

Groundwater Review Shinfield Park, Reading

11th February 2025

FAO: Wrenbridge (FRELD Reading) LLP

The following Technical note has been prepared by TRC Companies Limited (TRC) for Wrenbridge (FRELD Reading) LLP (the 'Client').

The purpose of this note is to appraise whether the redevelopment of land at Shinfield Park, Shinfield, Reading, RG2 9FW (the 'Site') is likely cause a material change to drainage and hydrogeological conditions that could have a detrimental effect on the adjacent ancient woodland following redevelopment. This technical query has been raised by Wokingham Borough Council and is required to satisfy ecological concerns with respect to the adjacent ancient woodland.

1.0 Introduction

The Site currently comprises a four storey concrete office building with two levels of underground car parking, ancillary buildings, external surface car parking and localised areas of soft landscaping. Current drainage information shows that surface water is captured by an on-site surface water drainage system, which then drains to municipal drainage via a sealed drainage system. No discharges are recorded to ground or surface waters.

The proposed redevelopment will entail demolition and clearance of all existing structures, levelling of the Site with up to 5.06m of cut in the north and 3.8m of fill in the south, including infilling of basement levels, followed by construction of five warehouse units with associated external yards and car parking.

Surface water drainage in the new development will comprise a number of unsealed attenuation tanks which drain to municipal drain, and permeable pavements across parking areas. The proposed drainage design drawings have been provided to TRC by Burrows Graham, the Client's engineers (40237-BGL-XX-XX-DR-C-00220, 40237-BGL-XX-XX-DR-C-0022, 40237-BGL-XX-XX-DR-C-00222) and are appended to this letter for ease of reference. The Burrows Graham reports and drawings have also been submitted in support of the planning application.

Cross sections which show the existing and proposed development levels are shown on Drawing No: 40237-BGL-XX-XX-DR-C-00205 and are also appended to this letter.

The ancient and semi-natural woodland (Nores Hill) which are the subject of this appraisal are located adjacent to the north and west of the Site as shown in Figure 1.

2.0 Summary of Geology, Hydrology and Hydrogeology

2.1 On-Site

TRC undertook a Tier 1 'Desk Based Geoenvironmental and Geotechnical Site Assessment' (dated 25/07/2024, report ref: 610344) and a Tier 2 'Intrusive Geoenvironmental and Geotechnical Site Assessment' (dated 16/08/2024, report ref: 610344). These reports were prepared in support of the planning application and to aid design stages for development.

The TRC assessments found that the published geology for the Site was expected to comprise Made Ground soils associated with prior developments at the Site. This was expected to be underlain by natural soils comprising London Clay Formation (bedrock). During intrusive works, TRC found that the ground conditions were consistent with geological mapping data. Made Ground was encountered in all of the exploratory holes from ground level to a maximum recorded depth of 2.20m bgl. London Clay Formation was recorded in all exploratory holes that were not terminated in Made Ground, from 0.10m to >5.45m bgl.

Geological mapping indicated the potential for River Terrace Deposits to be present above the bedrock in the north of the Site. These deposits were not observed by TRC.

Bedrock comprising London Clay Formation is classified by the Environment Agency (EA) as Unproductive Strata, and the River Terrace Deposits classified as a Secondary (A) Aquifer.

Groundwater was not encountered except for a seepage in Made Ground at 0.20m bgl in WS102. During subsequent monitoring, groundwater was encountered from 0.57 to 4.64m bgl within weathered London Clay Formation. Groundwater was expected to flow down the topographical gradient, towards the southwest of the Site.

The nearest surface water feature was noted as two ponds approximately 5m south of the Site, and a stream (Foundry Brook) located approximately 85m south of the Site. Surface waters are unlikely to be in hydraulic continuity with groundwater beneath the Site due to the absence of a groundwater body within the bedrock. There may be local hydraulic connectivity if River Terrace Deposits are found to be present as groundwater may be found within that geological unit due to its more granular characteristics.

