD POTENTIAL

4.1 Development Proposal

4.1.1 The NPPF classification of this development is 'less vulnerable'.

4.2 Potential for Flooding

4.2.1 The site is located within a zone 1 area in terms of flooding from rivers and the sea.

4.2.2 There are, therefore, four potential sources of flooding at the site which will be addressed in more detail in this report, i.e.

- (i) From surface water overland flow off site.
- (ii) From high groundwater levels.
- (iii) From artificial sources such as reservoirs.
- (iv) From the surcharging of drains or sewers on the site.

4.3 Existing Historical Flooding Information

4.3.1 No record of historical flooding history of the site has been found in the Havant Borough Council Strategic Flood Risk Assessment.

4.4 Flood Risk Probabilities

- (i) *Flooding from Surface Water – Overland flow*

4.4.1 During extreme rainfall events or due to poor drainage gully maintenance there will be times when gully capacity is exceeded which will lead to surface flow within the surrounding roads. Mapping for this form of flooding is shown on the Environment Agency web site.

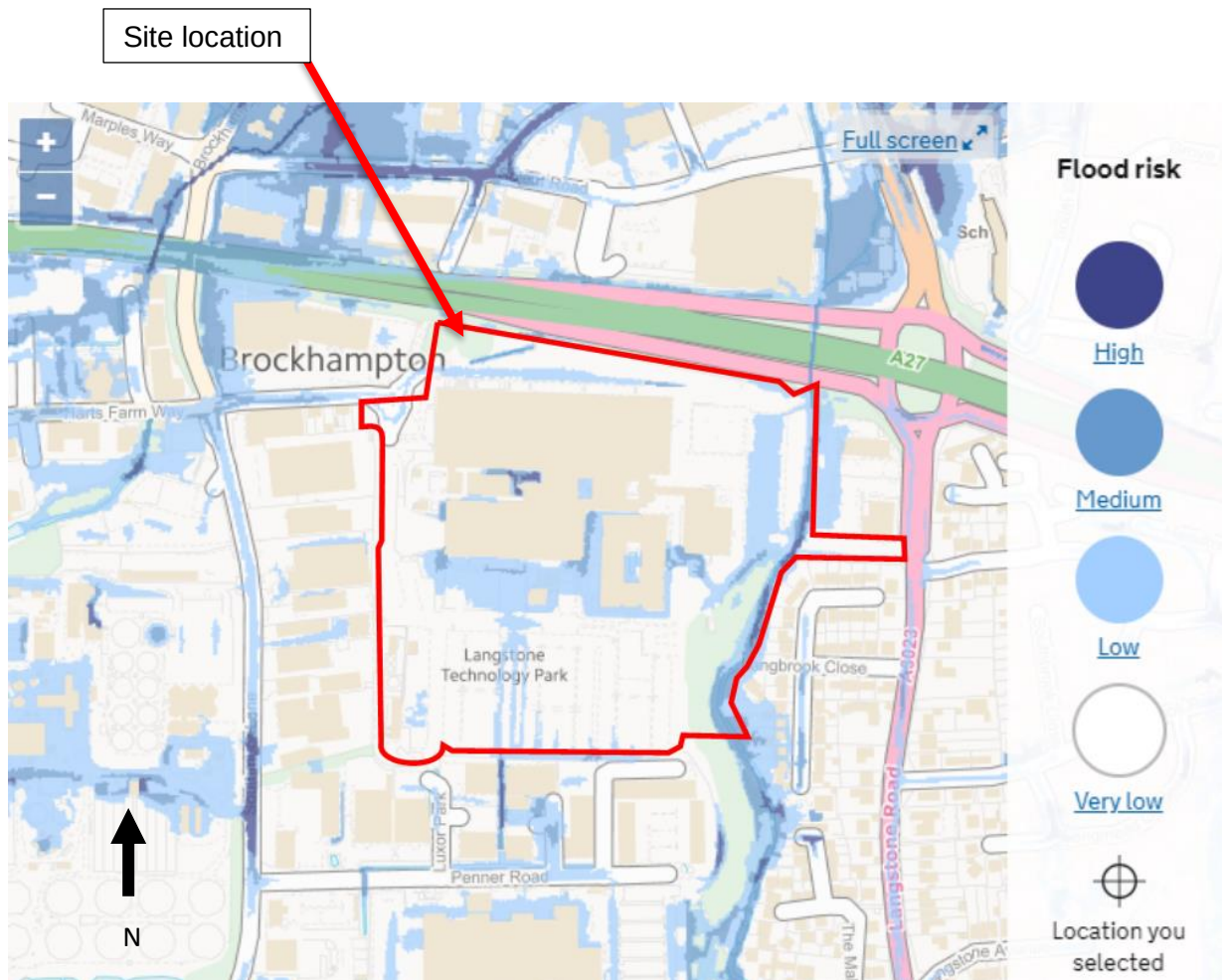


Figure 3 - Risk of Flooding from Surface Water (EA)

4.4.2 There is predicted to be various areas of low to medium risk of surface water flooding during extreme rainfall events on site, however the rest of the site is of very low risk up to the 0.1% probability event. **The Environment Agency classifies this site as low flood risk from surface water.**

4.4.3 As shown in Figure 3, the EA flood modelling anticipates that there is low potential for overland run off from the south of the development running north towards the existing buildings in the technology park. To mitigate this it is recommended that the new industrial units to be constructed on the car park have a minimal elevation raise. This elevation raise can be seen as provided on the architectural proposals.

(ii) *Flooding from Groundwater*

4.4.4 Geological records for this area indicate that the superficial geology consists of Alluvium (clay, sand, silt and gravel). The bedrock geology consists of Lewes Nodular Chalk, Seaford Chalk, Newhaven Chalk, Culver Chalk and Portsdown Chalk.

4.4.5 There are a number of historic borehole logs for the technology park. The boreholes indicate superficial deposits of clays and gravels overlaying firm chalk deposits. This is in line with expectations from British geological society maps. Ground water was encountered in the boreholes between approximately 1.35-2.25m. A summary of the boreholes can be found in Appendix F.

- 4.4.6 Based upon the desk study evidence above, **the risk of flooding due to ground water can be considered low for this proposed development.**

(iii) *Flooding from Artificial Sources - Reservoirs*

- 4.4.7 Artificial sources of flooding are potentially from man-made structures and infrastructure. The Environment Agency have modelled the potential effect of flooding from failures in retaining structures containing reservoirs.

- 4.4.8 It should be noted that reservoir flooding is extremely unlikely to happen. There has been no loss of life in the UK from reservoir flooding since 1925. All large reservoirs are inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, the Environment Agency ensure that reservoirs are inspected regularly, and essential safety work is carried out. **The risk of flooding from reservoirs at this site is extremely low.**

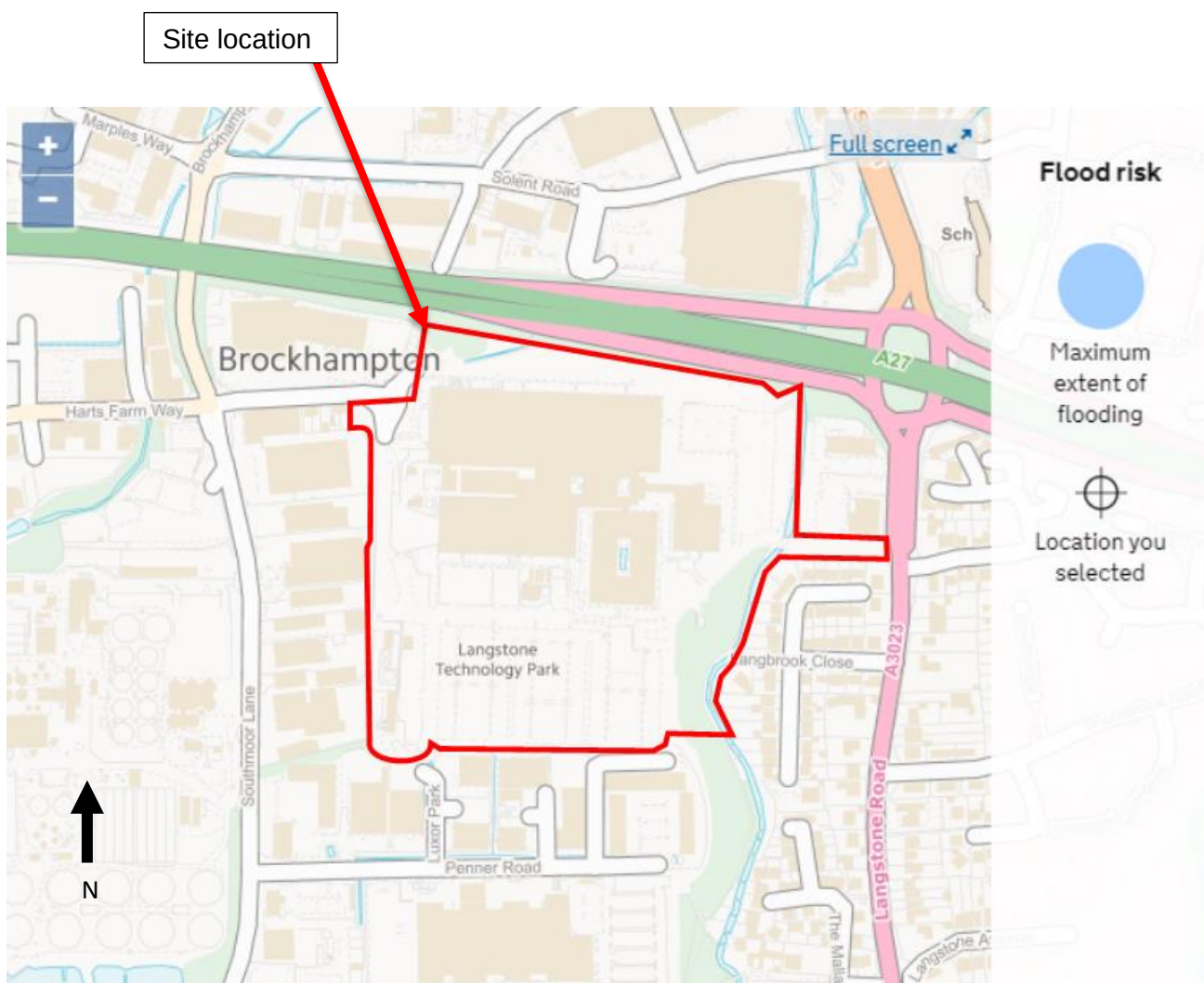


Figure 4 - Risk of Flooding from Reservoirs (EA)

(iv) *Flooding from Drainage on site*

- 4.4.9 Flooding could occur if the on-site drainage system becomes blocked or the rainfall event exceeds the design capacity. Details of the drainage system are discussed in Chapter 5.

5.0 DRAINAGE

5.1 EXISTING DRAINAGE

5.1.1 The Southern Water drainage mapping shows that there are adopted public drainage systems in the site. A large 600mm diameter foul sewer running from East to West through the centre of the site, 750mm diameter foul sewer running from East to West just north of the site and a 675mm diameter surface water sewer running from North to South along the western site boundary. Additional private drainage has been recorded in a CCTV survey.

5.1.2 The CCTV and Topographic survey undertaken at the site can be found in Appendix B.

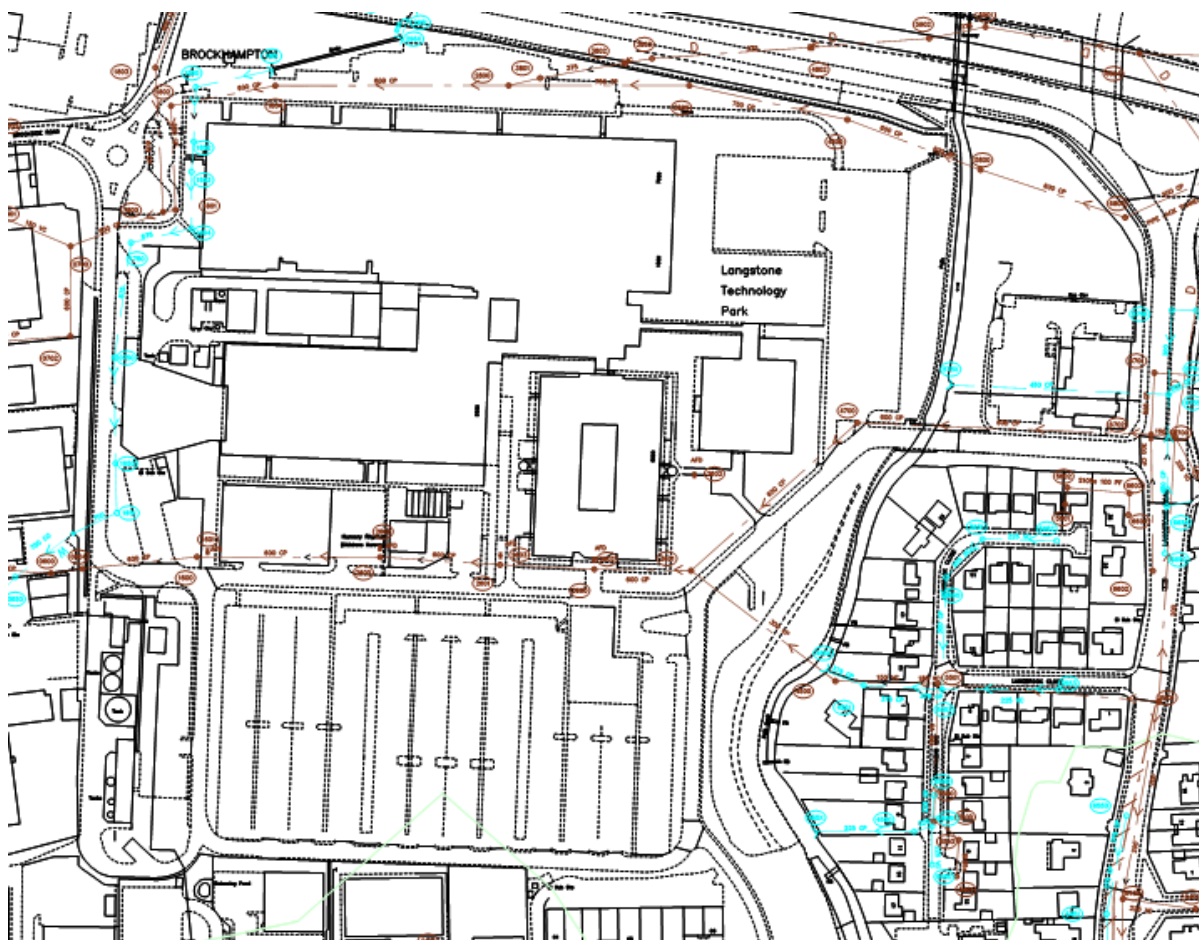


Figure 5 - Existing Public Sewer Plan (Southern Water)

5.1.3 The CCTV survey located a number of private drainage systems within the site. These can be found in Appendix B and are summarised on the proposed drainage strategy drawing found in Appendix E.

5.1.4 Surface water on the site north of the road bisecting the site drains via a 450mm surface water pipe discharging to the Environment Agency (EA) main river to the east of the site. Surface water drainage for the existing car park on the south of the site exits the site via 375mm diameter pipes heading south. A sketch summary of the CCTV survey overlaid on the proposed scheme can be found in Appendix C.

- 5.1.5 Foul water from the site connects to the existing adopted Southern Water mains foul sewers running through the site.
- 5.1.6 Information from the EA main river map indicates the river running along the east side of the site is a main river.



Figure 6 – EA River map

5.2 PROPOSED DRAINAGE

5.2.1 Surface Water Disposal Hierarchy

The disposal of surface water should be considered in the following order of priority;

1. Infiltration into the subsoil via soakaways or permeable paving.
2. Discharge to a water course or the sea.
3. Discharge to a surface water sewer.
4. Discharge to a combined sewer.

If it is not possible to discharge to a soakaway, surface water should be controlled with the use of Sustainable Drainage Systems (SuDS) and considered using the SuDS Hierarchy.

5.2.2 SuDS Hierarchy

<i>Most Sustainable</i>	<i>SUDS technique</i>	<i>Flood Reduction</i>	<i>Pollution Reduction</i>	<i>Landscape & Wildlife Benefit</i>
	Living roofs	✓	✓	✓
	Basins and ponds - Constructed wetlands - Balancing ponds - Detention basins - Retention ponds	✓	✓	✓
	Filter strips and swales	✓	✓	✓
	Infiltration devices - soakaways - infiltration trenches and basins	✓	✓	✓
	Permeable surfaces and filter drains - gravelled areas - solid paving blocks - porous paviers	✓	✓	
	Tanked systems - over-sized pipes/tanks - storms cells	✓		
	<i>Least Sustainable</i>			

5.2.3 Disposal of Surface Water

Infiltration

At the time of writing infiltration test results are not available for the area. Infiltration via soakaways would be the primary discharge option for surface water if proven viable.

The current drainage does not discharge via infiltration, instead the northern area of the site discharges to a river east of the site while the south discharges via carrier pipe to an unknown location off site. Therefore it has been assumed, until proven otherwise, that infiltration is not viable.

Looking at historic borehole records available via the British Geological Society for the technology park, it is found that there is the potential for high groundwater. High groundwater levels are not preferable for soakaways as ground water fluctuates throughout the year and greatly reduce their efficiency if the soakaways are not at least 1m above the highest ground water level.

At detailed design stage a full ground investigation should be carried out including infiltration testing to establish if infiltration is viable.

Watercourse

As identified in Section 5.1, there is a main river located East of the developed site. If soakaways are found to not be viable then discharge into the watercourse is the next preferred option. Discussions have been undertaken with the Environment Agency (EA) via a phone conversation on 14/6/2019. The EA have stated that so long as the discharged surface water is 'clean' then there will not be a permit required for discharge to the main river.

Existing Sewer Connections

If permission for additional discharge into the main river is not granted then a connection to the existing adopted surface water sewers will be required.

5.2.4 SuDS Strategy - Control at Source.

One of the most effective means of reducing surface water flows and run-off is to control the rainfall at source with the use of increased soft landscaping, green roofs, and permeable paving.

Permeable paving has been proposed as an option in areas of low trafficked hardstanding. Permeable paving can be used to filter and improve water quality as well as provide a storage reservoir for storm water during extreme rainfall events. The main areas that permeable paving would be utilised in this development is the car parks. As a precautionary measure it would be advisable to only utilise permeable paving in the parking bays to avoid excessive wear on the surface. Permeable paving will not be viable in the heavy trafficked areas of the south-west of the site due to the proposed vehicle loading in the area.

It would not be advisable to utilise green roofs on this type of development due to the style and function of the proposed buildings.

Generally, the smaller, more isolated footpaths may drain directly into adjacent soft landscaping if permeable paving is not utilised.

5.2.5 Proposed Drainage

Any new drainage should be designed in accordance with the building regulations to allow for easy access for maintenance and blockage clearance.

Runoff Rates (See Appendix D for calculations)

The drainage areas have been split into four distinct areas as shown in Figure 7. The Havant Local Plan stipulates in section 3.5.b that run off rates should be below the pre-development rate, or, if not possible show no increase compared to predevelopment rates.

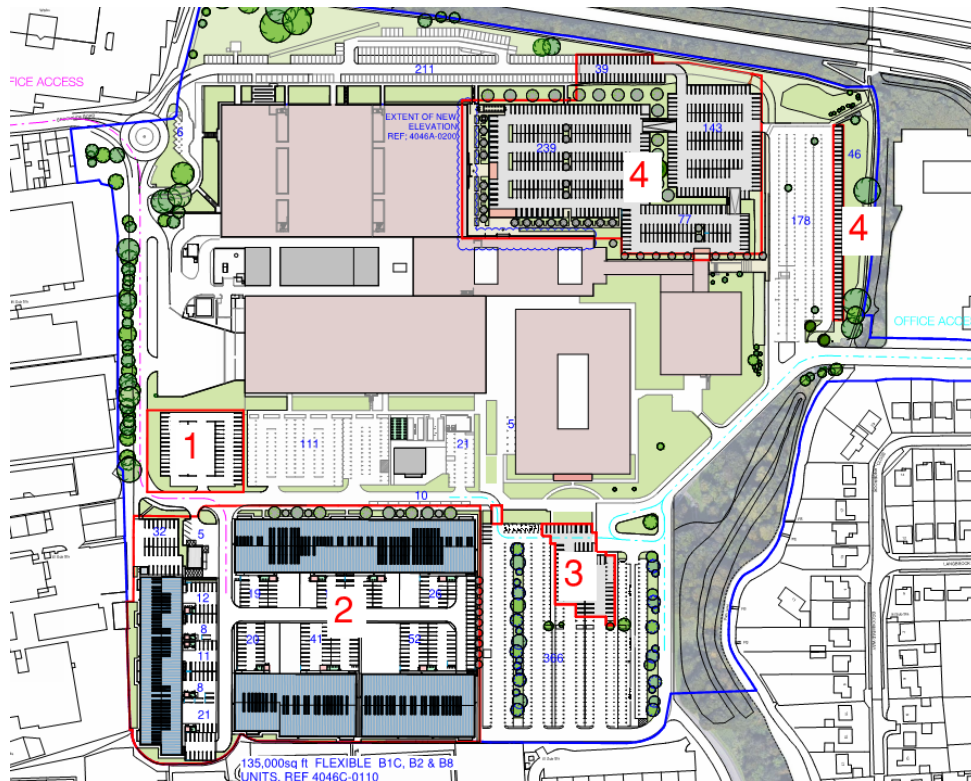


Figure 7 – Development areas, 1 to 4

Area 1 – Impermeable area = 2,044m²

Current run-off rates

1 in 1 year (l/s) = 7.5

1 in 30 year (l/s) = 18.4

1 in 100 year (l/s) = 23.7

Area 2 – Impermeable area = 25,439 m²

Current run-off rates

1 in 1 year (l/s) = 203.2

1 in 30 year (l/s) = 497.6

1 in 100 year (l/s) = 641.6

Area 3 – Impermeable area = 1,822 m²

Current run-off rates

Current area is soft landscaping, see greenfield rates

1 in 1 year (l/s) = 0.46

1 in 30 year (l/s) = 1.24

1 in 100 year (l/s) = 1.72

Obar (l/s) = 0.54

Area 4

Car park in footprint of Building 1000 area = 5212.5m²

1 in 1 year (l/s) = 41.6

1 in 30 year (l/s) = 102.6

1 in 100 year (l/s) = 131.5

New car parking in north of area 4 = 1693.5m²

1 in 1 year (l/s) = 13.5

1 in 30 year (l/s) = 33.1

1 in 100 year (l/s) = 42.7

Additional car parking area = 2655.6m²

1 in 1 year (l/s) = 21.2

1 in 30 year (l/s) = 51.9

1 in 100 year (l/s) = 67.0

Eastern proposed parking area = 530.71m²

1 in 1 year (l/s) = 4.2

1 in 30 year (l/s) = 10.4

1 in 100 year (l/s) = 13.4

Proposed Runoff Rate

The proposed runoff rate for the site have been chosen to match the current discharge and are therefore as follows:

Area 1 – 7.5 l/s

Area 2 – 132.0 l/s

Area 3 – 5.0 l/s

Area 4 – See Drainage Strategy Drawing

5 l/s has been chosen for area 3 as a flow control device will be used to limit the flow for higher storm events. The impermeable area in area 1 is also increasing. 5 l/s is the minimum recommended flow rate to reduce the likelihood of debris build up in the network.

For Area 2 see the calculations provided in Appendix 4. The discharge rate from this area has been lowered from the current run off rate as the hydraulic capacity of the discharge pipe is not expected to be able to meet the proposed flow. This is a betterment of the existing drainage.

Drainage Strategy

The proposal for this site is to attenuate all flows from impermeable areas to current run off rates with the use of below ground geocellular tanks, oversized pipes, permeable paving and flow control devices.

See Appendix D for drainage calculations including current and greenfield run off rates alongside storage tank size calculations.

See Appendix E for the proposed drainage drawings and typical details.

Water Quality

TABLE 26.2 Pollution hazard indices for different land use classifications

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential roofs	Very low	0.2	0.2	0.05
Other roofs (typically commercial/ industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (eg hospitals, retail), all roads except low traffic roads and trunk roads/motorways ¹	Medium	0.7	0.6	0.7
Sites with heavy pollution (eg haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways ¹	High	0.8 ²	0.8 ²	0.9 ²

Figure 8 – SuDS Manual extract

In accordance with the SuDS Manual, we will need to mitigate the above pollution hazard indices via the use of SuDS devices and features.

Car Parks;

The SuDS Manual identifies car parks of this use as a low pollution hazard level. It is therefore proposed that permeable pavement will be used to help mitigate this risk.

The hazard indices for car parks are;

Total Suspended Solids – 0.5

Metals – 0.4

Hydrocarbons – 0.4

Permeable Paving provides the following mitigation indices;

Total Suspended Solids – 0.7

Metals – 0.6

Hydrocarbons – 0.7

Permeable Paving is therefore suitable for SuDS mitigation in car park areas.

Area 2 (Industrial area)

The hazard indices for Industrial areas are;

Total Suspended Solids – 0.7

Metals – 0.6

Hydrocarbons – 0.7

It will not be suitable to use permeable paving for the area due to the potential for heavy vehicle loading.

Hydro International Downstream Defenders provide the following mitigation indices;

Total Suspended Solids – 0.5
Metals – 0.4
Hydrocarbons – 0.8

Therefore two downstream defenders will provide cleaning of:

Total Suspended Solids – 0.75
Metals – 0.6
Hydrocarbons – 1.2

As per SuDS manual mitigation the second item in a treatment chain will have an effectiveness of 50% This is adequate to meet the required mitigation measures as suggested by the CIRIA SuDS manual.

Roof areas of new units on the South west of the site:

As roof areas are a very low risk, the mitigation provided by the Downstream Defenders will be more than adequate.

5.2.6 **Drainage and SuDS Maintenance Strategy**

All of the measures described in this document will form part of the building O&M manual. All of the measures and designs will need to be adhered to in order to maintain the design life and design capacity of the surface and foul water drainage systems. Health and Safety risks have been communicated on design drawings. All responsibility for the on-site surface, foul water drainage and maintenance will lie with the site owner, this is to include all aspects of the surface water drainage system, including piped drains.

The below ground drainage network is designed in accordance with Building Regulations Part H 2015, BSEN 752-2008, LASOO Non-Statutory Technical Standards for Sustainable Drainage 2015 and CIRIA C753 – The SUDS Manual.

General Maintenance

Inspection chambers and access points are provided at regular intervals which can be jetted / cleaned. General checking of the below ground drainage systems should be every three (3) months. General maintenance / cleaning of the below ground systems should be after each major storm event and on an annual basis. This applies to all pipes, inspection chambers, manholes, rodding eyes, gullies, channels and headwalls etc.

Drainage Channels & Slot Drains

To be maintained in accordance with the manufacturer's recommendations and the "General" Section above.

Foul Systems

To be maintained in accordance with the "General" Section above.

Attenuation tank

The attenuation tank is to be inspected after every major storm event as will the catch pit prior to the tank. Catch pits should be emptied regularly to prevent them becoming full and causing inefficiency within the surface water drainage system.

Permeable paving

All permeable paving should be inspected monthly for the first three months after use. After this period the paving should be inspected three-monthly for operation and 48h after large storm events in the first six months.

Downstream Defender and Up-flow Filter

To be maintained in accordance with the manufacturer recommendations.

Flow Controls

Flow control device recommended to be inspected monthly for first three months and thereafter at six monthly intervals with hose dose down if required. Flow control device to be maintained in accordance with manufacturers recommendations.

Please refer to Appendix E and G for operation and maintenance requirement information.

6.0 NPPF AND LOCAL POLICY

6.1 Planning Policy Requirements

The proposal site has been classified as being within Flood Zone 1.

NPPF considers the development use as “less vulnerable” development in respect of flood risk.

The NPPF (Technical Guide) Table 3, Flood Risk Vulnerability and Flood Zone Compatibility matrix indicates that “less vulnerable” development proposals in Flood Zone 1 are appropriate.

6.2 Exception test and Policy check.

The site is in an area of flood zone 1, therefore no exception test is required.

6.3 Residual Risks, Flood Mitigation, Resistance and Resilience of Proposed Building

6.3.1 The site has been shown to be at low to very low risk from all forms of flooding.

6.3.2 The residual risk will be from failure of drainage systems on site. A detailed maintenance strategy and regime should be developed during the detailed design stage.

6.3.3 The proposed drainage system will improve upon the existing drainage. The existing drainage for the areas of development have unattenuated flows and therefore have the potential to increase flood risk in lower lying areas, or areas downstream of the adjacent river. The proposed drainage will control flow rates with the use of attenuation devices such as permeable paving, storage tanks and vortex flow devices to mitigate this potential.

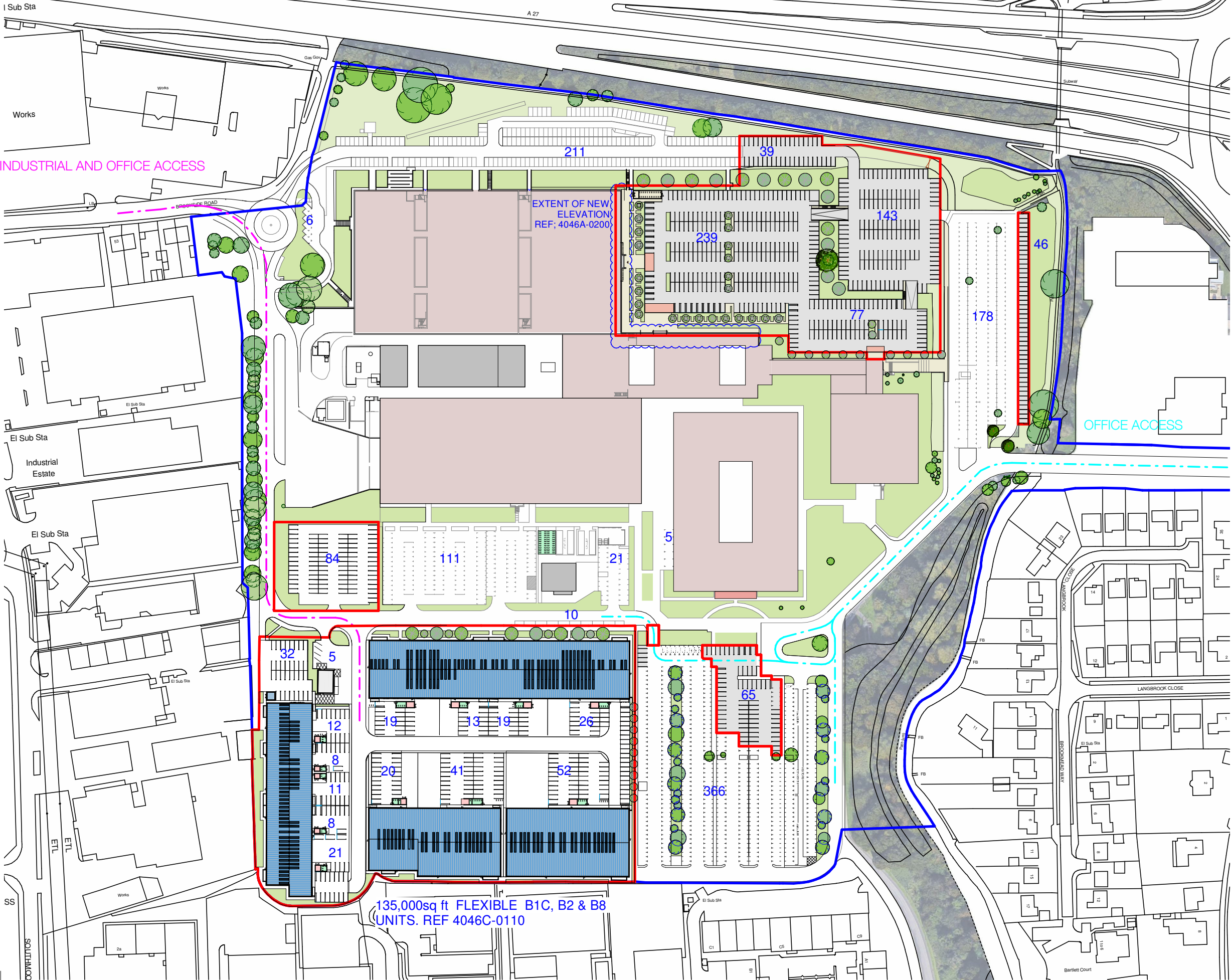
7.0 CONCLUSIONS AND RECOMMENDATIONS

- 7.1** This report gives details of the flood risk assessment, which has been carried out in relation to the proposed redevelopment at Langstone Technology Park, Havant for commercial use.
- 7.2** The site is in flood zone 1. The development is at low risk from all sources of flooding.
- 7.3** It has been shown that improvements can be made to the existing drainage to better manage surface water flow rates and reduce the risk of flooding off site.

APPENDIX A

Proposed Development Plans

Total Site Parking: 1888 (4.5% Disabled)



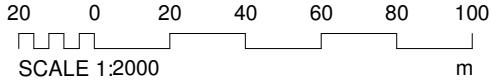
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G 26.06.19 CJ Industrial area and landscape coordinated.

Rev	Date	Init	Notes	Chkd
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Client

Drawing Originator



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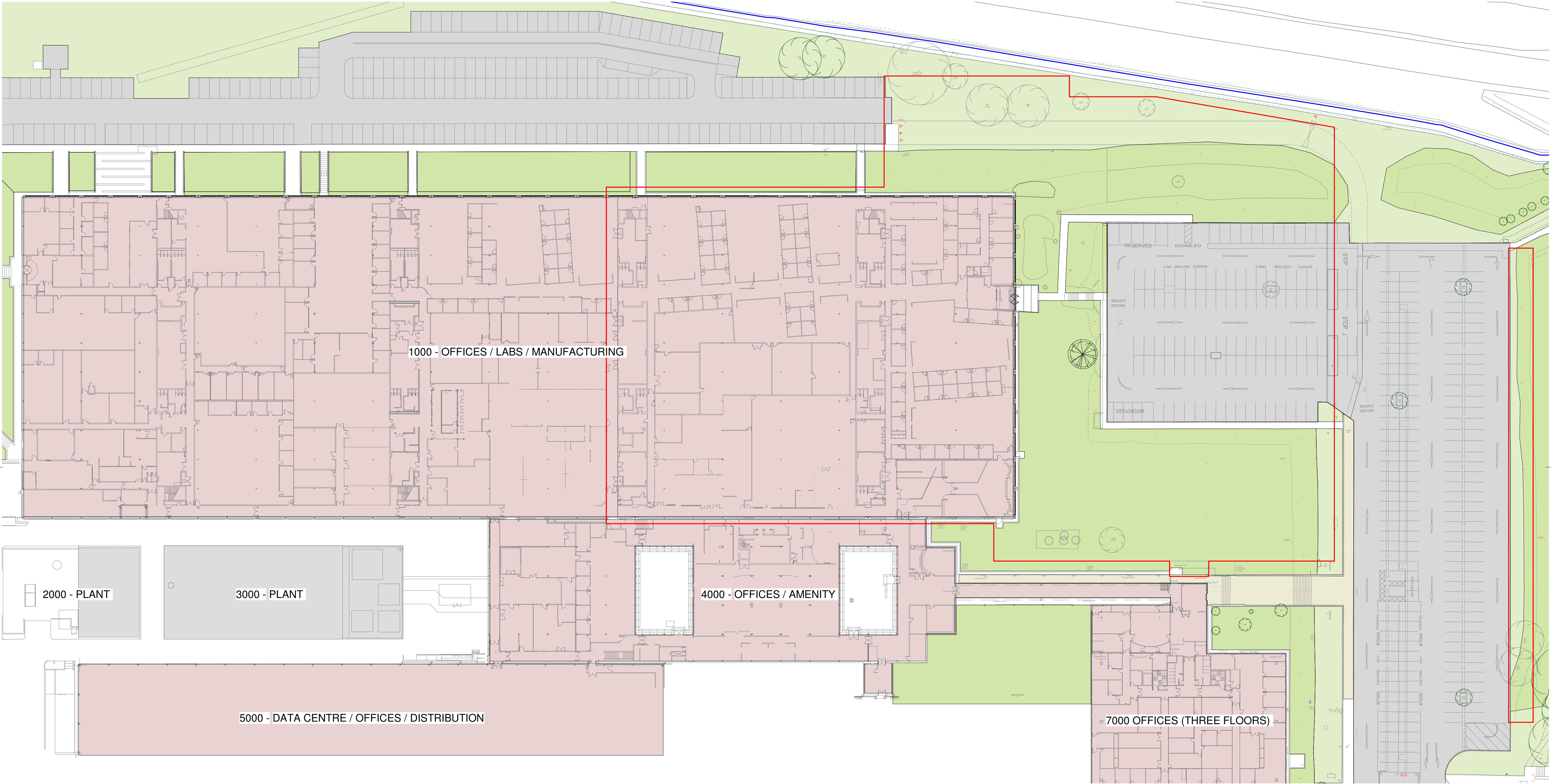
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1000 - Existing Ground Floor Plan
1 : 500

- APPLICATION AREA
- APPLICANT OWNERSHIP BOUNDARY
- EXISTING GIA
- EXISTING CAR PARKING

Rev Date Init Notes Chkd

North

5 0 5 10 15 20 25

SCALE 1:500

Client

Drawing Originator

AWW inspired environments

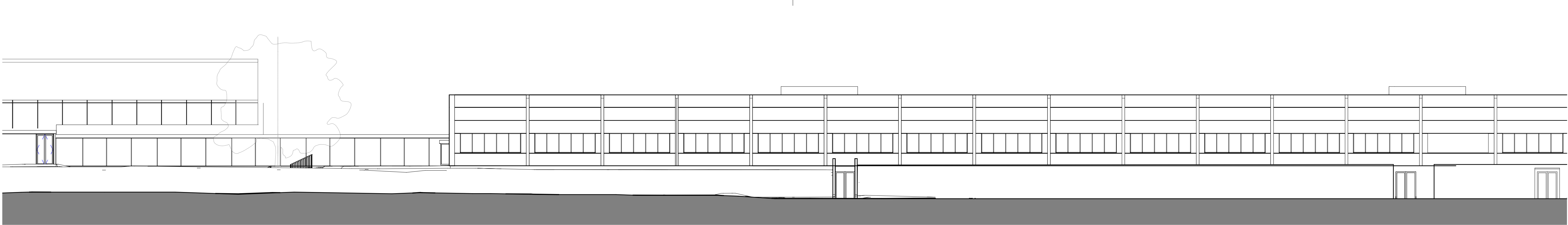
London - 106 Weston Street London SE1 3QB 020 7160 8000
Bristol - Rivergate House, Bristol, BS1 4LS 0117 923 2535
Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282

RIBA Chartered Practice www.aww-uk.com

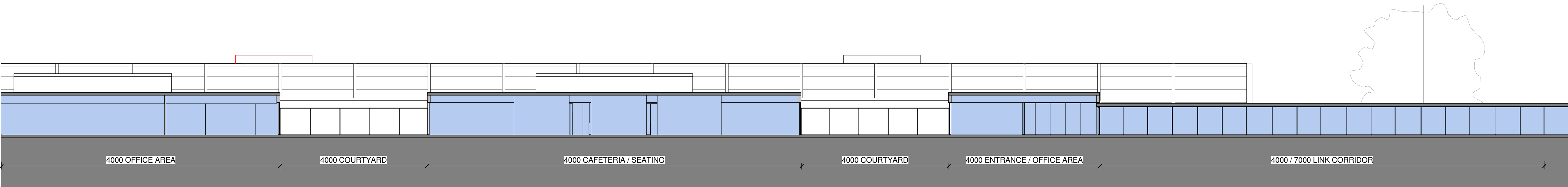
Project Title
**Langstone Technology Park,
Building 1000**

Drawing Title
Existing Ground Floor Plan

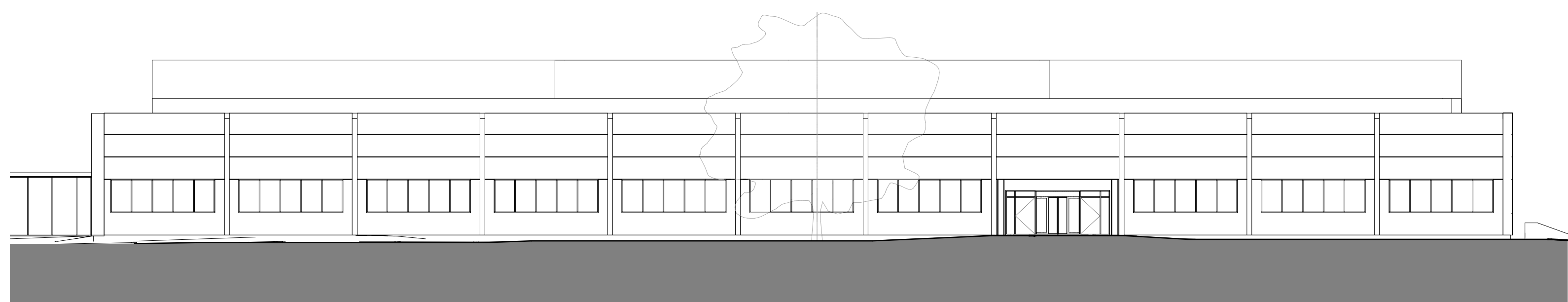
Scale	Sheet	Drawn	Checked	Date
1 : 500	A1	CJ	IJ	14.06.19
Status	Project No.			
PLANNING	4046A			
Drawing Reference	Drawing No.	Revision		
	150			



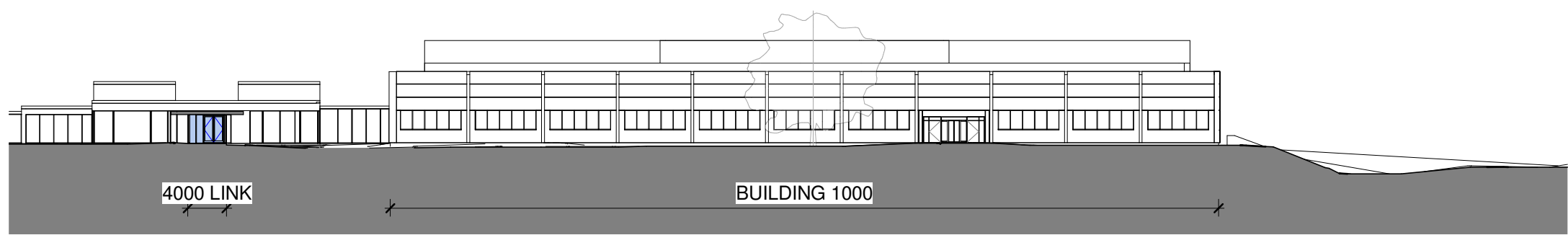
Existing North Elevation 1.200
1 : 200



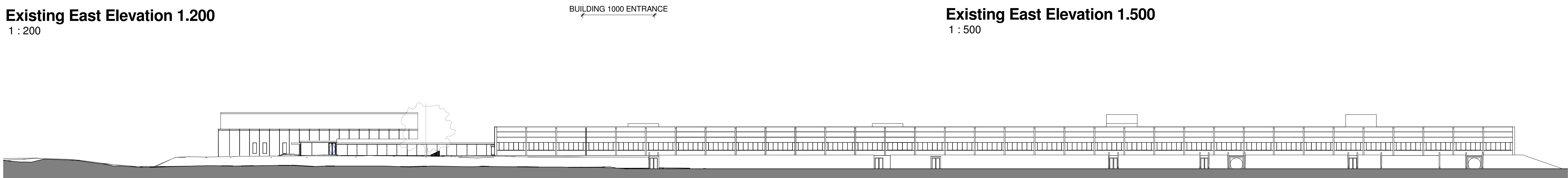
Existing Site Section - Building 1000 South Elevation 1.200
1 : 200



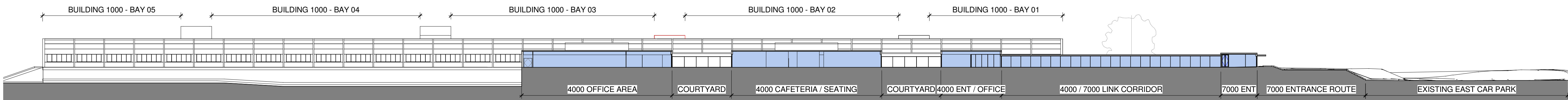
Existing East Elevation 1.200
1 : 200



Existing East Elevation 1.500
1 : 500



Existing North Elevation 1.500
1 : 500



Existing Site Section - Building 1000 South Elevation 1.500
1 : 500

Notes
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Rev Date Init Notes Chkd