2.2 Ancient Woodland

The ancient woodland, namely Nores Hill, is mapped directly to the north of the Site as shown in the attached figure. The woodland to the west of the Site is not classified as ancient woodland.

British Geological Survey (BGS) maps show that the ancient woodland is directly on top of the same bedrock as the Site (London Clay Formation). It is anticipated that ground conditions beneath the woodland would have a similar character to the conditions observed beneath the Site. The London Clay Formation is formed of a low permeability clay deposit and is classified as Unproductive Strata. Given the local topography of the woodland, it is expected that any groundwater and surface water run off would flow to the north west, down the topographical gradient of the woodland.

3.0 Geology, Hydrology and Hydrogeology assessment

Based on the information summarised in this letter, bedrock is present beneath the Site and the ancient woodland is classified as Unproductive Strata and therefore is not expected to hold significant volumes of groundwater. Where groundwater is present is expected to be locally perched in near surface granular deposits and likely to have very low yields.

This understanding is supported by the findings of the Tier 2 ground investigation which did not record any groundwater strikes within the bedrock during drilling. Following installation of monitoring wells,

TRC recorded limited groundwater and at various depths. This indicates that observed water is not consistent of a groundwater body.

Any groundwater present is unlikely to be continuous between the Site and the ancient woodland and therefore any impact to groundwater beneath the Site resulting from the redevelopment of the Site is unlikely to impact on the woodland.

It is reasonable to assume that surface water runoff will naturally follow the surface topography and would therefore flow to the south east on the Site, and to the north west in the ancient woodland, with the exception of a narrow area along the north east of the Site which slopes to the north east. There is likely to be a small change resulting from the earthworks cut in the north east of the Site as shown in cross section B (Drawing No: 40237-BGL-XX-XX-DR-C-00205) where at 50-60m along the section, what was a small slope down to the woodlands to the northwest will be changed to slope down to the south east. Considering the small area over which this change in slope direction will occur, this is not anticipated to cause significant change to the surface water runoff and infiltration in the woodland.