2 0 2 4 6 8 10
SCALE 1:200 m

Client

Drawing Originator

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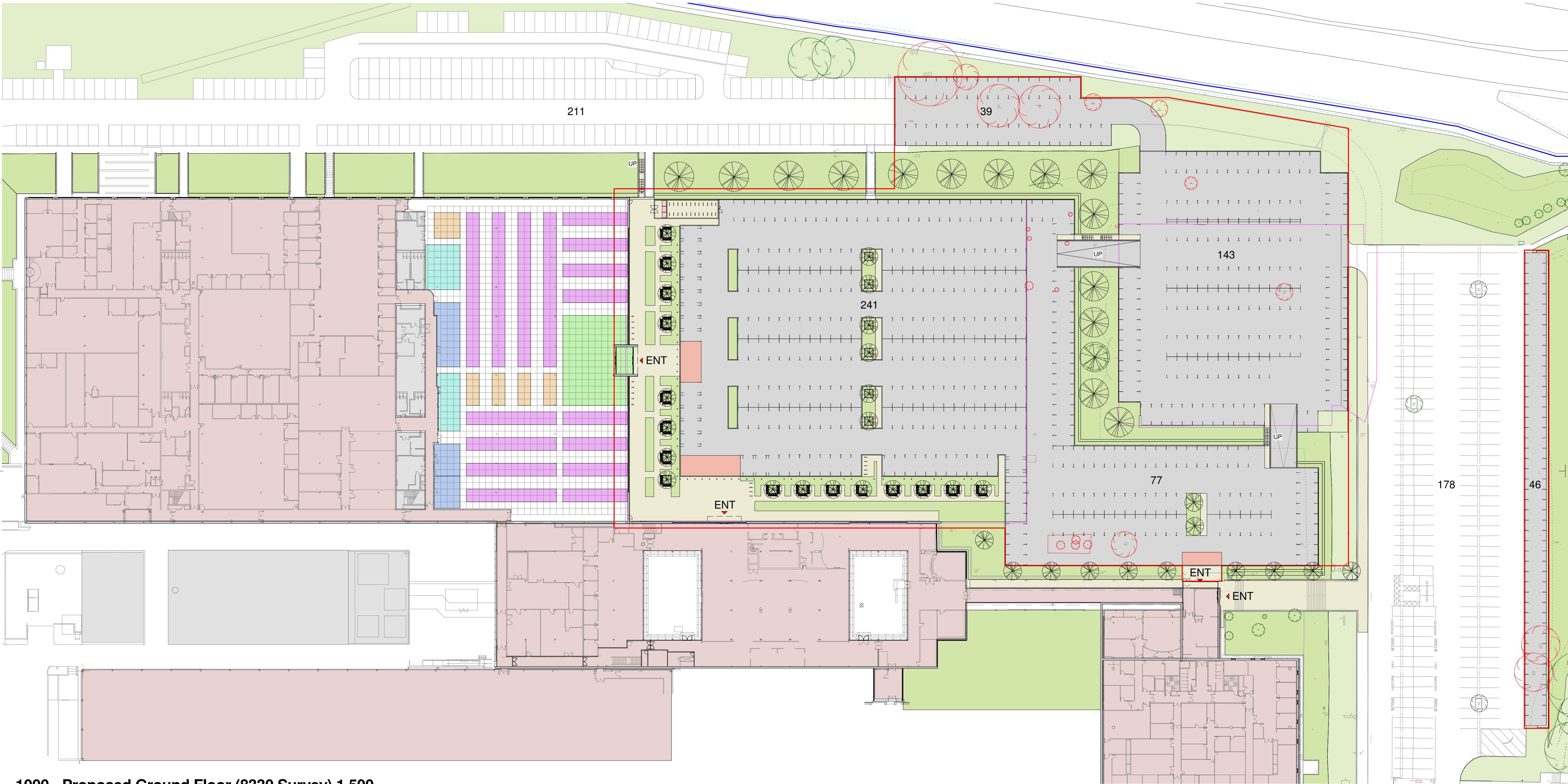
Project Title
**Langstone Technology Park,
Building 1000**

Drawing Title
Existing Elevations

Scale As indicated Sheet A1 Drawn CJ Checked IJ Date 14.06.19

Status	Project No.
PLANNING	4046A
Drawing Reference	Drawing No. Revision
	160

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1000 - Proposed Ground Floor (8330 Survey) 1.500
1 : 500

- APPLICATION AREA
- APPLICANT OWNERSHIP BOUNDARY
- EDGE OF EXISTING SLAB / PARKING AREA
- 1500x1500mm OFFICE GRID
- ELEMENTS REMOVED
- EXISTING GIA
- RECEPTION / ENTRANCE
- OPEN PLAN WORK STATION
- BREAKOUT / INFORMAL
- CONFERENCE / MEETING / FORMAL
- KITCHEN / WC / SERVICES
- EXISTING CORE (PLANT / WC / ST)

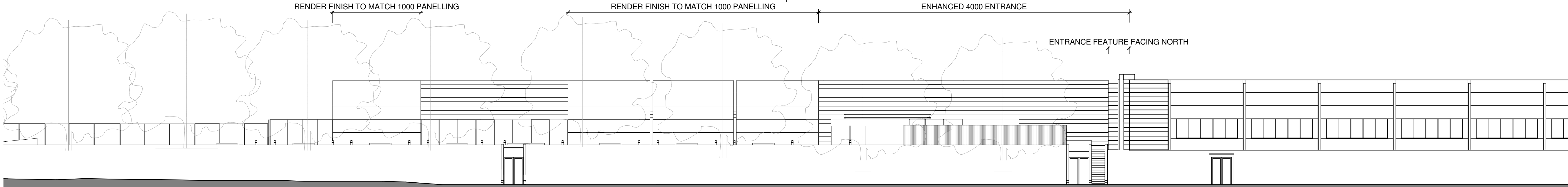
Rev	Date	Init	Notes	Chkd
1				
2				
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23				
24				
25				

Drawing Originator
AWW inspired environments
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Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
RIBA Chartered Practice www.aww-uk.com

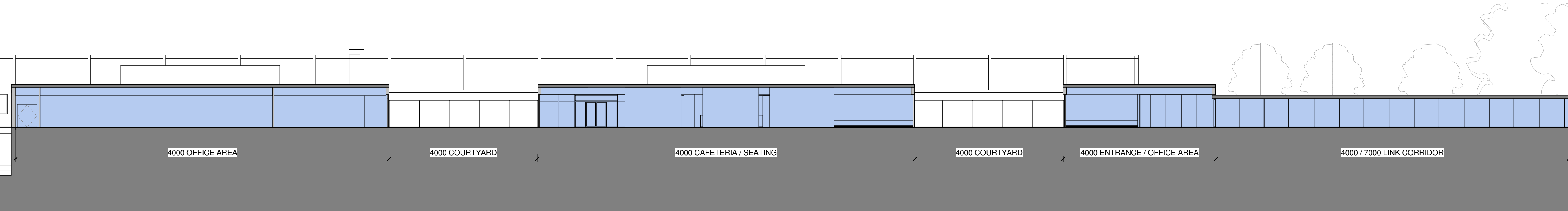
Project Title
**Langstone Technology Park,
Building 1000**

Drawing Title
Proposed Ground Floor Plan

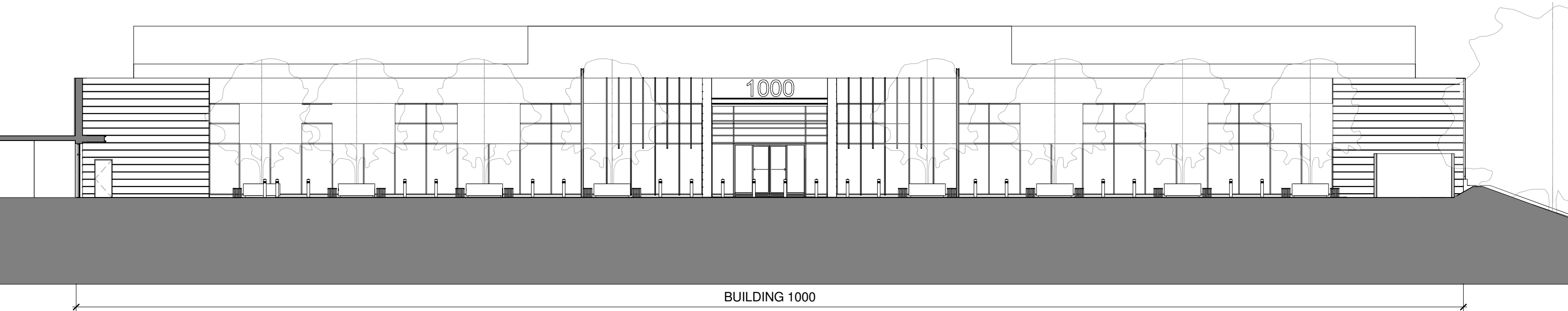
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1 : 500	A1	CJ	IJ	14.06.19
Status	Project No.	Drawing No.	Revision	
PLANNING	4046A	200		



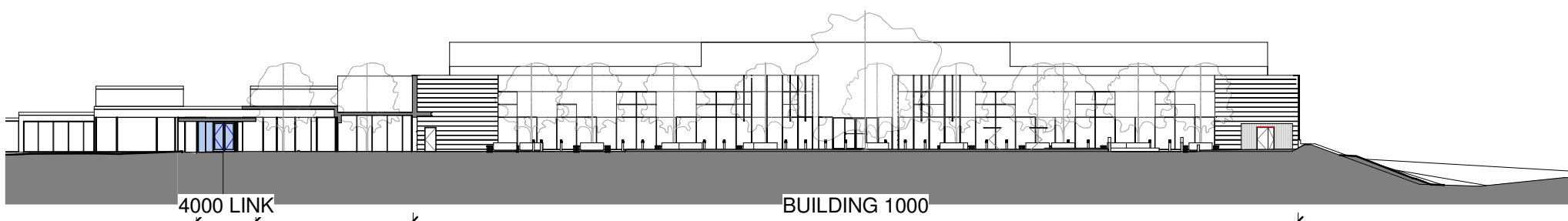
North Elevation Proposed 1.200
1 : 200



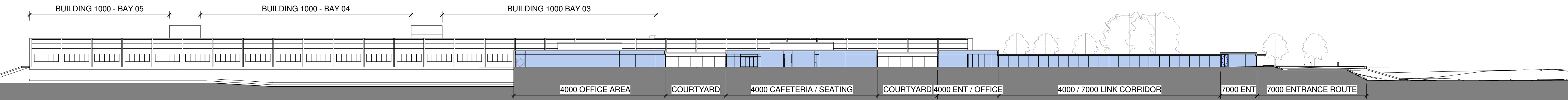
Proposed Site Section - Building 1000 South Elevation 1.200
1 : 200



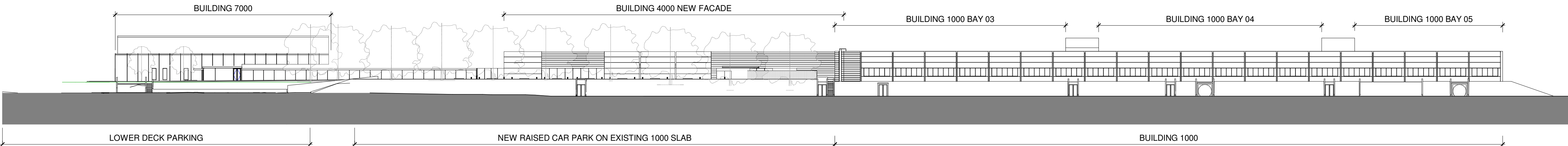
Proposed East Elevation 1.200
1 : 200



Proposed East Elevation 1.500
1 : 500



Proposed Site Section - Building 1000 South Elevation 1.500
1 : 500



North Elevation Proposed 1.500
1 : 500

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Rev	Date	Init	Notes	Chkd		
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SCALE 1:200						m

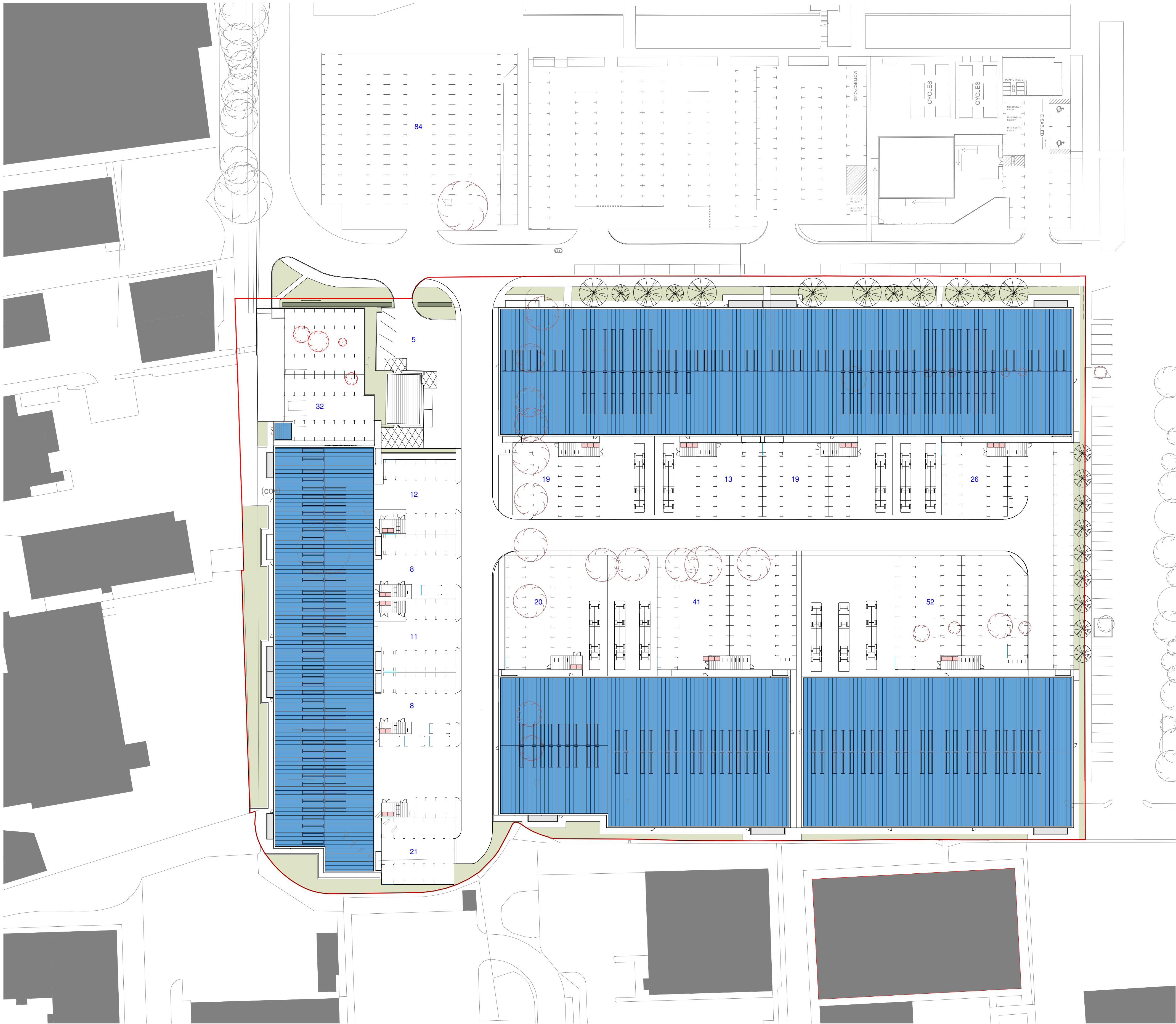
Client

Drawing Originator
AWW inspired environments
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Bristol - Rivergate House, Bristol, BS1 4LS 0117 923 2535
Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
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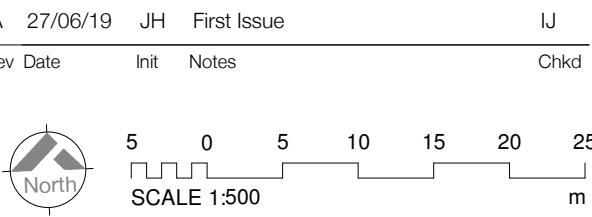
Project Title
Langstone Technology Park, Building 1000

Drawing Title
Proposed Elevations

Scale	Sheet	Drawn	Checked	Date
As indicated	A1	CJ	IJ	14.06.19
Status	Project No. 4046A			
Drawing Reference	Drawing No. 300			



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Client

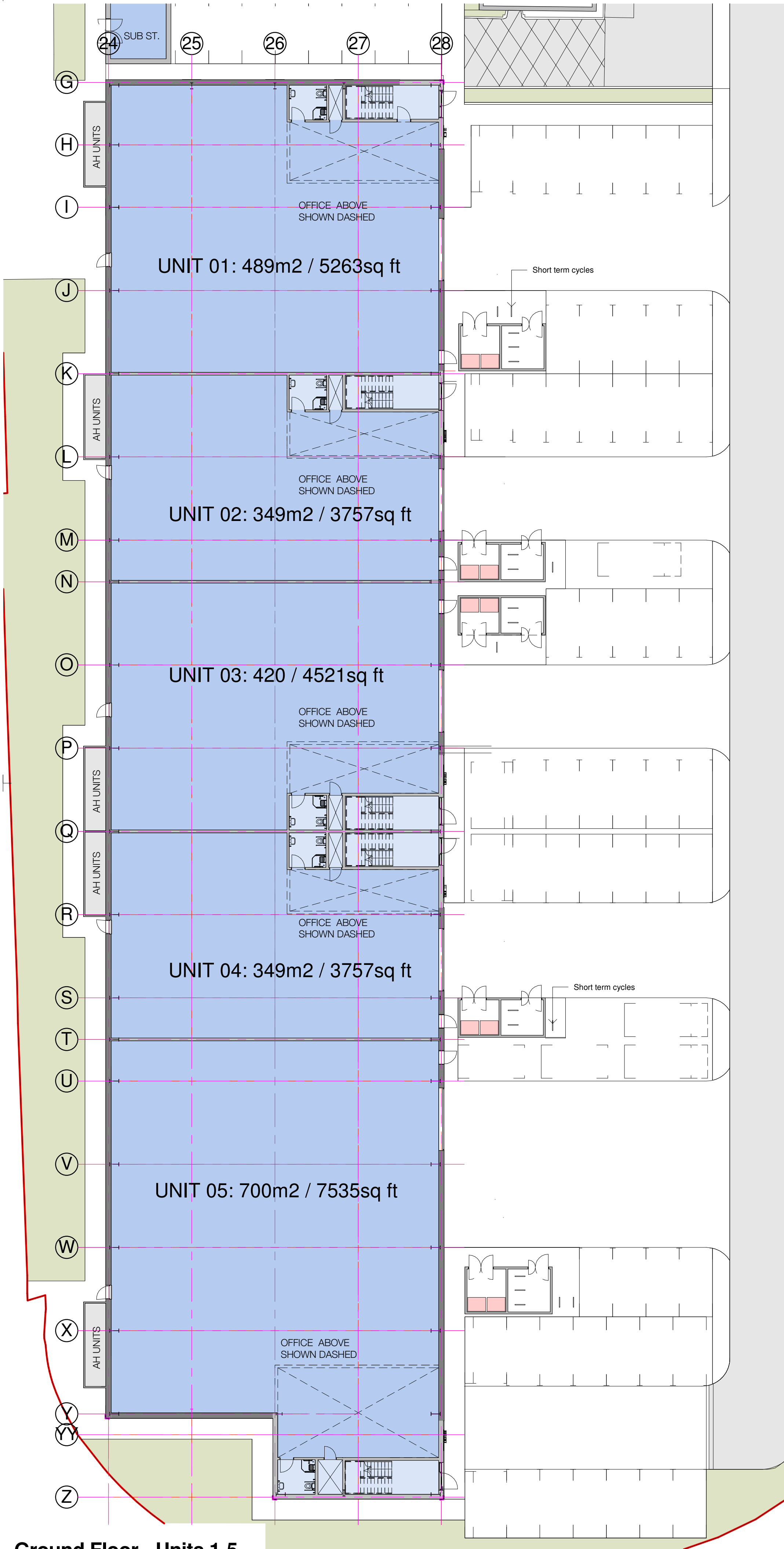
Drawing Originator

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Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
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Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

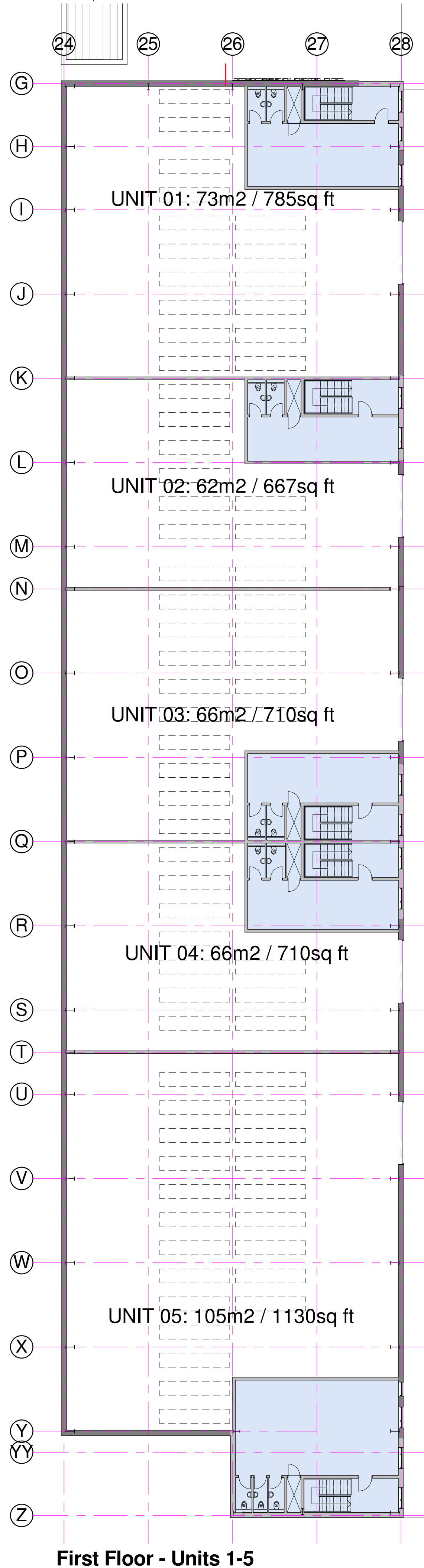
Drawing Title
Site Plan

Scale 1 : 500	Sheet A1	Drawn CJ	Checked IJ	Date 04.06.91
Status PLANNING	Project No. 4046C			
Drawing Reference	Drawing No. 0110	Revision A		