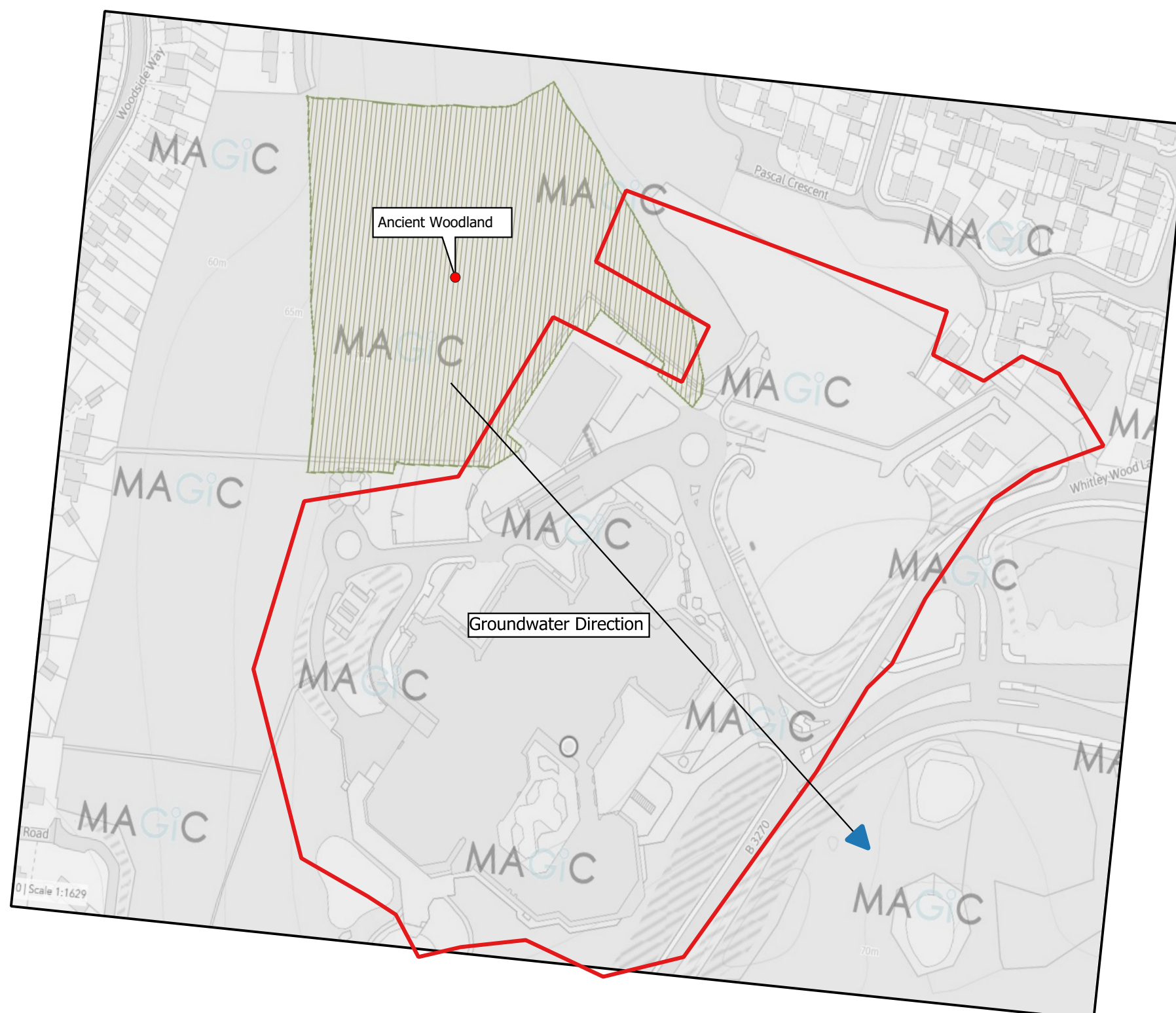
Post-development, surface waters will be captured in a sealed drainage system and discharged to a municipal drainage network. There will be limited opportunity for rainwater infiltration other than in areas of landscaping and the buffer zone between the development and the ancient woodland.

The existing basements are to be backfilled with recycled aggregates recovered from demolition works, as shown by the cross sections. This infilling will create localised zones of high permeability deposits within the London Clay Formation. These permeable zones may create local areas of groundwater accumulation, but TRC do not consider that this will affect surface or groundwater flow to the ancient woodland as there is segregation by natural low permeability deposits of the London Clay Formation and the topographic changes observed on site and within the woodland.