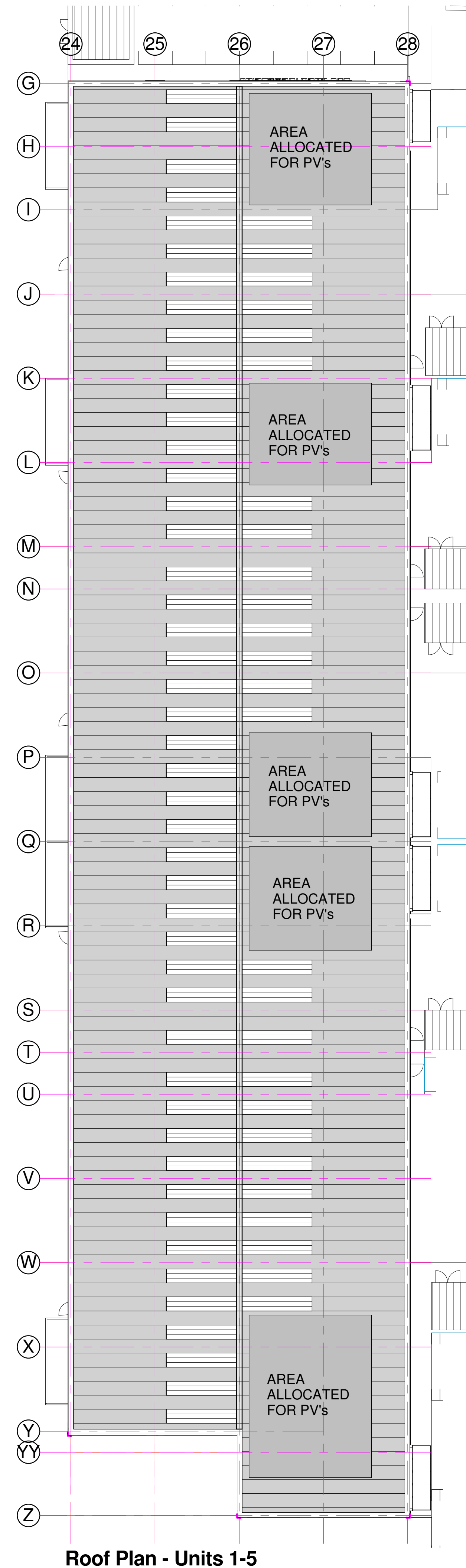
Ground Floor - Units 1-5

1 : 200



First Floor - Units 1-5

1 : 200



Roof Plan - Units 1-5

1 : 200

Notes
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A	27/06/19	JH	First Issue	IJ
Rev	Date	Init	Notes	Chkd
 2 0 2 4 6 8 10 SCALE 1:200 m				

Client

Drawing Originator

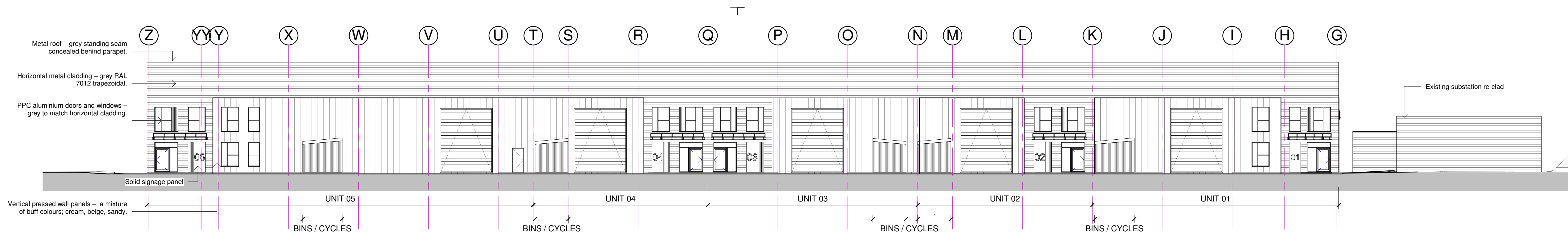
AWW inspired environments
London - 106 Weston Street London SE1 3QB 020 7160 6000
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Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

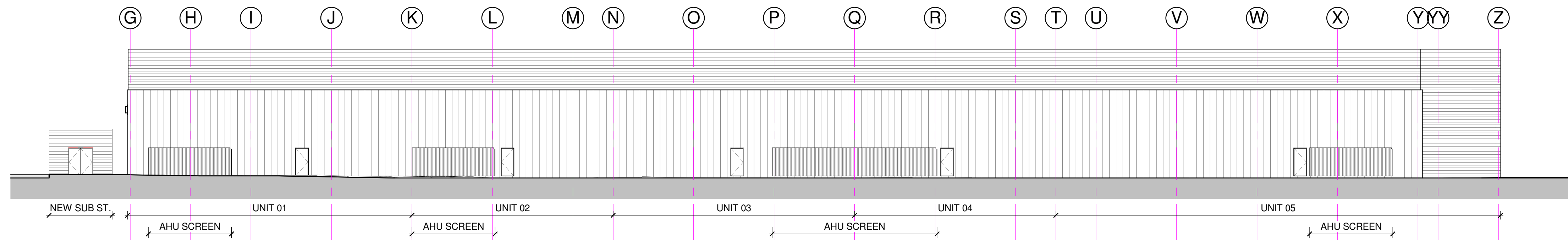
Drawing Title
Units 01 - 05 Floor Plans

Scale 1 : 200	Sheet A1	Drawn CJ	Checked IJ	Date 29.05.19
Status PLANNING	Project No. 4046C			
Drawing Reference	Drawing No. 0200	Revision A		

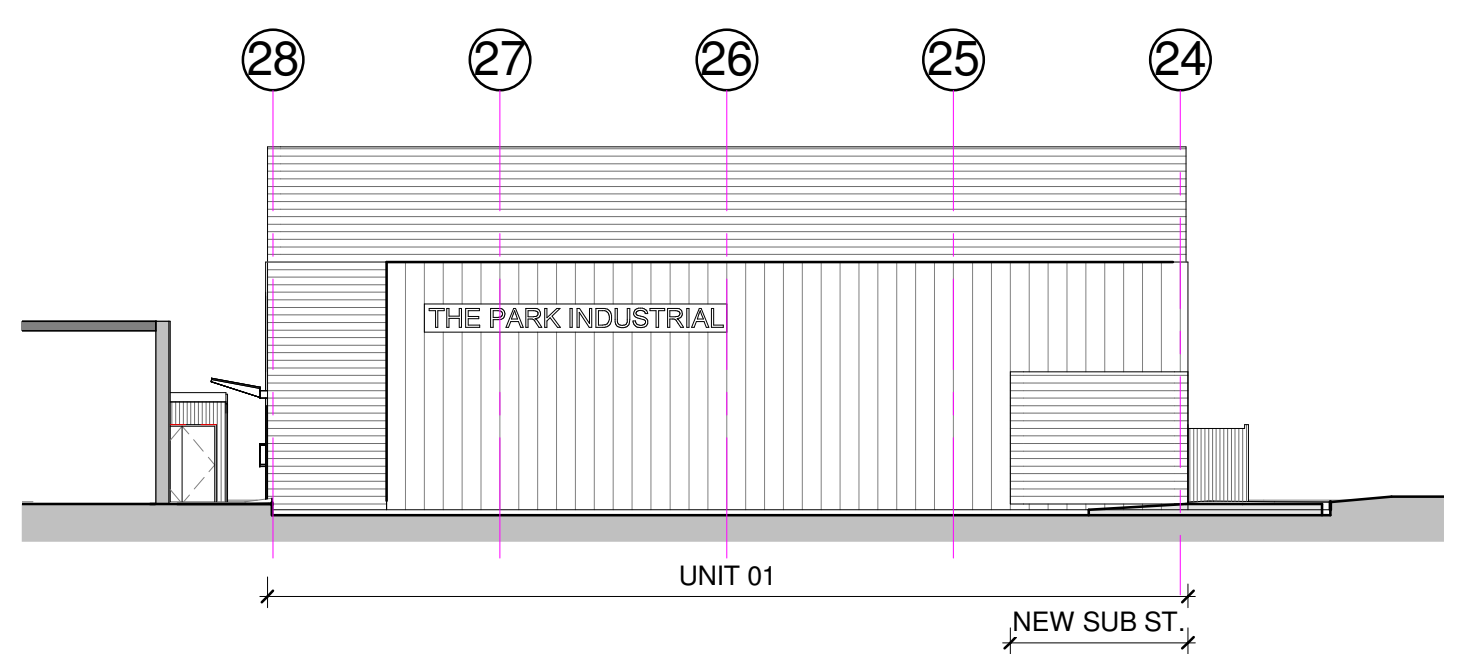
Notes
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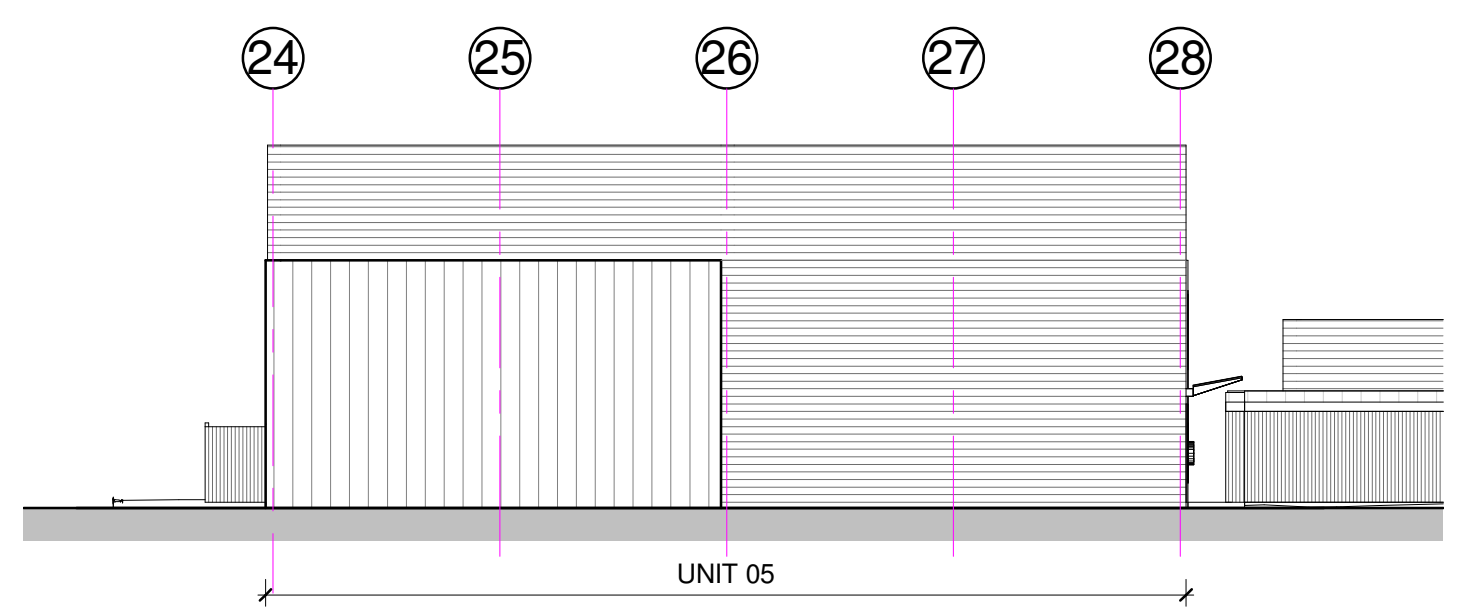
Units 01-05 East Elevation
1 : 200



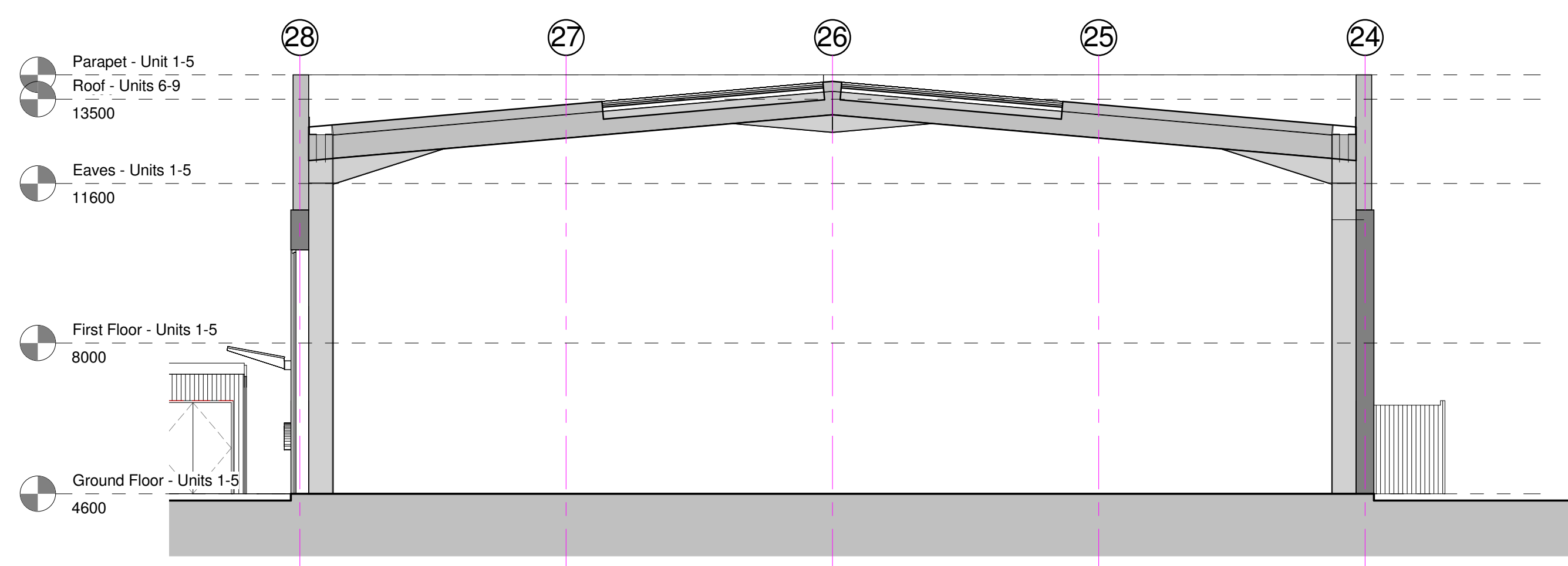
Units 01-05 West Elevation
1 : 200



Units 01-05 North Elevation
1 : 200



Units 01-05 South Elevation
1 : 200

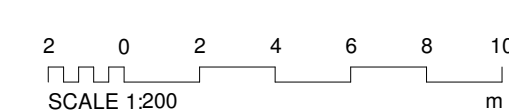


Units 1-5 Warehouse Section
1 : 100



Unit 05 Section - Staircore
1 : 100

C	01.07.19	CJ	Annotations updated.	
B	28/06/19	JH	Minor updates	IJ
A	27/06/19	JH	First Issue	IJ
Rev	Date	Init	Notes	Chkd



Client

Drawing Originator

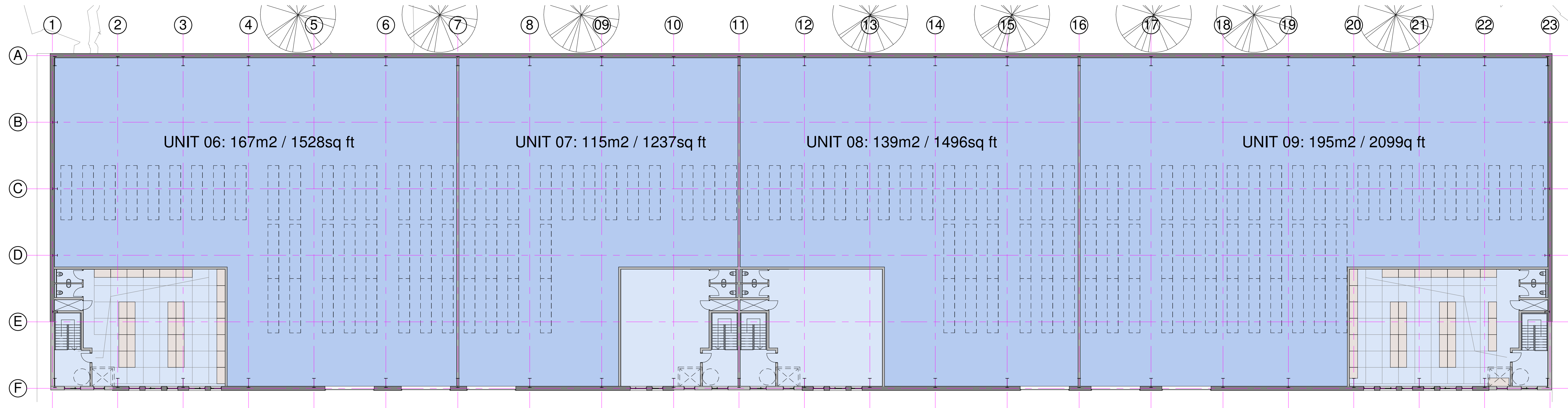
AWW inspired environments
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Bristol - Rivergate House, Bristol, BS1 4LS 0117 923 2535
Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
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Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

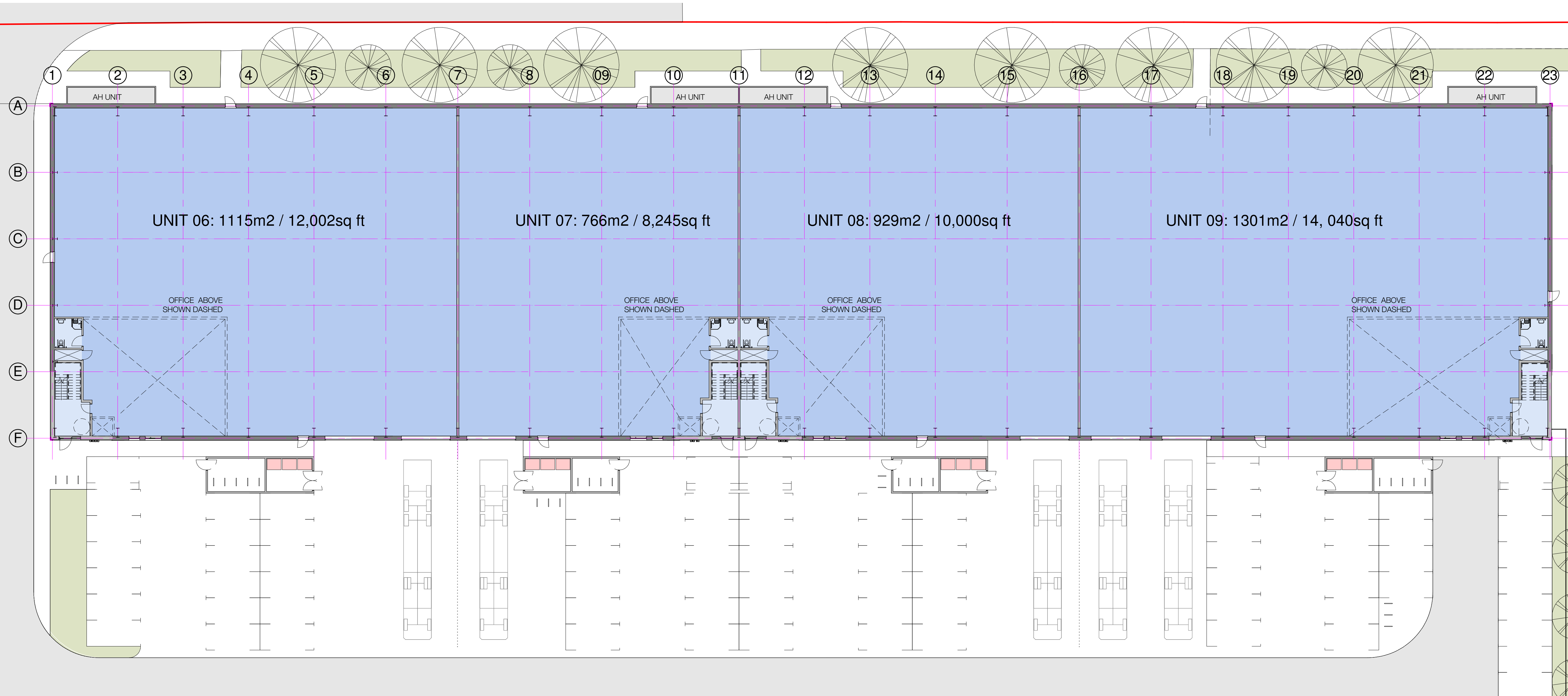
Drawing Title
**Units 01-05 Elevations and Typical
Section**

Scale	As indicated	Sheet	A1	Drawn	CJ	Checked	IJ	Date	03.06.19
Status	PLANNING		Project No.		4046C				
Drawing Reference			Drawing No.		0205		Revision		C

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First Floor - Units 6-9
1 : 200



GF - Units 6-9
1 : 200

Rev Date Init Notes Chkd

C	01.07.19	CJ	Unit 6 elevation and annotations updated.	IJ
B	29/06/19	JH	Minor updates	IJ
A	27/06/19	JH	First Issue	IJ

SCALE 1:200

North

2 0 2 4 6 8 10 m

Client

Drawing Originator

AWW inspired environments

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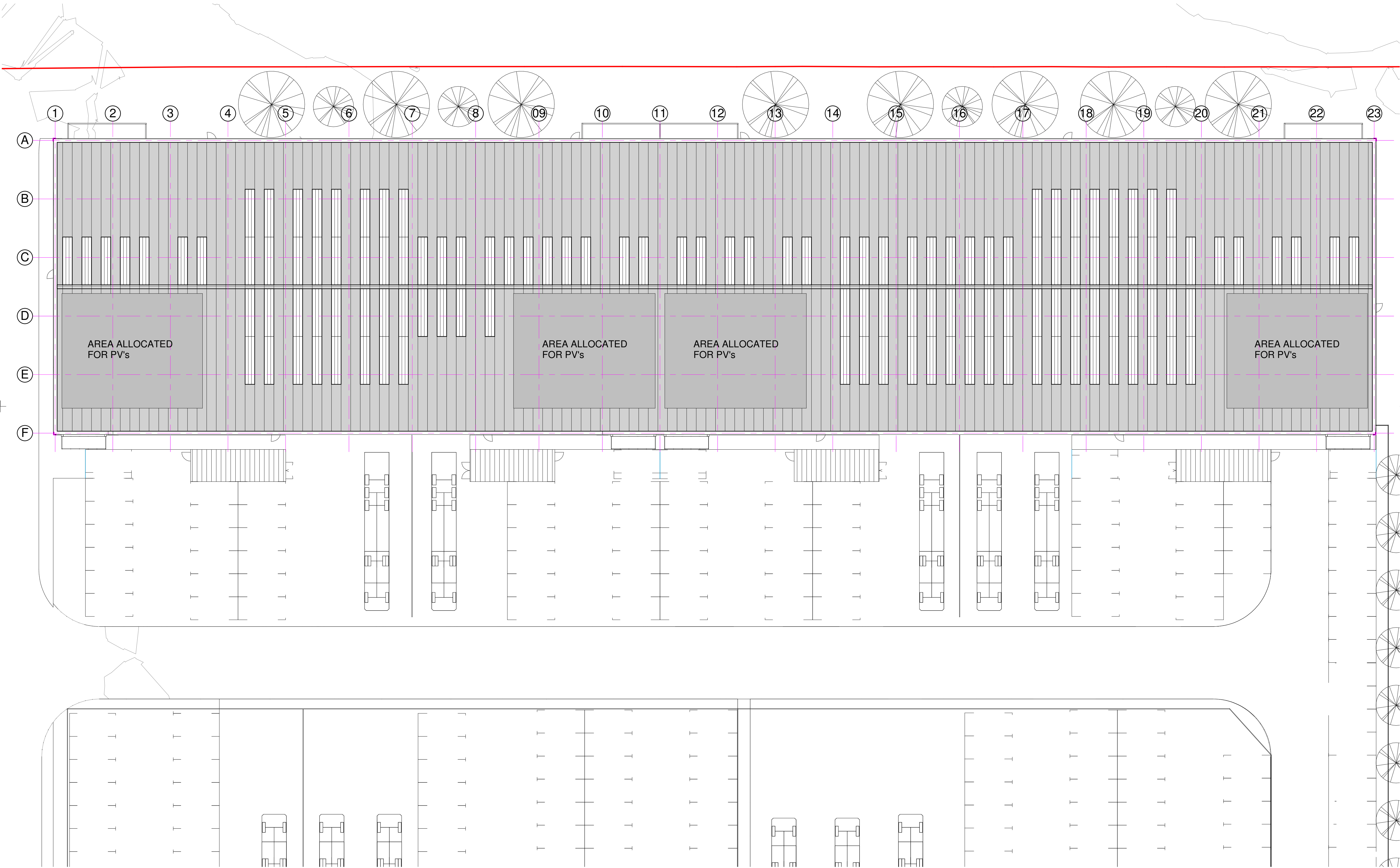
RIBA Chartered Practice www.aww-uk.com

Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

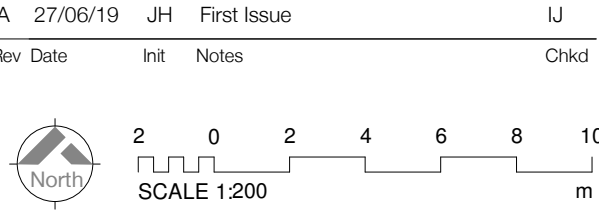
Drawing Title
Units 06 - 09 Floor Plans

Scale	Sheet	Drawn	Checked	Date
1 : 200	A1	CJ	IJ	30.05.19
Status	Project No.			
PLANNING	4046C			
Drawing Reference	Drawing No.	Revision		
	0210	C		

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Units 06- 09 Roof Plan
1 : 200



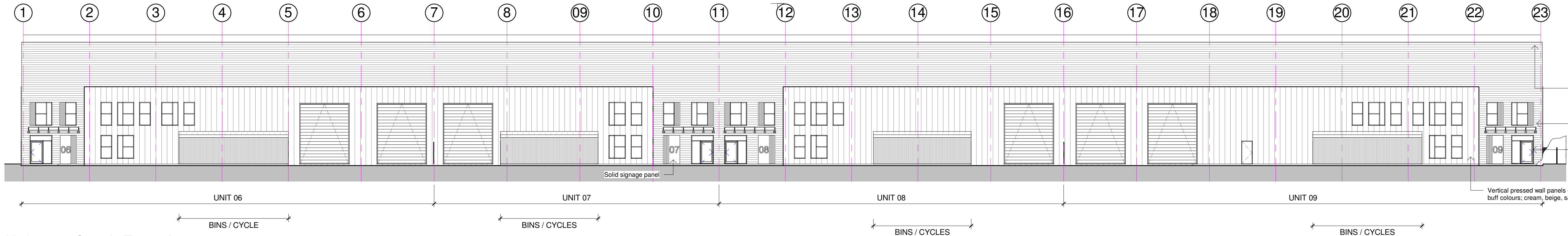
Client

Drawing Originator
AWW inspired environments
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Bristol - Rivergate House, Bristol, BS1 4LS 0117 923 2535
Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
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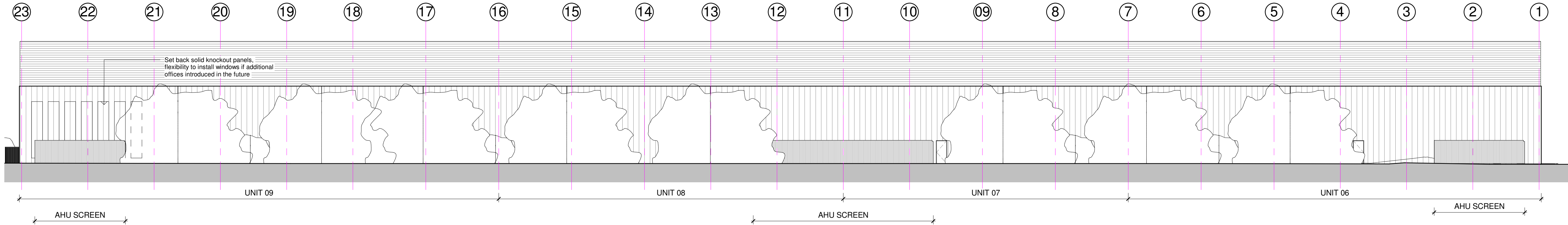
Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

Drawing Title
Units 06 - 09 Roof Plan

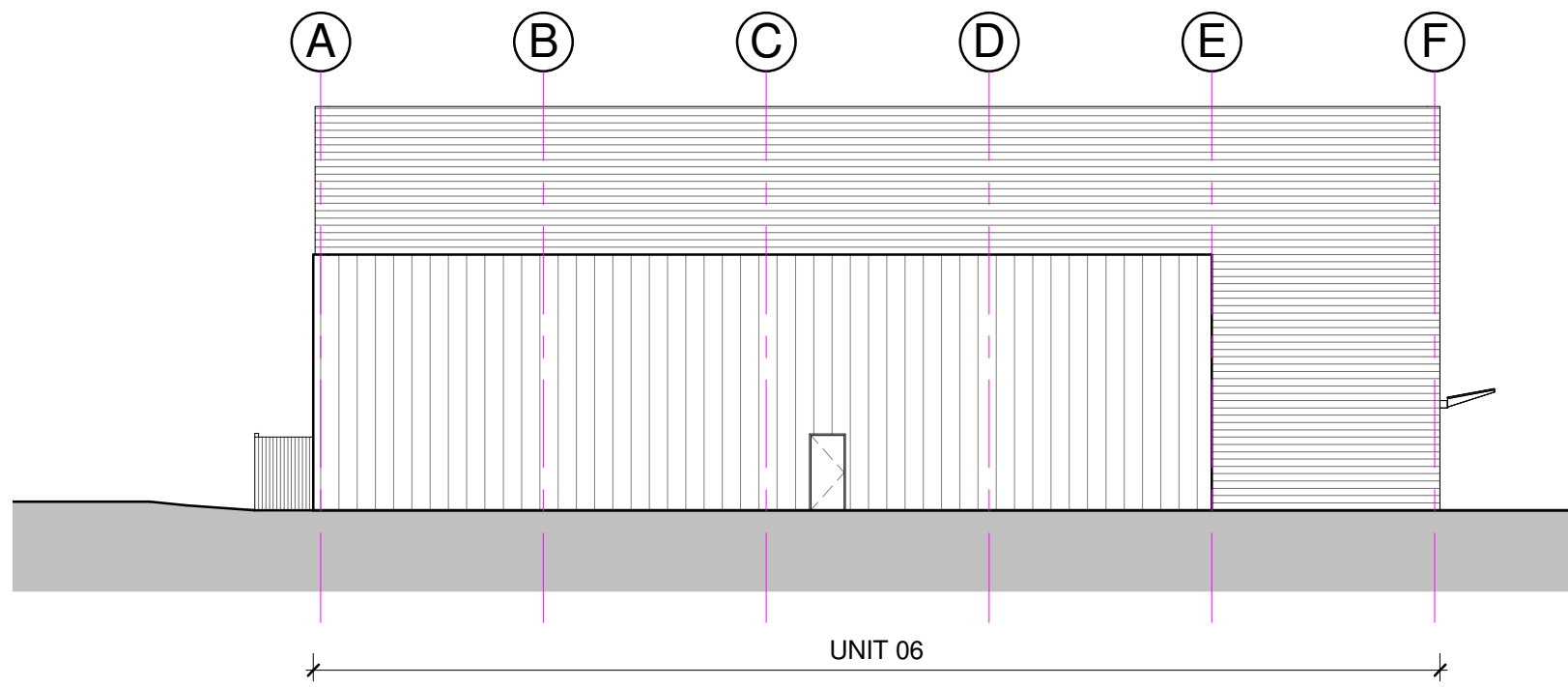
Scale 1 : 200	Sheet A1	Drawn CJ	Checked LJ	Date 04.06.19
Status PLANNING	Project No. 4046C			
Drawing Reference	Drawing No. 0211	Revision A		



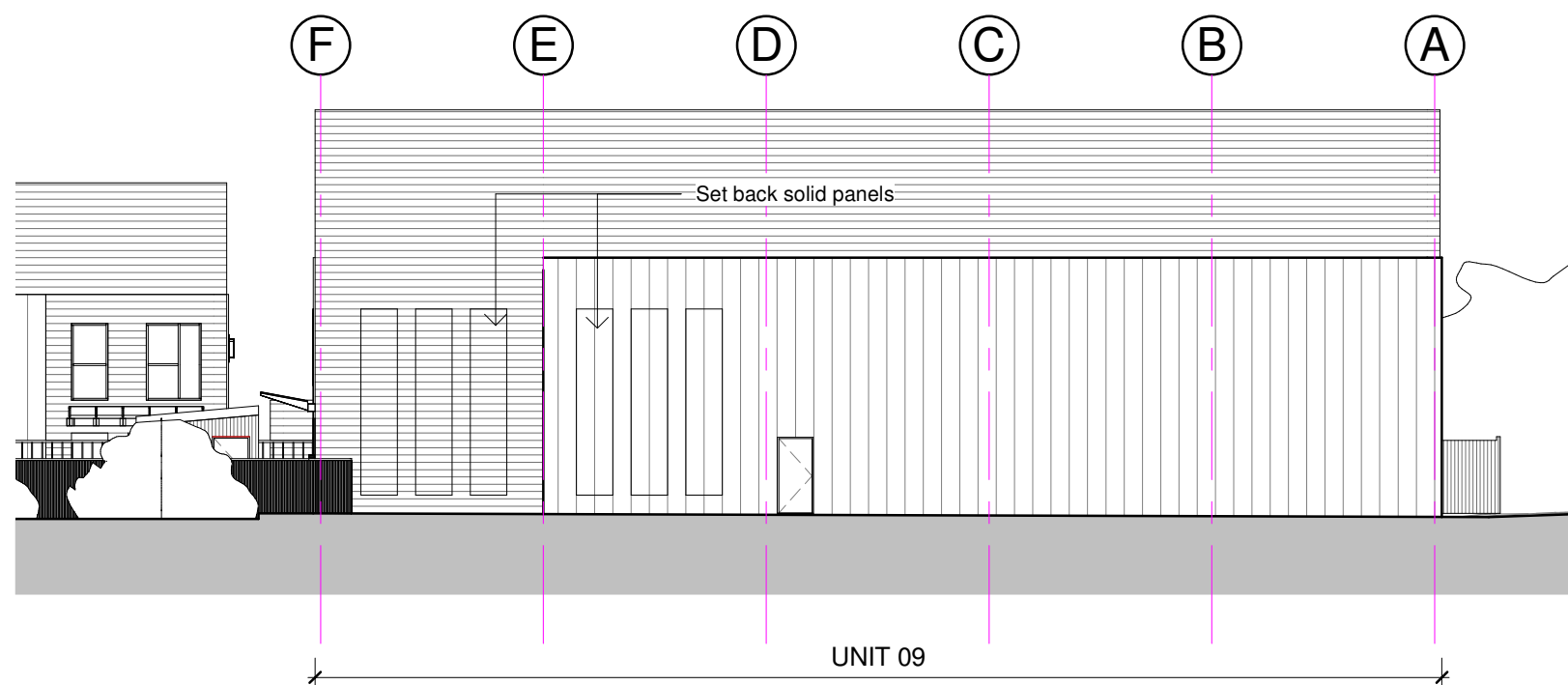
Units 6-9 South Elevation
1 : 200



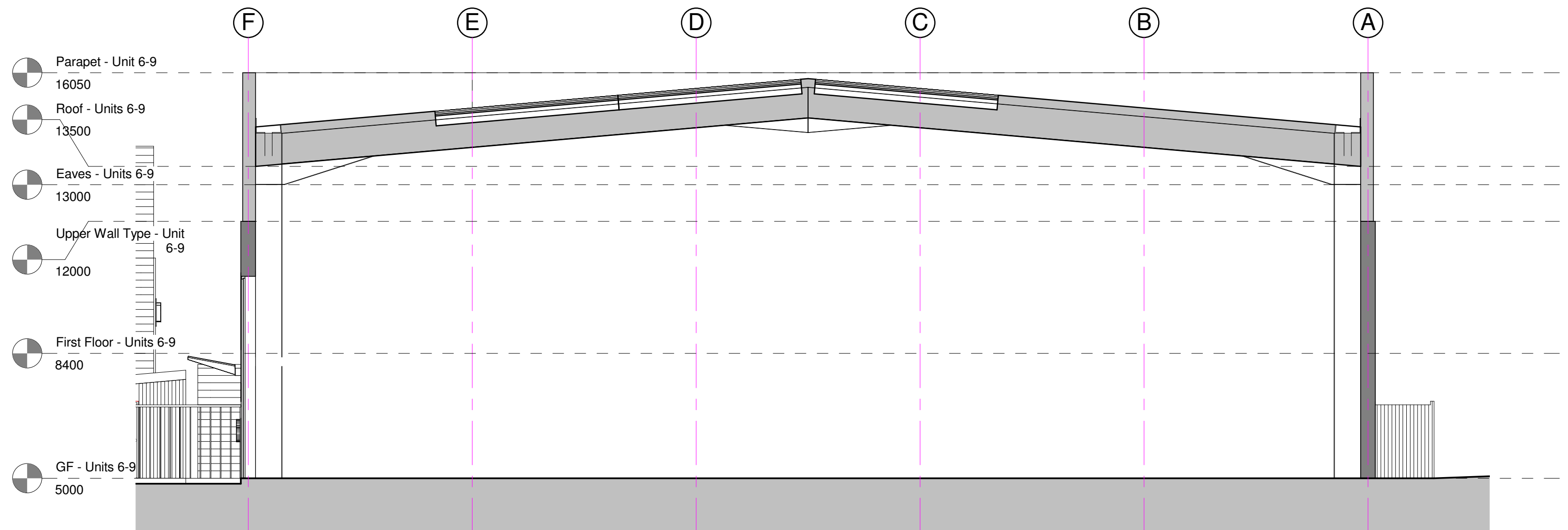
Units 6-9 North Elevation
1 : 200



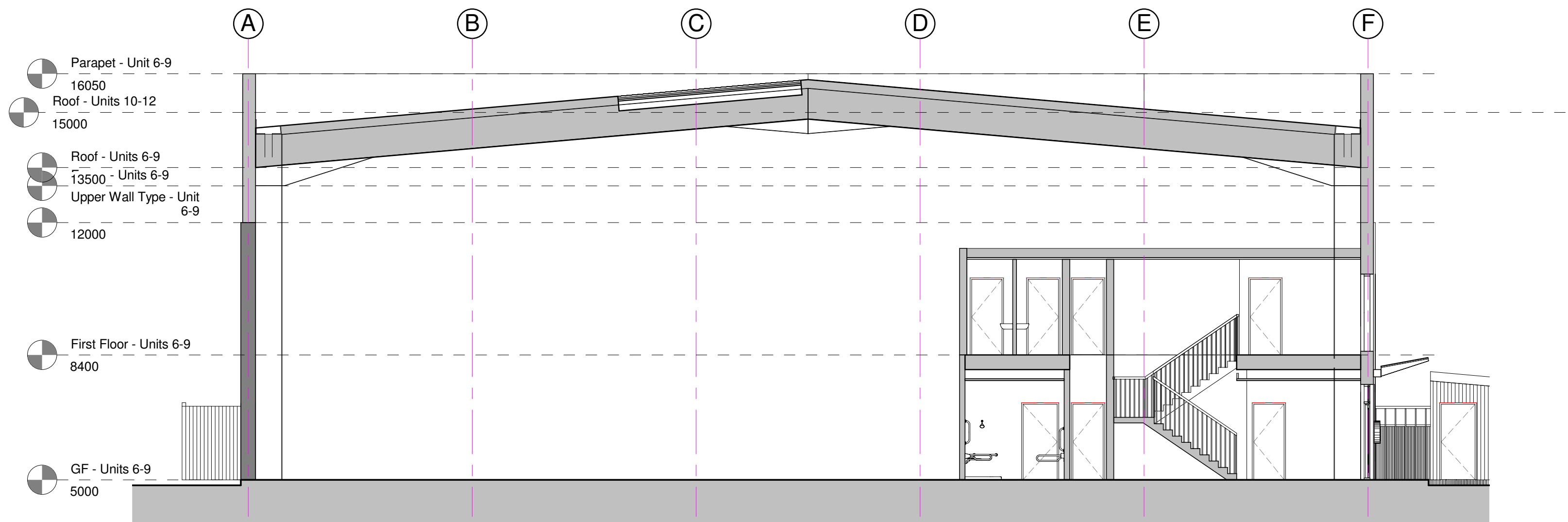
Units 6-9 West Elevation
1 : 200



Units 6-9 East Elevation
1 : 200



Units 6-9 Warehouse Section
1 : 100



Unit 06 Section - Staircore
1 : 100

Notes
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Metal roof – grey standing seam concealed behind parapet.

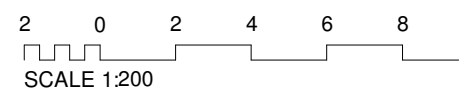
Horizontal metal cladding – grey RAL 7012 trapezoidal.

PPC aluminium doors and windows – grey to match horizontal cladding.

Vertical pressed wall panels – a mixture of buff colours: cream, beige, sandy.

C	01.07.19	CJ	Unit 6 elevation and annotations updated.	IJ
B	29/06/19	JH	Minor updates	IJ
A	27/06/19	JH	First Issue	IJ

Rev	Date	Init	Notes	Chkd
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Client

Drawing Originator

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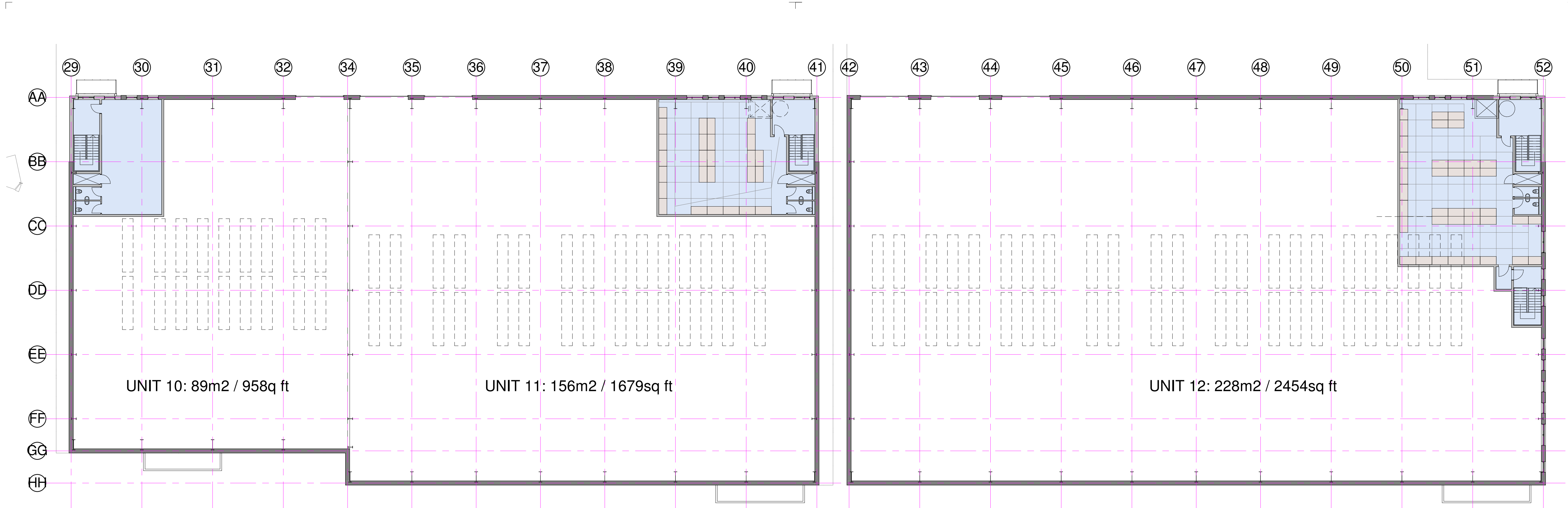
Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

Drawing Title
**Units 06 - 09 Elevations and
Typical Section**

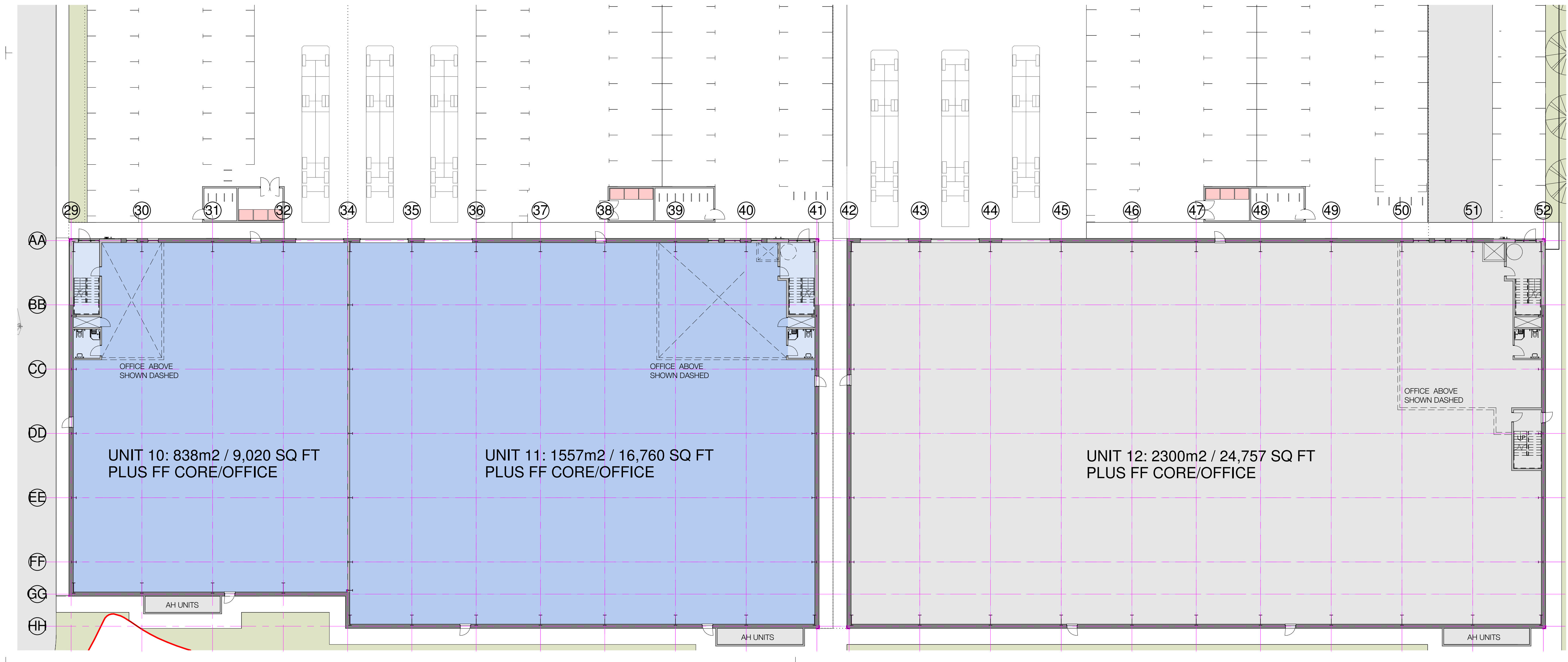
Scale	Sheet	Drawn	Checked	Date
As indicated	A1	CJ	IJ	30.05.19