4.0 Conclusion

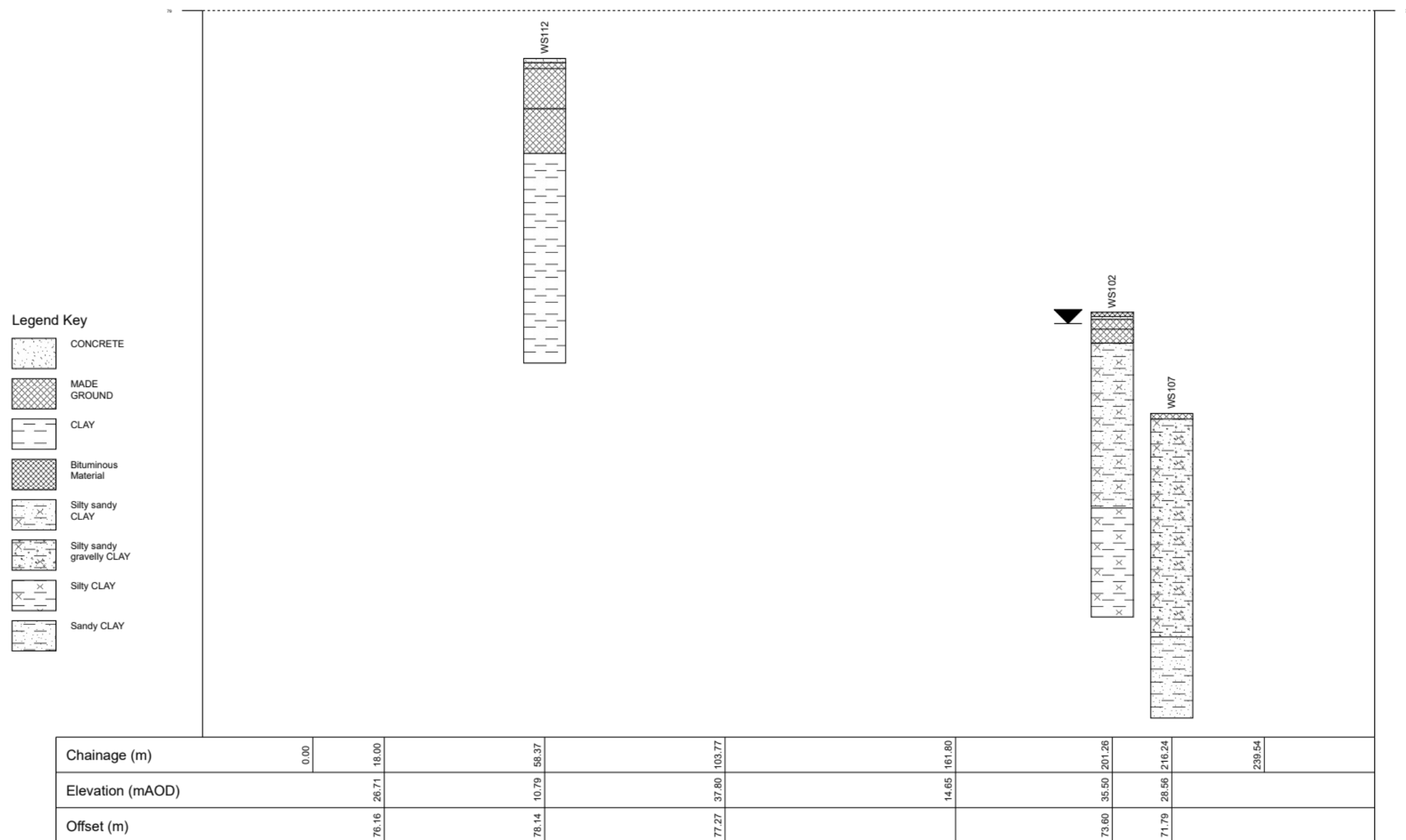
TRC considers that it is unlikely that the redevelopment of the Site will result in a material impact to the surface water or groundwater in the ancient woodland (Nores Hill) to the northeast. No further study is recommended at this time.

Annex A: Figures

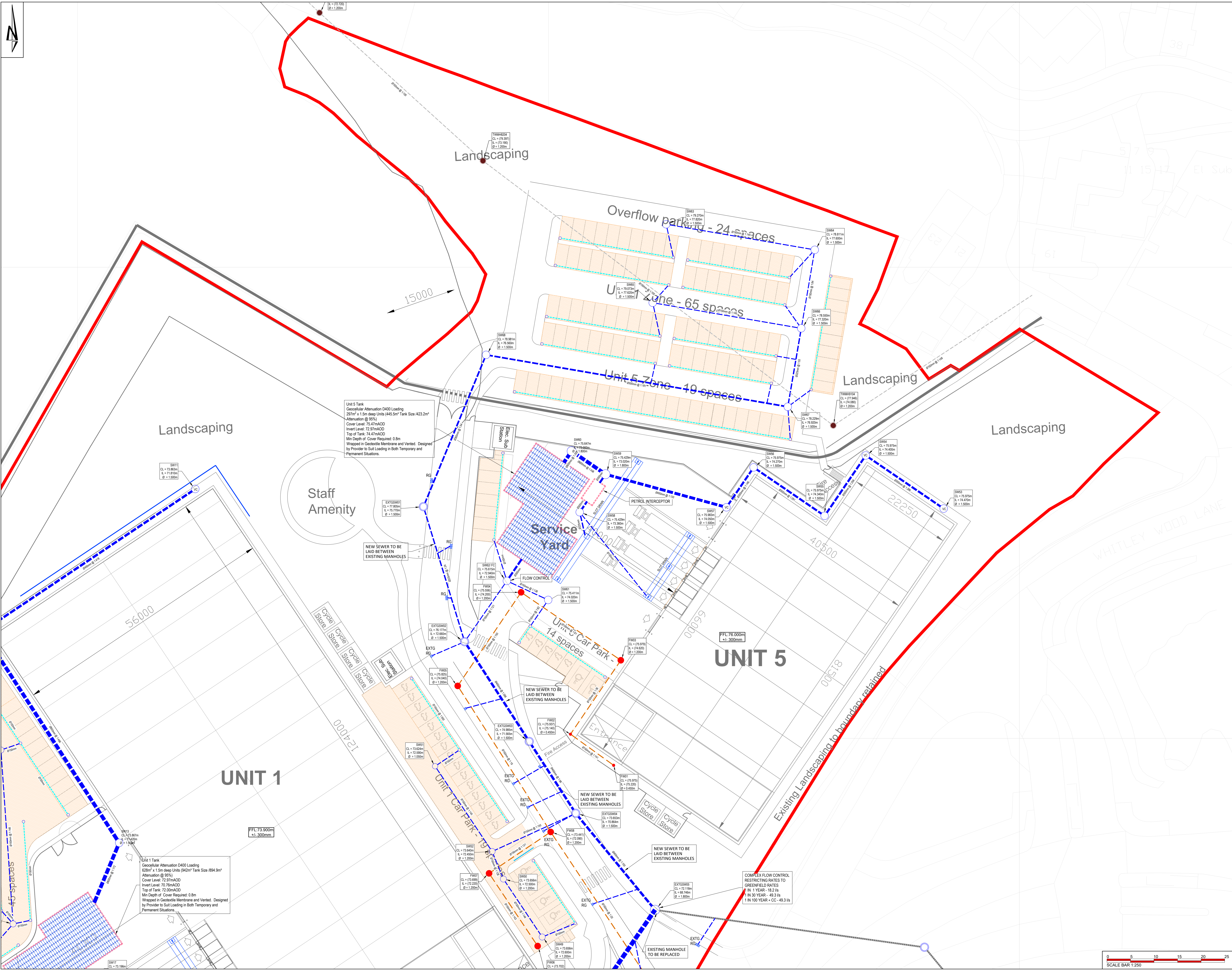


 Site Boundary

NOTES	COPYRIGHT NOTES	REVISIONS				Work.Life, 20 Red Lion St, London WC1R 4PQ		TITLE Shinfield Park Ancient Woodland		
								TRC PROJECT NO. 610334	SCALE N/A	
		P01	FIRST ISSUE			CLIENT WRENBRIDGE (FRELD READING) LLP		PURPOSE OF ISSUE SUITABLE FOR INFORMATION		STATUS
			Initials	KS	10/2/2025					
		REV.	REVISION NOTES/COMMENTS				PROJECT SHINFIELD PARK, READING		DRAWING NO FIGURE 01	
Initials										



NOTES	COPYRIGHT NOTES	REVISIONS				Work.Life, 20 Red Lion St, London WC1R 4PQ		TITLE	
								Shinfield Park Geological Section	
		TRC PROJECT NO.		SCALE					
		610334		N/A					
		P01	FIRST ISSUE			CLIENT WRENBRIDGE (FRELD READING) LLP		PURPOSE OF ISSUE SUITABLE FOR INFORMATION	
Initials	KS		10/2/2025						
REV.	REVISION NOTES/COMMENTS				PROJECT SHINFIELD PARK, READING		DRAWING NO FIGURE 02		REVISION PO1
	Initials								



THIS DRAWING IS THE COPYRIGHT OF BURROWS GRAHAM LIMITED.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION

1. Add residual risks here

MAINTENANCE

1. Add residual risks here

DEMOLITION

1. Add residual risks here

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS' ENGINEERS' AND SERVICE ENGINEERS' DRAWINGS & SPECIFICATIONS.