Status	Project No.
PLANNING	4046C

Drawing Reference	Drawing No.	Revision
	0215	C



Notes
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C 01.07.19 CJ Units 11 and 12 elevations and annotations updated. IJ
B 29/06/19 JH Minor updates IJ
A 27/06/19 JH First Issue IJ

Rev Date Init Notes Chkd

North
2 0 2 4 6 8 10
SCALE 1:200
m

Client

Drawing Originator

AWW inspired environments
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Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

Drawing Title
Units 10 - 12 Floor Plans

Scale
1 : 200

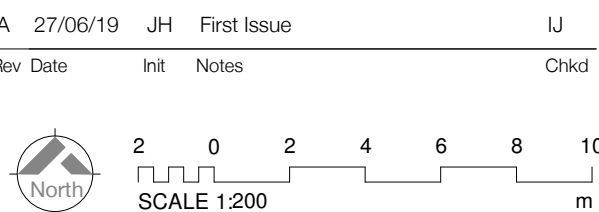
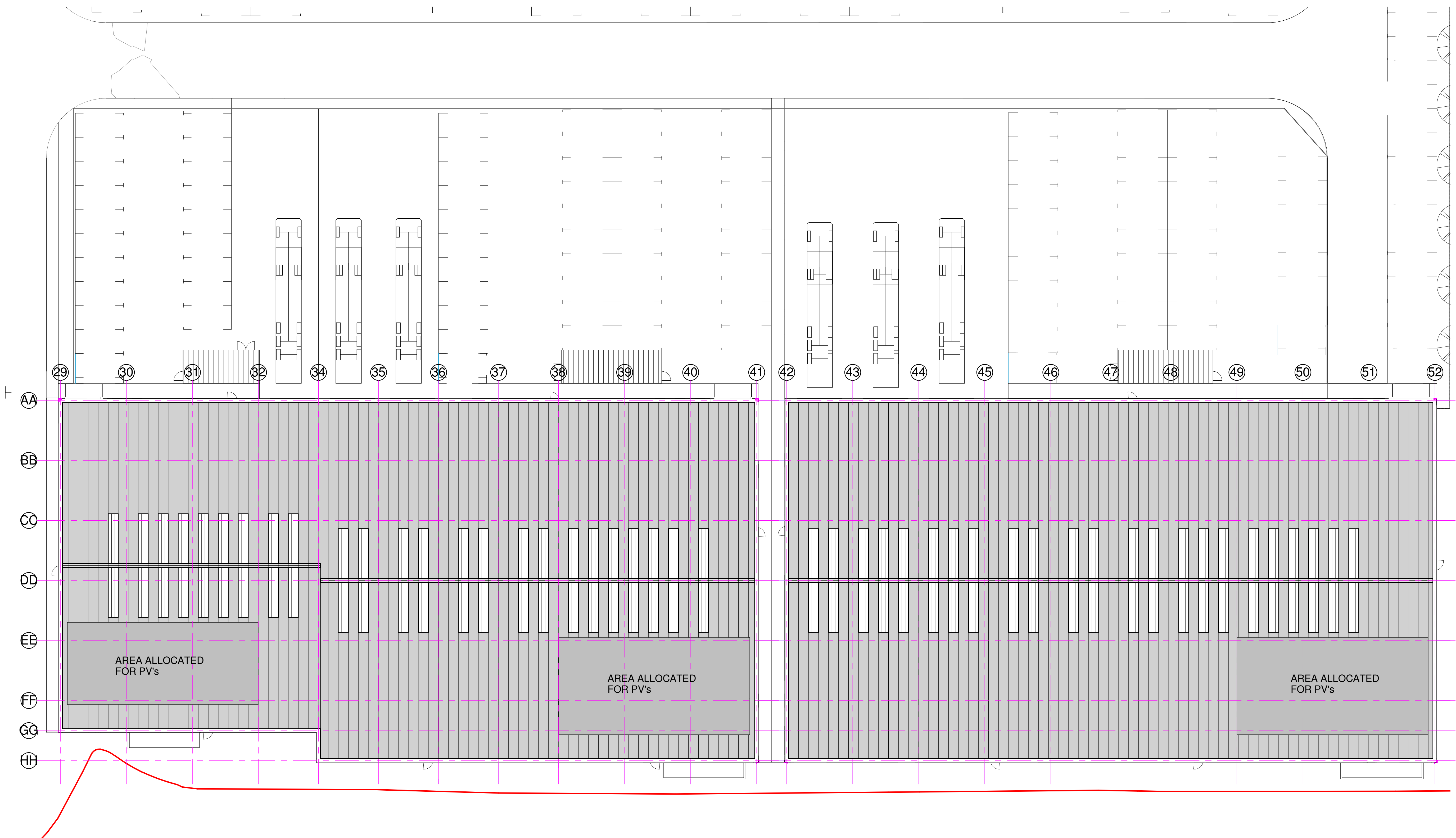
Status
PLANNING

Drawing Reference
0220

Project No.
4046C

Revision
C

Notes
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Client

Drawing Originator
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Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
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Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

Drawing Title
Units 10 - 12 Roof Plan

Units 10 - 12 Roof Plan
1 : 200

Scale	Sheet	Drawn	Checked	Date
1 : 200	A1	CJ	IJ	04.06.19
Status	Project No.			
PLANNING	4046C			
Drawing Reference	Drawing No.	Revision		
	0221	A		



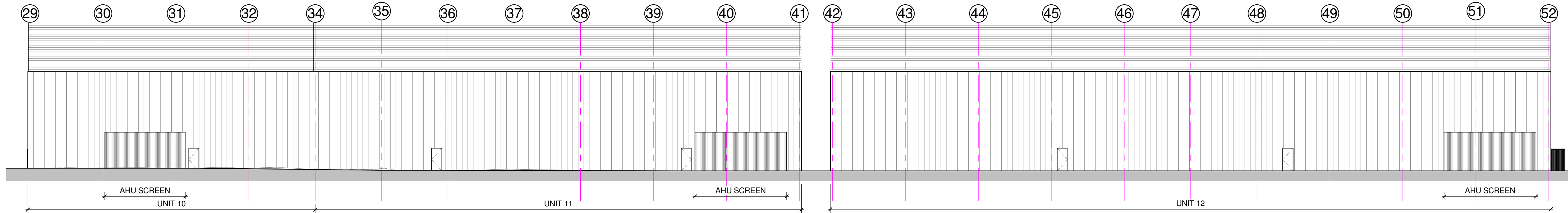
Notes
This drawing may be scaled for the purposes of Planning Applications, Land Registry and for Legal plans where the scale bar is used, and where it verifies that the drawing is an original or an accurate copy. It may not be scaled for construction purposes.
Always refer to figured dimensions. All dimensions are to be checked on site. Discrepancies and/or ambiguities between this drawing and information given elsewhere must be reported immediately to this office for clarification before proceeding. All drawings are to be used in conjunction with the specification and all works to be carried out in accordance with latest British Standards / Codes of Practice.

Metal roof – grey standing seam concealed behind parapet.

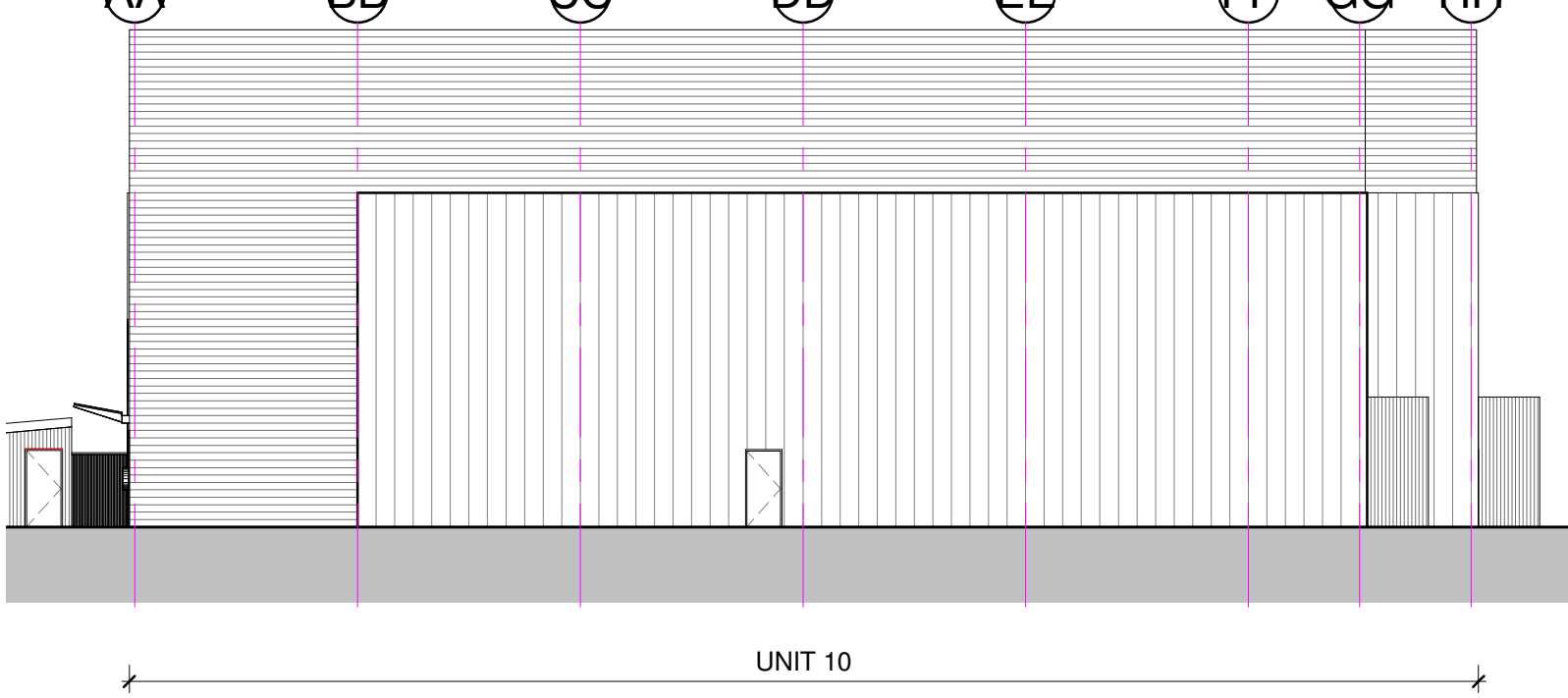
Horizontal metal cladding – grey RAL 7012 trapezoidal.

PPC aluminium doors and windows – grey to match horizontal cladding.

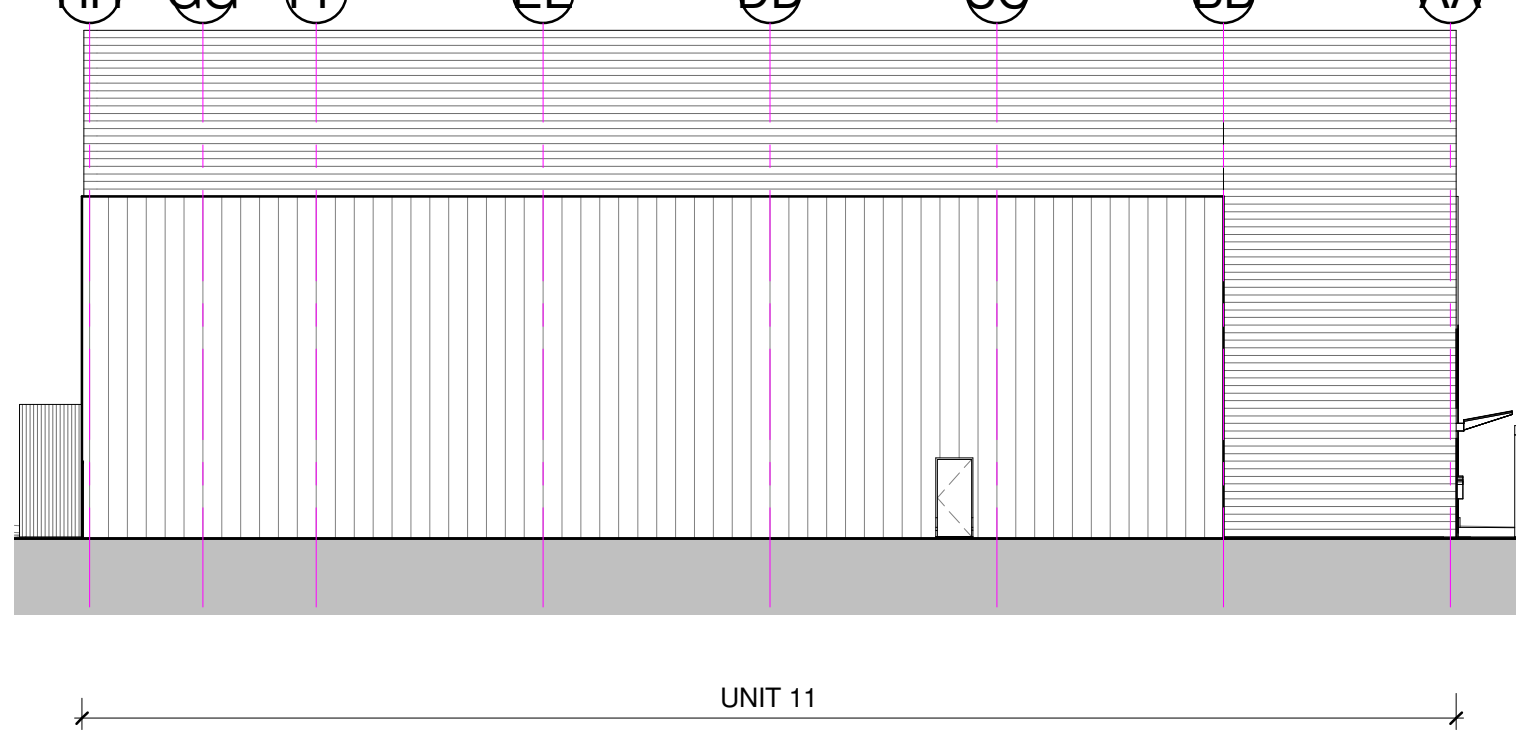
Units 10-12 North Elevation
1 : 200



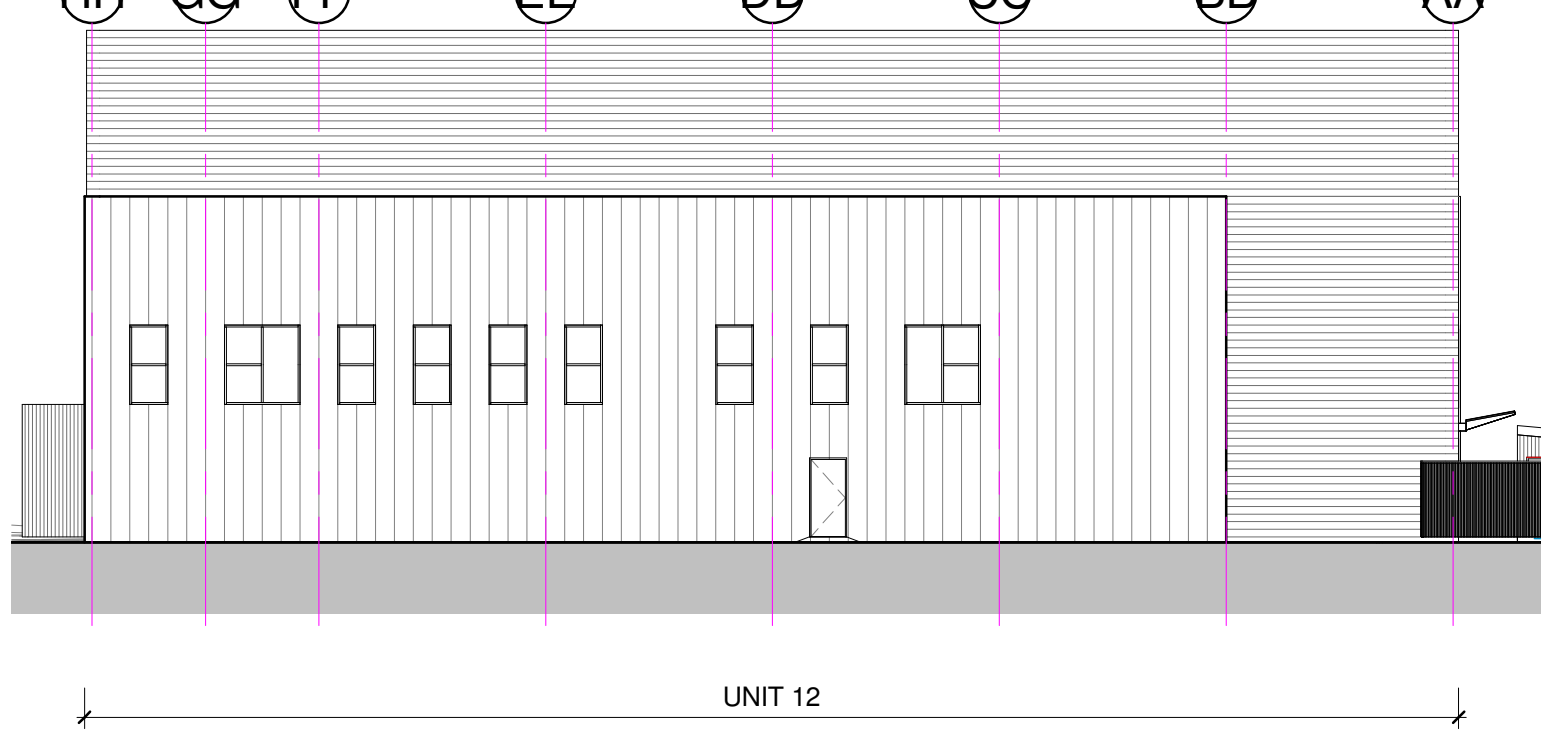
Units 10 - 12 South Elevation
1 : 200



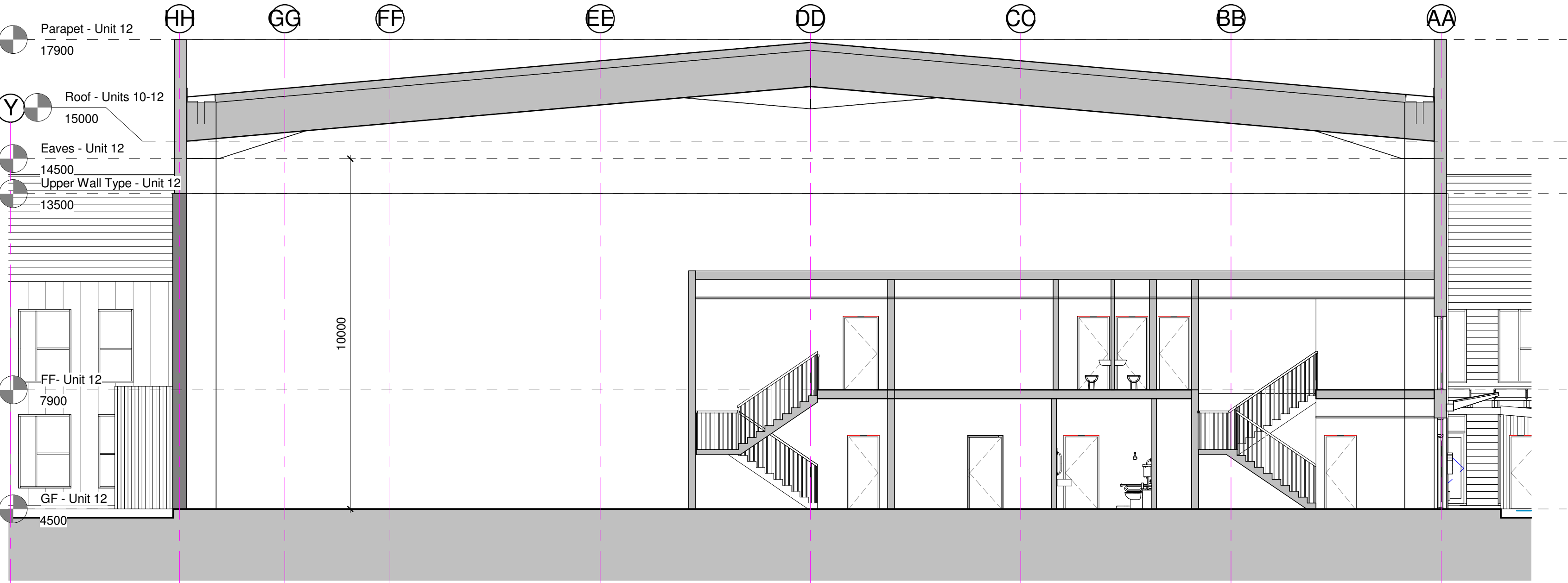
Unit 10 West Elevation
1 : 200



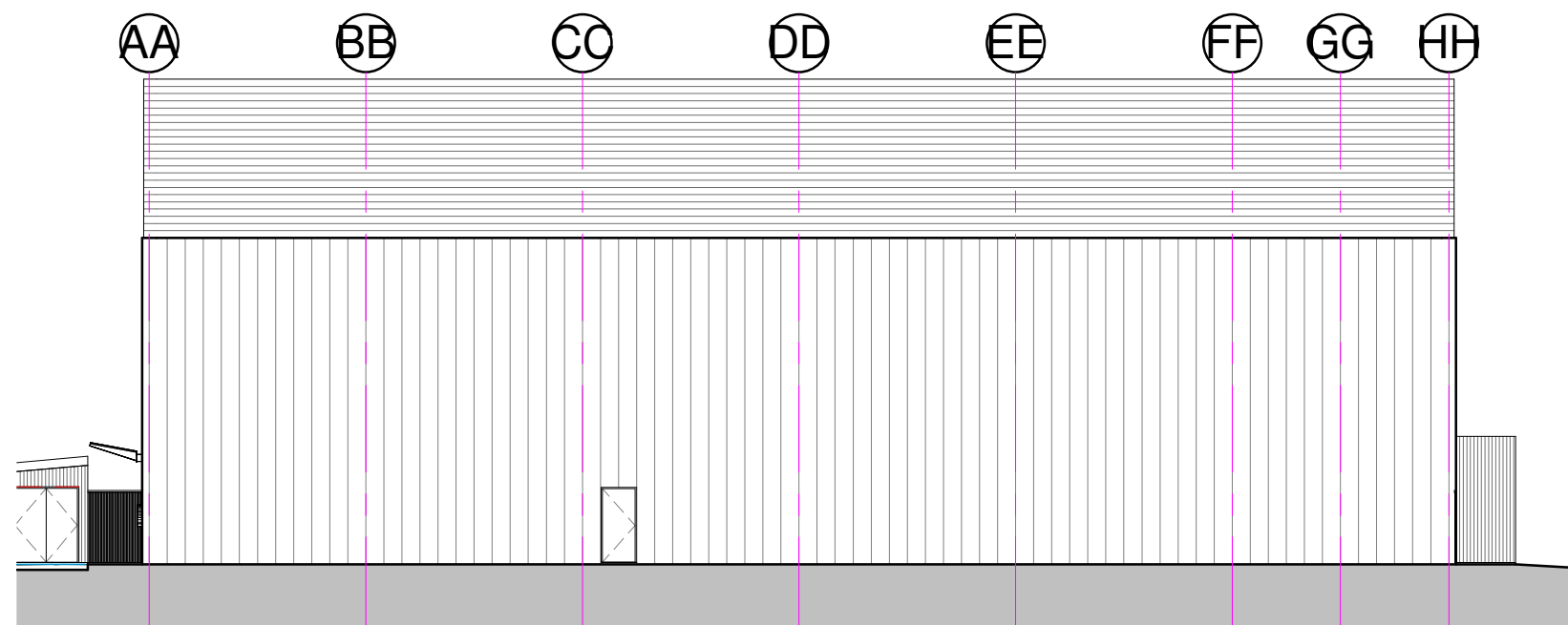
Unit 11 East Elevation
1 : 200



Unit 12 East Elevation
1 : 200



Unit 12 Section - Staircore
1 : 100



Unit 12 West Elevation
1 : 200

C	01.07.19	CJ	Units 11 and 12 elevations and annotations updated.	IJ
B	29/06/19	JH	Minor updates	IJ
A	27/06/19	JH	First Issue	IJ
Rev	Date	Init	Notes	Chkd