2. BASED ON SURVEY SOLUTIONS TOPOGRAPHIC SURVEY 677878WJG-01_08 AND CHETWOOD ARCHITECTS LAYOUT 5704-CA-ZZ-00-DR-A-00051.

KEY:

Site Boundary

Proposed Building Level

Proposed Surface Water pipe & Chamber

Proposed Foul Water pipe & Chamber

Proposed Syphonic Pipe

Proposed Linear Channel Drain

Proposed Kerb Drain

Proposed Perforated

Proposed Vent Pipe

Attenuation Tank

Proposed Lined Permeable Paving

Access Road Bio Retention Area

Proposed Road Gully

Proposed Kerb Drain Gully

Access Point

Linear Channel Gully Unit

Syphonic Rainwater Downpipe

Vented Cover

Proposed Rodding Eye

P01	07.02.2025	GL	First Issue	RM
REV	DATE	BY	DESCRIPTION	CHKD

Burrows Graham

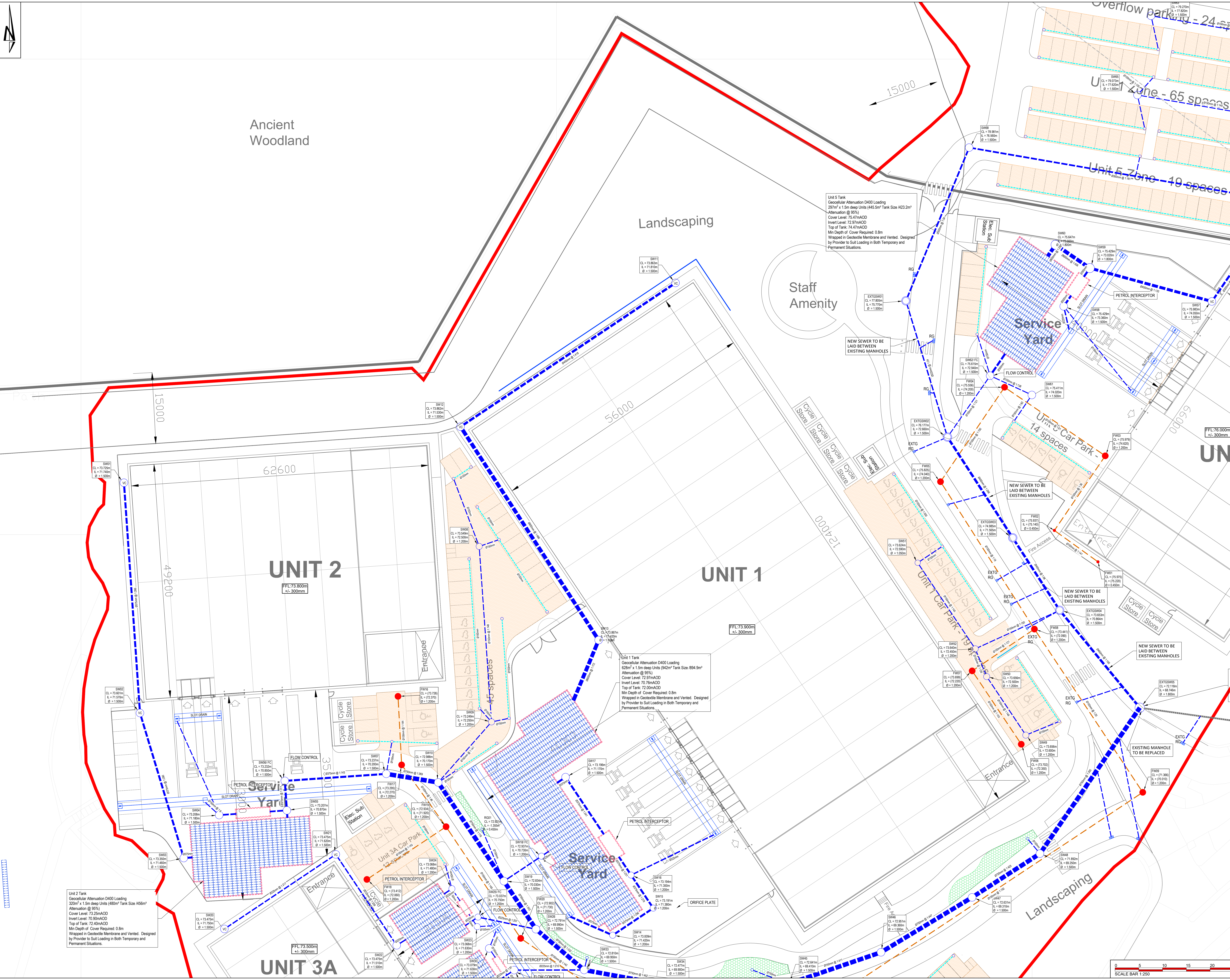
North Office:
5 Ambassadors Place, Stockport Road,
Altrincham WA15 8DQ
Tel: +44 (0)161 804 8046
South Office:
Buckfield House, Dover Mews,
High Street, Bathurst H4 2BL
Tel: +44 (0)1422 506 402