Client

Drawing Originator

AWW inspired environments
London - 106 Weston Street London SE1 3QB 020 7160 6000
Bristol - Rivergate House, Bristol, BS1 4LS 0117 923 2535
Plymouth - East Quay House, Plymouth, PL4 0HX 01752 261 282
RIBA Chartered Practice www.aww-uk.com

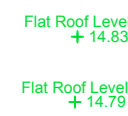
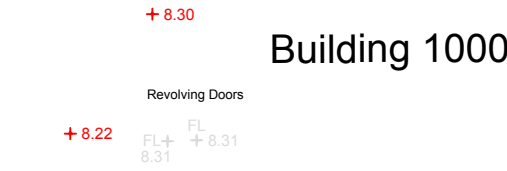
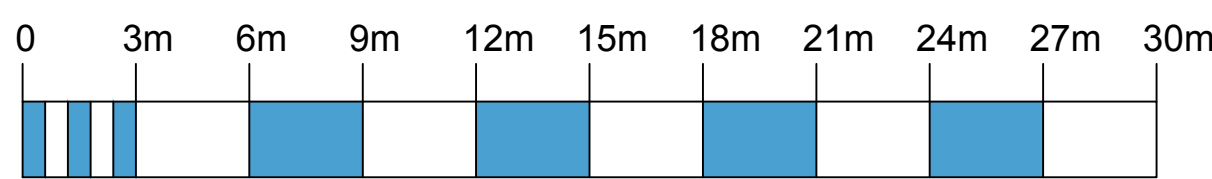
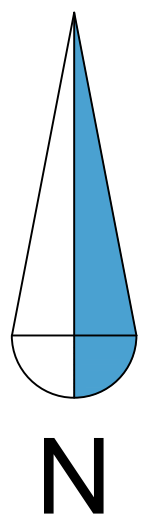
Project Title
**Proposed Industrial Units
Langstone Technology Park,
Havant**

Drawing Title
**Units 10 - 12 Elevations and
Typical Section**

Scale	Sheet	Drawn	Checked	Date
As indicated	A1	CJ	IJ	04.06.19
Status	Project No.			
PLANNING	4046C			
Drawing Reference	Drawing No.	Revision		
	0225	C		

APPENDIX B

Topographic and CCTV Survey



Station	Easting	Northing
A	471327.174	105618.327
B	471328.031	105618.327
C	471223.321	105623.545
D	471150.333	105636.388
DHL	471150.333	105636.388
E	471138.230	105558.475
F	471204.372	105505.594
FH	471120.662	105505.594
H	471089.990	105554.552
I	471090.650	105580.753
R1	471101.111	105580.753
R12	471386.095	105675.284
R14	471105.132	105819.519
R15	471386.095	105675.284
R16	471386.290	105617.911
SEA	471441.101	105765.709
SEB	471500.619	105763.903
SEB1	471500.619	105763.903
SECD	471353.594	105867.887
SECH	471516.282	105884.354

Stations A, B, C, D, DH1, E, F, H, I, Z, F94, F95 and SED are marked with a wooden stake. Stations G, F91, F92, SEA, SED, SEC and SECH are marked with a Wood

ON DETAIL SPEC.				
01	As Built	CE	Electricity Wire	001
02	As Built	CE	Light Bulb	002
03	As Built	CE	As Built	003
04	As Built	CE	As Built	004
05	As Built	CE	As Built	005
06	As Built	CE	As Built	006
07	As Built	CE	As Built	007
08	As Built	CE	As Built	008
09	As Built	CE	As Built	009
10	As Built	CE	As Built	010
11	As Built	CE	As Built	011
12	As Built	CE	As Built	012
13	As Built	CE	As Built	013
14	As Built	CE	As Built	014
15	As Built	CE	As Built	015
16	As Built	CE	As Built	016
17	As Built	CE	As Built	017
18	As Built	CE	As Built	018
19	As Built	CE	As Built	019
20	As Built	CE	As Built	020
21	As Built	CE	As Built	021
22	As Built	CE	As Built	022
23	As Built	CE	As Built	023
24	As Built	CE	As Built	024
25	As Built	CE	As Built	025
26	As Built	CE	As Built	026
27	As Built	CE	As Built	027
28	As Built	CE	As Built	028
29	As Built	CE	As Built	029
30	As Built	CE	As Built	030
31	As Built	CE	As Built	031
32	As Built	CE	As Built	032
33	As Built	CE	As Built	033
34	As Built	CE	As Built	034
35	As Built	CE	As Built	035
36	As Built	CE	As Built	036
37	As Built	CE	As Built	037
38	As Built	CE	As Built	038
39	As Built	CE	As Built	039
40	As Built	CE	As Built	040
41	As Built	CE	As Built	041
42	As Built	CE	As Built	042
43	As Built	CE	As Built	043
44	As Built	CE	As Built	044
45	As Built	CE	As Built	045
46	As Built	CE	As Built	046
47	As Built	CE	As Built	047
48	As Built	CE	As Built	048
49	As Built	CE	As Built	049
50	As Built	CE	As Built	050
51	As Built	CE	As Built	051
52	As Built	CE	As Built	052
53	As Built	CE	As Built	053
54	As Built	CE	As Built	054
55	As Built	CE	As Built	055
56	As Built	CE	As Built	056
57	As Built	CE	As Built	057
58	As Built	CE	As Built	058
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68	As Built	CE	As Built	068
69	As Built	CE	As Built	069
70	As Built	CE	As Built	070
71	As Built	CE	As Built	071
72	As Built	CE	As Built	072
73	As Built	CE	As Built	073
74	As Built	CE	As Built	074
75	As Built	CE	As Built	075
76	As Built	CE	As Built	076
77	As Built	CE	As Built	077
78	As Built	CE	As Built	078
79	As Built	CE	As Built	079
80	As Built	CE	As Built	080
81	As Built	CE	As Built	081
82	As Built	CE	As Built	082
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85	As Built	CE	As Built	085
86	As Built	CE	As Built	086
87	As Built	CE	As Built	087
88	As Built	CE	As Built	088
89	As Built	CE	As Built	089
90	As Built	CE	As Built	090
91	As Built	CE	As Built	091
92	As Built	CE	As Built	092
93	As Built	CE	As Built	093
94	As Built	CE	As Built	094
95	As Built	CE	As Built	095
96	As Built	CE	As Built	096
97	As Built	CE	As Built	097
98	As Built	CE	As Built	098
99	As Built	CE	As Built	099
100	As Built	CE	As Built	100

ON FENCES/RAILS/DIVISIONS			
S/W	Barbed Wire Fence	P/R	Post and Rail
C/R	Crash Barrier	P/R	Post and Rail
C/R	Close Board Fence	S/P	Safety
C/L	Corrugated Iron Fence	S/P	Steel Railing
C/L	Chain Link Fence	W/R	Wire Mesh Fence
C/P	Electric Fence	W	Brick Wall
D/T	Panel / Board Fence	C	Concrete Wall
H/R	Hand Rail	S/R	Sty Stone Wall
P/R	Iron Rail Fence	S/R	Retaining Wall
P/L	Palisade Fence	W	Stone Wall

OX BUILDINGS			
ASP	Asbestos	DL	Ridge Level
AW	Air	ESC	Exit Channel
CL	Cell Level	EXP	Exhaust Pipe
CH	Ceiling Height	SA	Spring, DF Arch
CHH	Chimney Stack Height	SHH	Subsidiary Gas Heat
CO	Door	SD	Sliding Door
DP	Down Pipe	SP	Shut Pipe
CL	Cell Level	STLL	Screen Water Pipe
F	Frame Height	SVF	Shut Valve
FB	Folding Door	THL	Threshold Level
GRS	Glassed Roof Light	UDR	Underdrain of Drain
HL	Head Level	WH	Water Head
DART	Partitioning	WP	Water Pipe
DL	Parapet Level	WST	Water Storage

[illegible]

ABBREVIATION KEY

[illegible]

1	2	3
4	5	6
7	8	

Rev.	Comments

 SURVEYbase Surveying & Technology www.surveybase.co.uk	
Bath: 01225 314370 - London: 0203 2546876	
Langstone Road, Havant, PO9 1SA	
File Name: Db207-USP	
Drawing Title: Utilities Survey Of Langstone Technology Sheet (1 of 8 AO)	
Client: AWW	
Date: 28/01/2018	
Scale: A3	
Drawn by: AS	Checked by: RA
Project Code: Db207-USP	
North Orientation: North	OS Grid: OS Level
All dimensions are to be checked on the work where applicable. This drawing must be read in conjunction with the specification and any other drawings.	



Stations A, B, C, D, DML, E, F, H, I, Z, R94, R95 and SED are marked with a PK Nail.

[illegible]

More disorder events are significantly greater than the control data, but approximate events are shown true.

[illegible]

ADJUTANT GENERAL'S NOTES

Rev	Comments	By	Chkd	Date
-----	----------	----	------	------

Bath: 01225 314370 - London: 02039 0668

Langstone Technology Park,
Langstone Road, Havant, PO9 1SA

File Name:
Db4207-USP

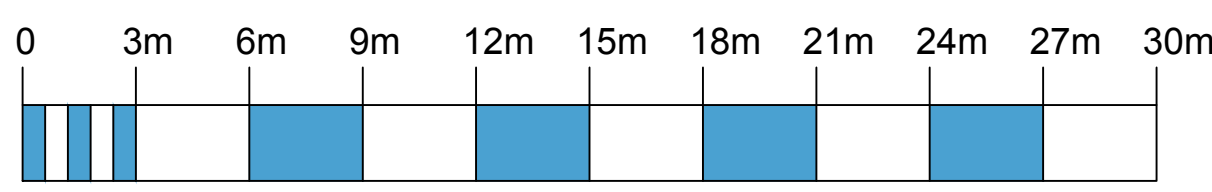
Drawing Title :
Utilities Survey Of Langstone Technology Park
Sheet (2 of 8 A0)

Client: AWW	Date 26/04/2019
	Scale A0 @ 1:200

Drawn by: db - AS	Checked by: db - RI	Project Code: Db4207-USP	Rev: 1
Grid Orientation: North GPS		Site Level Datum OS GPS	

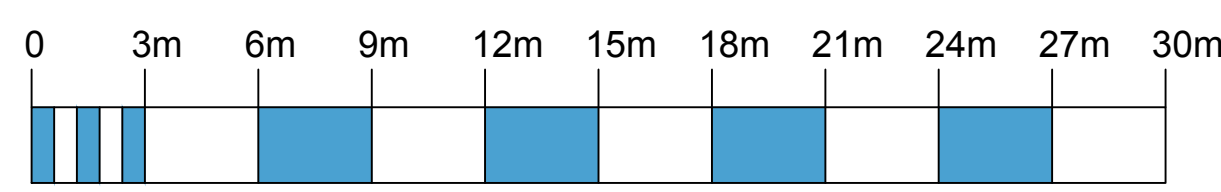
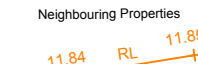
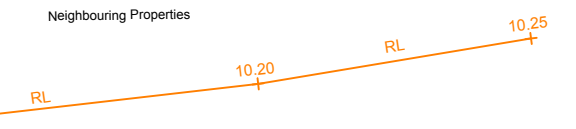
All dimensions are to be checked on site where applicable. This drawing must not be scaled, and only written dimensions should be respected.

Time spent and sizes on this drawing are not guaranteed, and if critical should be verified by an architectural. Time spent average about the table, and heights are approximate at the time of the survey.



Flat Roof Level 11.72 + 11.88 Building 4000

EL +8.05 TIE +4.37 EL +7.02



Notes:	Station	Easting	Northing
A		471327.174	105618
B		471287.031	105622
C		471223.321	105626
D		471150.333	105638
DHL		471086.342	105614
E		471128.230	105618
F		471204.372	105505
G		471120.662	105494
H		47089.990	105500
I		471090.650	105580
R11		47100.014	105595
R12		47119.909	105675
R14		471105.132	105815
R15		47119.903	105815
R		471338.290	105612
SEA		471441.101	105765
SEB		471500.619	105763
SEC		471516.131	105763
SECHL		471353.954	105867
SED		471516.282	105854

Stations A, B, C, D, DHL, E, F, H, I, Z, R14, R15 and SED are
Stations G, R11, R12, SEA, S111, S1C and S12H are marked with

[illegible]

ON FENCES/WALLS/DIVISIONS		
3/4	Barbed Wire Fence	P/R Post
C-8	Crash Barrier	P/R Post
C-9	Close Boarded Fence	S/R Safe
C-1	Corrugated Iron Fence	S/R Stair
C/L	Chain Link Fence	S/R Wire
C/T	Electric Fence	S/R Wire
FPB	Panel / Board Fence	CV Cond
H/R	Hard Rail	CV Cond
I/R	Iron Rail Fence	R/W Roto
P/L	Pallisade Fence	S/R Stair

ON BUILDINGS			
ASP	Asbestos	DL	Right
AE	Air Vent	DNC	Down
CL	Cell Level	BNP	Back
CM	Ceilings	SL	See In
CHN	Chimney Stack Height	SDH	Support
DL	Door Head	CS	Height
DS	Down Pipe	SL	Side
EL	Eave Level	STIL	Still
FR	Frame Height	SW	Seew
FOLD	Folding Door	TH	Thresh
GL	Glopha Roof Light	U3H	Under
HL	Head Level	W	Water
PART	Partitions	W4	Water
PL	Parapet Level	W5	Water

[illegible]

There should be no significant difference between the two groups. The results are shown in the table below.

ABBREVIATION KEY

- 1st = first
- 2nd = second
- 3rd = third
- 4th = fourth
- 5th = fifth
- 6th = sixth
- 7th = seventh
- 8th = eighth
- 9th = ninth
- 10th = tenth
- 11th = eleventh
- 12th = twelfth
- 13th = thirteenth
- 14th = fourteenth
- 15th = fifteenth
- 16th = sixteenth
- 17th = seventeenth
- 18th = eighteenth
- 19th = nineteenth
- 20th = twentieth
- 21st = twenty-first
- 22nd = twenty-second
- 23rd = twenty-third
- 24th = twenty-fourth
- 25th = twenty-fifth
- 26th = twenty-sixth
- 27th = twenty-seventh
- 28th = twenty-eighth
- 29th = twenty-ninth
- 30th = thirtieth
- 31st = thirty-first
- 32nd = thirty-second
- 33rd = thirty-third
- 34th = thirty-fourth
- 35th = thirty-fifth
- 36th = thirty-sixth
- 37th = thirty-seventh
- 38th = thirty-eighth
- 39th = thirty-ninth
- 40th = fortieth
- 41st = forty-first
- 42nd = forty-second
- 43rd = forty-third
- 44th = forty-fourth
- 45th = forty-fifth
- 46th = forty-sixth
- 47th = forty-seventh
- 48th = forty-eighth
- 49th = forty-ninth
- 50th = fiftieth
- 51st = fifty-first
- 52nd = fifty-second
- 53rd = fifty-third
- 54th = fifty-fourth
- 55th = fifty-fifth
- 56th = fifty-sixth
- 57th = fifty-seventh
- 58th = fifty-eighth
- 59th = fifty-ninth
- 60th = sixtieth
- 61st = sixty-first
- 62nd = sixty-second
- 63rd = sixty-third
- 64th = sixty-fourth
- 65th = sixty-fifth
- 66th = sixty-sixth
- 67th = sixty-seventh
- 68th = sixty-eighth
- 69th = sixty-ninth
- 70th = seventieth
- 71st = seventy-first
- 72nd = seventy-second
- 73rd = seventy-third
- 74th = seventy-fourth
- 75th = seventy-fifth
- 76th = seventy-sixth
- 77th = seventy-seventh
- 78th = seventy-eighth
- 79th = seventy-ninth
- 80th = eightieth
- 81st = eighty-first
- 82nd = eighty-second
- 83rd = eighty-third
- 84th = eighty-fourth
- 85th = eighty-fifth
- 86th = eighty-sixth
- 87th = eighty-seventh
- 88th = eighty-eighth
- 89th = eighty-ninth
- 90th = ninetieth
- 91st = ninety-first
- 92nd = ninety-second
- 93rd = ninety-third
- 94th = ninety-fourth
- 95th = ninety-fifth
- 96th = ninety-sixth
- 97th = ninety-seventh
- 98th = ninety-eighth
- 99th = ninety-ninth
- 100th = hundredth
- 101st = one hundred and first
- 102nd = one hundred and second
- 103rd = one hundred and third
- 104th = one hundred and fourth
- 105th = one hundred and fifth
- 106th = one hundred and sixth
- 107th = one hundred and seventh
- 108th = one hundred and eighth
- 109th = one hundred and ninth
- 110th = one hundred and tenth
- 111th = one hundred and eleventh
- 112th = one hundred and twelfth
- 113th = one hundred and thirteenth
- 114th = one hundred and fourteenth
- 115th = one hundred and fifteenth
- 116th = one hundred and sixteenth
- 117th = one hundred and seventeenth
- 118th = one hundred and eighteenth
- 119th = one hundred and nineteenth
- 120th = one hundred and twentieth
- 121st = one hundred and twenty-first
- 122nd = one hundred and twenty-second
- 123rd = one hundred and twenty-third
- 124th = one hundred and twenty-fourth
- 125th = one hundred and twenty-fifth
- 126th = one hundred and twenty-sixth
- 127th = one hundred and twenty-seventh
- 128th = one hundred and twenty-eighth
- 129th = one hundred and twenty-ninth
- 130th = one hundred and thirtieth
- 131st = one hundred and thirty-first
- 132nd = one hundred and thirty-second
- 133rd = one hundred and thirty-third
- 134th = one hundred and thirty-fourth
- 135th = one hundred and thirty-fifth
- 136th = one hundred and thirty-sixth
- 137th = one hundred and thirty-seventh
- 138th = one hundred and thirty-eighth
- 139th = one hundred and thirty-ninth
- 140th = one hundred and fortieth
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- 149th = one hundred and forty-ninth
- 150th = one hundred and fiftieth
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- 154th = one hundred and fifty-fourth
- 155th = one hundred and fifty-fifth
- 156th = one hundred and fifty-sixth
- 157th = one hundred and fifty-seventh
- 158th = one hundred and fifty-eighth
- 159th = one hundred and fifty-ninth
- 160th = one hundred and sixtieth
- 161st = one hundred and sixty-first
- 162nd = one hundred and sixty-second
- 163rd = one hundred and sixty-third
- 164th = one hundred and sixty-fourth
- 165th = one hundred and sixty-fifth
- 166th = one hundred and sixty-sixth
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- 168th = one hundred and sixty-eighth
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- 176th = one hundred and seventy-sixth
- 177th = one hundred and seventy-seventh
- 178th = one hundred and seventy-eighth
- 179th = one hundred and seventy-ninth
- 180th = one hundred and eightieth
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- 182nd = one hundred and eighty-second
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- 184th = one hundred and eighty-fourth
- 185th = one hundred and eighty-fifth
- 186th = one hundred and eighty-sixth
- 187th = one hundred and eighty-seventh
- 188th = one hundred and eighty-eighth
- 189th = one hundred and eighty-ninth
- 190th = one hundred and ninetieth
- 191st = one hundred and ninety-first
- 192nd = one hundred and ninety-second
- 193rd = one hundred and ninety-third
- 194th = one hundred and ninety-fourth
- 195th = one hundred and ninety-fifth
- 196th = one hundred and ninety-sixth
- 197th = one hundred and ninety-seventh
- 198th = one hundred and ninety-eighth
- 199th = one hundred and ninety-ninth
- 200th = two hundred
- 201st = two hundred and first
- 202nd = two hundred and second
- 203rd = two hundred and third
- 204th = two hundred and fourth
- 205th = two hundred and fifth
- 206th = two hundred and sixth
- 207th = two hundred and seventh
- 208th = two hundred and eighth
- 209th = two hundred and ninth
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- 211th = two hundred and eleventh
- 212th = two hundred and twelfth
- 213th = two hundred and thirteenth
- 214th = two hundred and fourteenth
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- 216th = two hundred and sixteenth
- 217th = two hundred and seventeenth
- 218th = two hundred and eighteenth
- 219th = two hundred and nineteenth
- 220th = two hundred and twentieth
- 221st = two hundred and twenty-first
- 222nd = two hundred and twenty-second
- 223rd = two hundred and twenty-third
- 224th = two hundred and twenty-fourth
- 225th = two hundred and twenty-fifth
- 226th = two hundred and twenty-sixth
- 227th = two hundred and twenty-seventh
- 228th = two hundred and twenty-eighth
- 229th = two hundred and twenty-ninth
- 230th = two hundred and thirtieth
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- 236th = two hundred and thirty-sixth
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- 238th = two hundred and thirty-eighth
- 239th = two hundred and thirty-ninth
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- 241st = two hundred and forty-first
- 242nd = two hundred and forty-second
- 243rd = two hundred and forty-third
- 244th = two hundred and forty-fourth
- 245th = two hundred and forty-fifth
- 246th = two hundred and forty-sixth
- 247th = two hundred and forty-seventh
- 248th = two hundred and forty-eighth
- 249th = two hundred and forty-ninth
- 250th = two hundred and fiftieth
- 251st = two hundred and fifty-first
- 252nd = two hundred and fifty-second
- 253rd = two hundred and fifty-third
- 254th = two hundred and fifty-fourth
- 255th = two hundred and fifty-fifth
- 256th = two hundred and fifty-sixth
- 257th = two hundred and fifty-seventh
- 258th = two hundred and fifty-eighth
- 259th = two hundred and fifty-ninth
- 260th = two hundred and sixtieth
- 261st = two hundred and sixty-first
- 262nd = two hundred and sixty-second
- 263rd = two hundred and sixty-third
- 264th = two hundred and sixty-fourth
- 265th = two hundred and sixty-fifth
- 266th = two hundred and sixty-sixth
- 267th = two hundred and sixty-seventh
- 268th = two hundred and sixty-eighth
- 269th = two hundred and sixty-ninth
- 270th = two hundred and seventieth
- 271st = two hundred and seventy-first
- 272nd = two hundred and seventy-second

02

1	2	
4	5	
7	8	

Rev:	Comments
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Bath: 01225 314370 - London

Langstone Technology Park
Langstone Road, Havant, PO9 1SA

File Name:
Db4207-USP

Utilities Survey Of Langstone Techn
Sheet (4 of 8 A0)

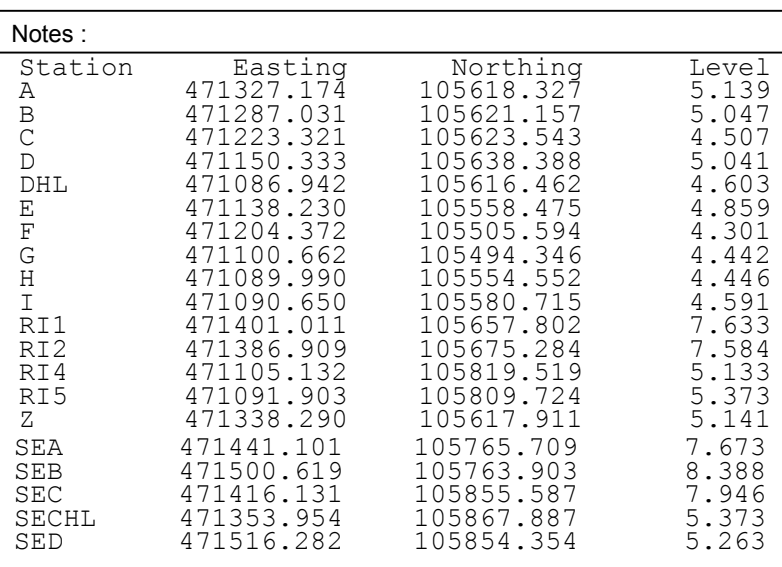
AWW

Drawn by: dh - AS	Checked by: dh - RI	Project Cod Db42
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Grid Orientation:	Site Level
North GPS	OS GPS

All dimensions are to be checked on site where applicable. This drawing and only written dimensions should be respected.

Time, species and sizes on this drawing are not guaranteed, and if critical should be



Stations A, B, C, D, DHL, E, F, H, I, Z, R14, R15 and SED are marked with a PK Nail.
Stations G, R11, R12, SEA, SEB, SEC and SEDH are marked with a Wooden stake.

ON DETAIL SURVEY

[illegible]

When answer choices are sufficiently similar that the test taker has difficulty choosing an answer, the question is usually flawed.



ABBREVIATION KEY

1. 1 = one
 2. 2 = two
 3. 3 = three
 4. 4 = four
 5. 5 = five
 6. 6 = six
 7. 7 = seven
 8. 8 = eight
 9. 9 = nine
 10. 10 = ten
 11. 11 = eleven
 12. 12 = twelve
 13. 13 = thirteen
 14. 14 = fourteen
 15. 15 = fifteen
 16. 16 = sixteen
 17. 17 = seventeen
 18. 18 = eighteen
 19. 19 = nineteen
 20. 20 = twenty
 21. 21 = twenty-one
 22. 22 = twenty-two
 23. 23 = twenty-three
 24. 24 = twenty-four
 25. 25 = twenty-five
 26. 26 = twenty-six
 27. 27 = twenty-seven
 28. 28 = twenty-eight
 29. 29 = twenty-nine
 30. 30 = thirty
 31. 31 = thirty-one
 32. 32 = thirty-two
 33. 33 = thirty-three
 34. 34 = thirty-four
 35. 35 = thirty-five
 36. 36 = thirty-six
 37. 37 = thirty-seven
 38. 38 = thirty-eight
 39. 39 = thirty-nine
 40. 40 = forty
 41. 41 = forty-one
 42. 42 = forty-two
 43. 43 = forty-three
 44. 44 = forty-four
 45. 45 = forty-five
 46. 46 = forty-six
 47. 47 = forty-seven
 48. 48 = forty-eight
 49. 49 = forty-nine
 50. 50 = fifty
 51. 51 = fifty-one
 52. 52 = fifty-two
 53. 53 = fifty-three
 54. 54 = fifty-four
 55. 55 = fifty-five
 56. 56 = fifty-six
 57. 57 = fifty-seven
 58. 58 = fifty-eight
 59. 59 = fifty-nine
 60. 60 = sixty
 61. 61 = sixty-one
 62. 62 = sixty-two
 63. 63 = sixty-three
 64. 64 = sixty-four
 65. 65 = sixty-five
 66. 66 = sixty-six
 67. 67 = sixty-seven
 68. 68 = sixty-eight
 69. 69 = sixty-nine
 70. 70 = seventy
 71. 71 = seventy-one
 72. 72 = seventy-two
 73. 73 = seventy-three
 74. 74 = seventy-four
 75. 75 = seventy-five
 76. 76 = seventy-six
 77. 77 = seventy-seven
 78. 78 = seventy-eight
 79. 79 = seventy-nine
 80. 80 = eighty
 81. 81 = eighty-one
 82. 82 = eighty-two
 83. 83 = eighty-three
 84. 84 = eighty-four
 85. 85 = eighty-five
 86. 86 = eighty-six
 87. 87 = eighty-seven
 88. 88 = eighty-eight
 89. 89 = eighty-nine
 90. 90 = ninety
 91. 91 = ninety-one
 92. 92 = ninety-two
 93. 93 = ninety-three
 94. 94 = ninety-four
 95. 95 = ninety-five
 96. 96 = ninety-six
 97. 97 = ninety-seven
 98. 98 = ninety-eight
 99. 99 = ninety-nine
 100. 100 = one hundred
 101. 101 = one hundred one
 102. 102 = one hundred two
 103. 103 = one hundred three
 104. 104 = one hundred four
 105. 105 = one hundred five
 106. 106 = one hundred six
 107. 107 = one hundred seven
 108. 108 = one hundred eight
 109. 109 = one hundred nine
 110. 110 = one hundred ten
 111. 111 = one hundred eleven
 112. 112 = one hundred twelve
 113. 113 = one hundred thirteen
 114. 114 = one hundred fourteen
 115. 115 = one hundred fifteen
 116. 116 = one hundred sixteen
 117. 117 = one hundred seventeen
 118. 118 = one hundred eighteen
 119. 119 = one hundred nineteen
 120. 120 = one hundred twenty
 121. 121 = one hundred twenty one
 122. 122 = one hundred twenty two
 123. 123 = one hundred twenty three
 124. 124 = one hundred twenty four
 125. 125 = one hundred twenty five
 126. 126 = one hundred twenty six
 127. 127 = one hundred twenty seven
 128. 128 = one hundred twenty eight
 129. 129 = one hundred twenty nine
 130. 130 = one hundred thirty
 131. 131 = one hundred thirty one
 132. 132 = one hundred thirty two
 133. 133 = one hundred thirty three
 134. 134 = one hundred thirty four
 135. 135 = one hundred thirty five
 136. 136 = one hundred thirty six
 137. 137 = one hundred thirty seven
 138. 138 = one hundred thirty eight
 139. 139 = one hundred thirty nine
 140. 140 = one hundred forty
 141. 141 = one hundred forty one
 142. 142 = one hundred forty two
 143. 143 = one hundred forty three
 144. 144 = one hundred forty four
 145. 145 = one hundred forty five
 146. 146 = one hundred forty six
 147. 147 = one hundred forty seven
 148. 148 = one hundred forty eight
 149. 149 = one hundred forty nine
 150. 150 = one hundred fifty
 151. 151 = one hundred fifty one
 152. 152 = one hundred fifty two
 153. 153 = one hundred fifty three
 154. 154 = one hundred fifty four
 155. 155 = one hundred fifty five
 156. 156 = one hundred fifty six
 157. 157 = one hundred fifty seven
 158. 158 = one hundred fifty eight
 159. 159 = one hundred fifty nine
 160. 160 = one hundred sixty
 161. 161 = one hundred sixty one
 162. 162 = one hundred sixty two
 163. 163 = one hundred sixty three
 164. 164 = one hundred sixty four
 165. 165 = one hundred sixty five
 166. 166 = one hundred sixty six
 167. 167 = one hundred sixty seven
 168. 168 = one hundred sixty eight
 169. 169 = one hundred sixty nine
 170. 170 = one hundred seventy
 171. 171 = one hundred seventy one
 172. 172 = one hundred seventy two
 173. 173 = one hundred seventy three
 174. 174 = one hundred seventy four
 175. 175 = one hundred seventy five
 176. 176 = one hundred seventy six
 177. 177 = one hundred seventy seven
 178. 178 = one hundred seventy eight
 179. 179 = one hundred seventy nine
 180. 180 = one hundred eighty
 181. 181 = one hundred eighty one
 182. 182 = one hundred eighty two
 183. 183 = one hundred eighty three
 184. 184 = one hundred eighty four
 185. 185 = one hundred eighty five
 186. 186 = one hundred eighty six
 187. 187 = one hundred eighty seven
 188. 188 = one hundred eighty eight
 189. 189 = one hundred eighty nine
 190. 190 = one hundred ninety
 191. 191 = one hundred ninety one
 192. 192 = one hundred ninety two
 193. 193 = one hundred ninety three
 194. 194 = one hundred ninety four
 195. 195 =

[illegible]

1	2	3
4	5	6
7	8	

Rev.	Comments	By	Chkd	Date



Bath: 01225 314370 - London: 02039 066892

Langstone Technology Park,
Langstone Road, Havant, PO9 1SA

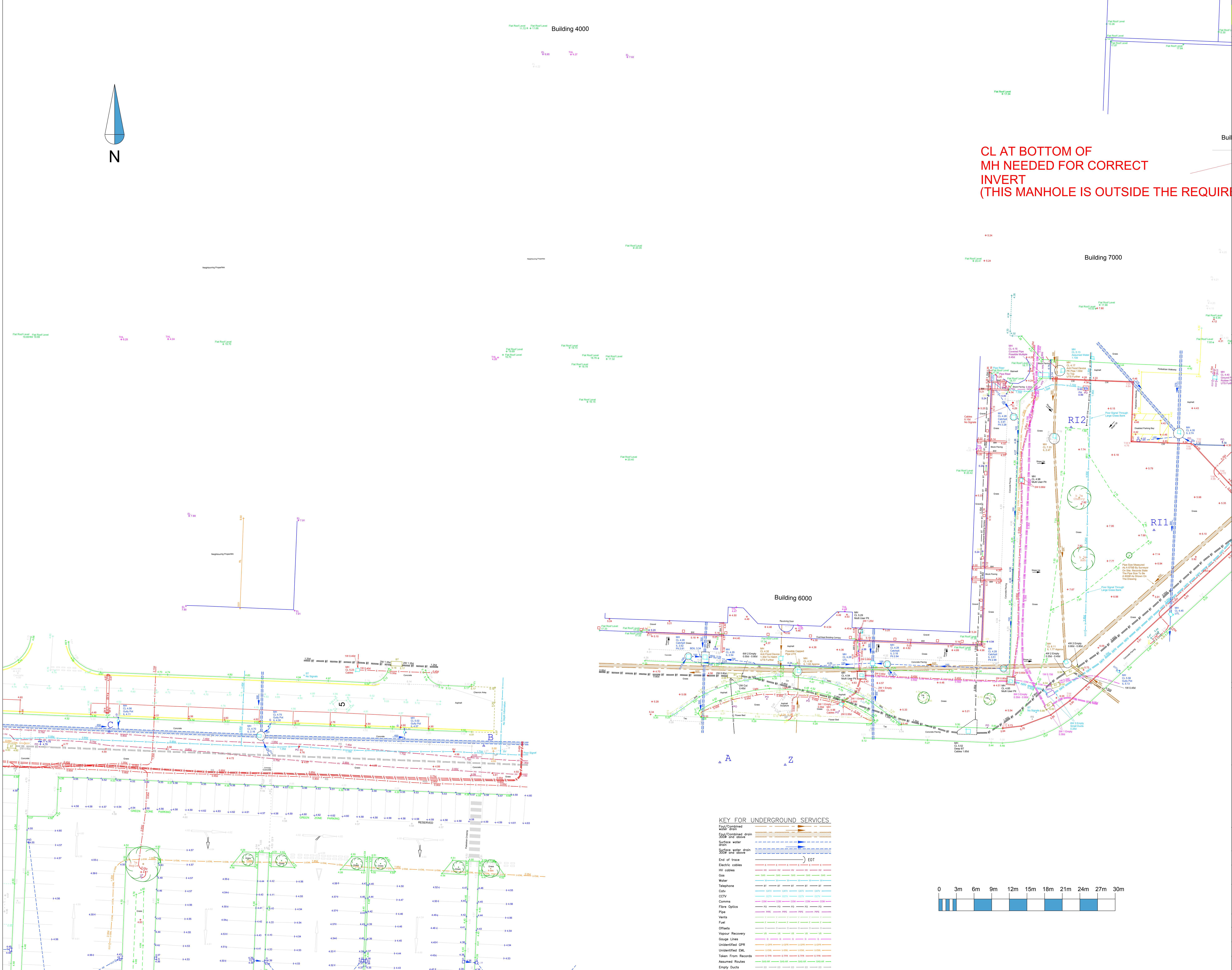
File Name:
Db4207-USP

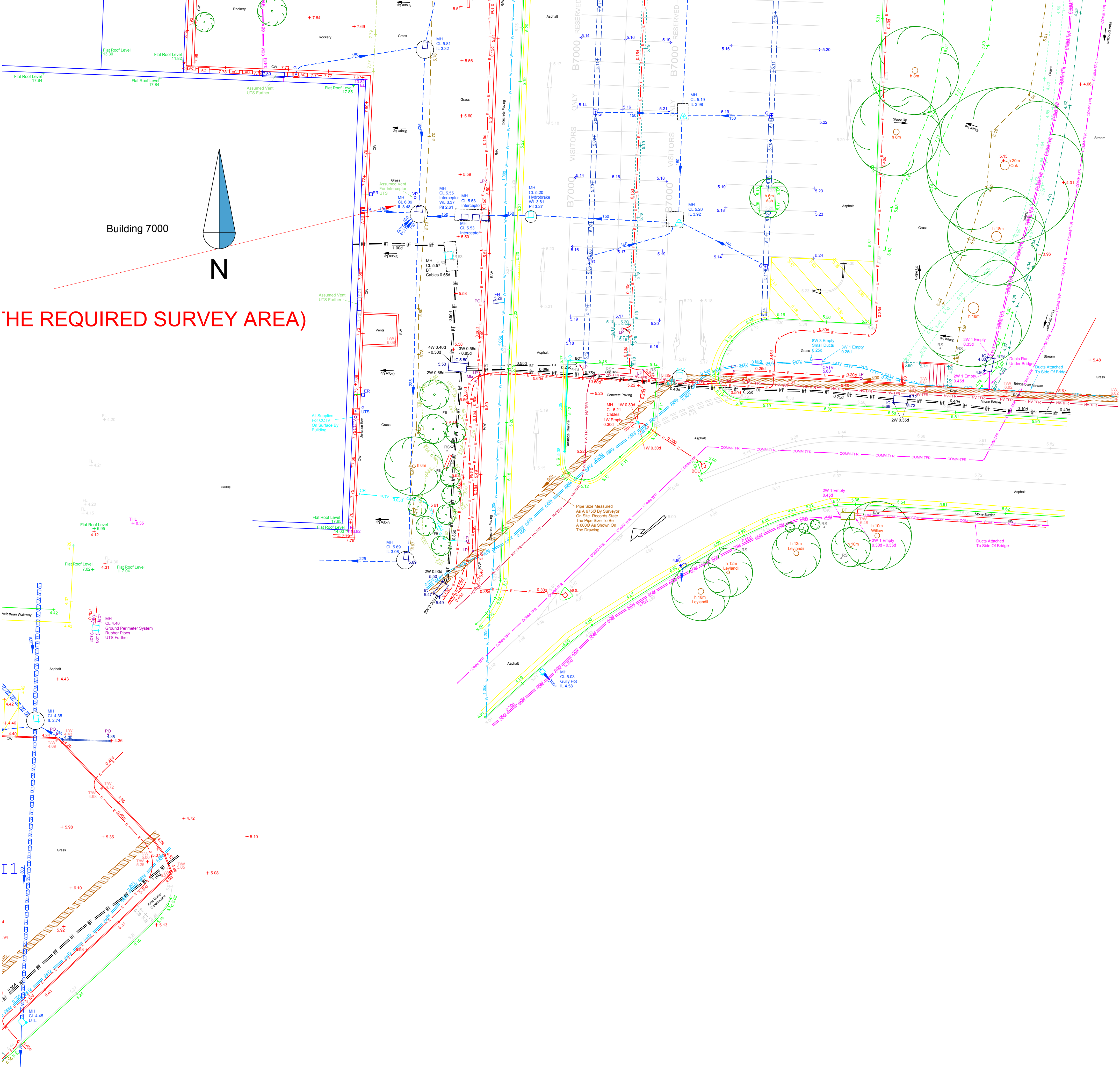
Drawing Title :
Utilities Survey Of Langstone Technology Park
Sheet (5 of 8 A0)

Client: AWW	Date 26/04/2019
	Scale A0 @ 1:200

Drawn by: db - AS	Checked by: db - RI	Project Code: DB4207-USP	Revision: ...
Grid Orientation: North GPS		Site Level Datum OS GPS	

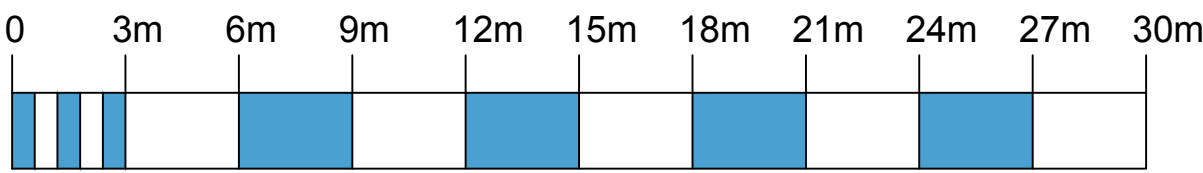
All dimensions are to be checked on site where applicable. This drawing must not be scaled, and only written dimensions should be respected.





THE REQUIRED SURVEY AREA)

Langbrook Farm Pub



Station	Easting	Nothing	Level
A	471287.931	105621.157	5.139
B	471287.931	105621.157	5.047
C	471287.931	105621.157	5.047
D	471190.333	105636.388	5.041
DLH	471086.242	105676.463	5.613
E	471198.230	105556.475	4.809
F	471198.230	105556.475	4.809
G	471100.662	105494.346	4.442
H	471089.190	105554.352	4.446
I	471090.650	105580.715	4.531
J	471101.111	105617.802	4.531
K	471101.111	105617.802	4.531
L	471101.111	105617.802	4.531
M	471101.111	105617.802	4.531
N	471101.111	105617.802	4.531
O	471101.111	105617.802	4.531
P	471101.111	105617.802	4.531
Q	471101.111	105617.802	4.531
R	471101.111	105617.802	4.531
S	471101.111	105617.802	4.531
T	471101.111	105617.802	4.531
U	471101.111	105617.802	4.531
V	471101.111	105617.802	4.531
W	471101.111	105617.802	4.531
X	471101.111	105617.802	4.531
Y	471101.111	105617.802	4.531
Z	471101.111	105617.802	4.531
SEA	471441.101	105765.709	7.673
SEB	471500.619	105761.903	8.368
SEC	471416.131	105855.587	7.946
SECHL	471333.254	105867.987	5.213
SED	471516.282	105854.354	5.263

Stations A, B, C, D, DLH, E, F, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, SEA, SEB, SEC and SED are marked with a PK Nail.
Stations G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z are marked with a Rodon stake.

ON DETAIL SURVEY

Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
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Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	25
Accessories	ED	Connectivity	25	Sound	

ON BUILDINGS

C/R	Crash Barrier	F/W	Post and Wire Fence
C/R	Cable Routed Fence	S/T	Safety Fence
C/I	Corrugated Iron Fence	S/R	Steel Railings
C/L	Chain Link Fence	W/R	Wire Mesh Fencing
C/E	Electric Fence	SW	Stone Wall
F/B	Panel / Board Fence	CW	Concrete Wall
H/R	Hard Ball	DSW	Dry Stone Wall
I/R	Iron Rail Fence	SW	Retaining Wall
P/L	Palladeo Fence	SW	Stone Wall