CLIENT
WRENBRIDGE

PROJECT
SHINFILED PARK
READING

DRAWING TITLE
DRAINAGE STRATEGY
SHEET 1

SOL PROJECT NUMBER 40237	DRAWING STATUS PRELIMINARY	OFFICE SOUTH
SCALE @ A0 1:250	DATE 07.02.2025	DRAWN BY GL
DRAWING No 40237-BGL-XX-XX-DR-C-00220	CHECKED BY RM	REV P01



THIS DRAWING IS THE COPYRIGHT OF BURROWS GRAHAM LIMITED.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION

1. Add residual risks here

MAINTENANCE

1. Add residual risks here

DEMOLITION

1. Add residual risks here

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS' ENGINEERS' AND SERVICE ENGINEERS' DRAWINGS & SPECIFICATIONS.

2. BASED ON SURVEY SOLUTIONS TOPOGRAPHIC SURVEY 677878WJG-01, 08 AND CHETWOOD ARCHITECTS LAYOUT 5704-CA-ZZ-00-DR-A-00051.

KEY:

- Site Boundary
- S.S.L. XX.XXm Proposed Building Level
- SWD Proposed Surface Water pipe & Chamber
- FWD Proposed Foul Water pipe & Chamber
- Proposed Syphonic Pipe
- Proposed Linear Channel Drain
- Proposed Kerb Drain
- Proposed Perforated
- Proposed Vent Pipe
- Attenuation Tank
- Proposed Lined Permeable Paving
- Access Road Bio Retention Area
- Proposed Road Gully
- Proposed Kerb Drain Gully
- Access Point
- Linear Channel Gully Unit
- Syphonic Rainwater Downpipe
- Vented Cover
- Proposed Rodding Eye

REV	DATE	BY	DESCRIPTION	CHKD
P01	07.02.2025	GL	First Issue	RM

Burrows Graham

North Office: 5 Ambassador Park, Stockport Road, Altrincham WA15 8DZ
Tel: +44 (0)161 804 8046

South Office: Backlund House, Dover Mews, High Street, Beckenham HA4 2BL
Tel: +44 (0)1473 288 402

CLIENT: WRENBRIDGE

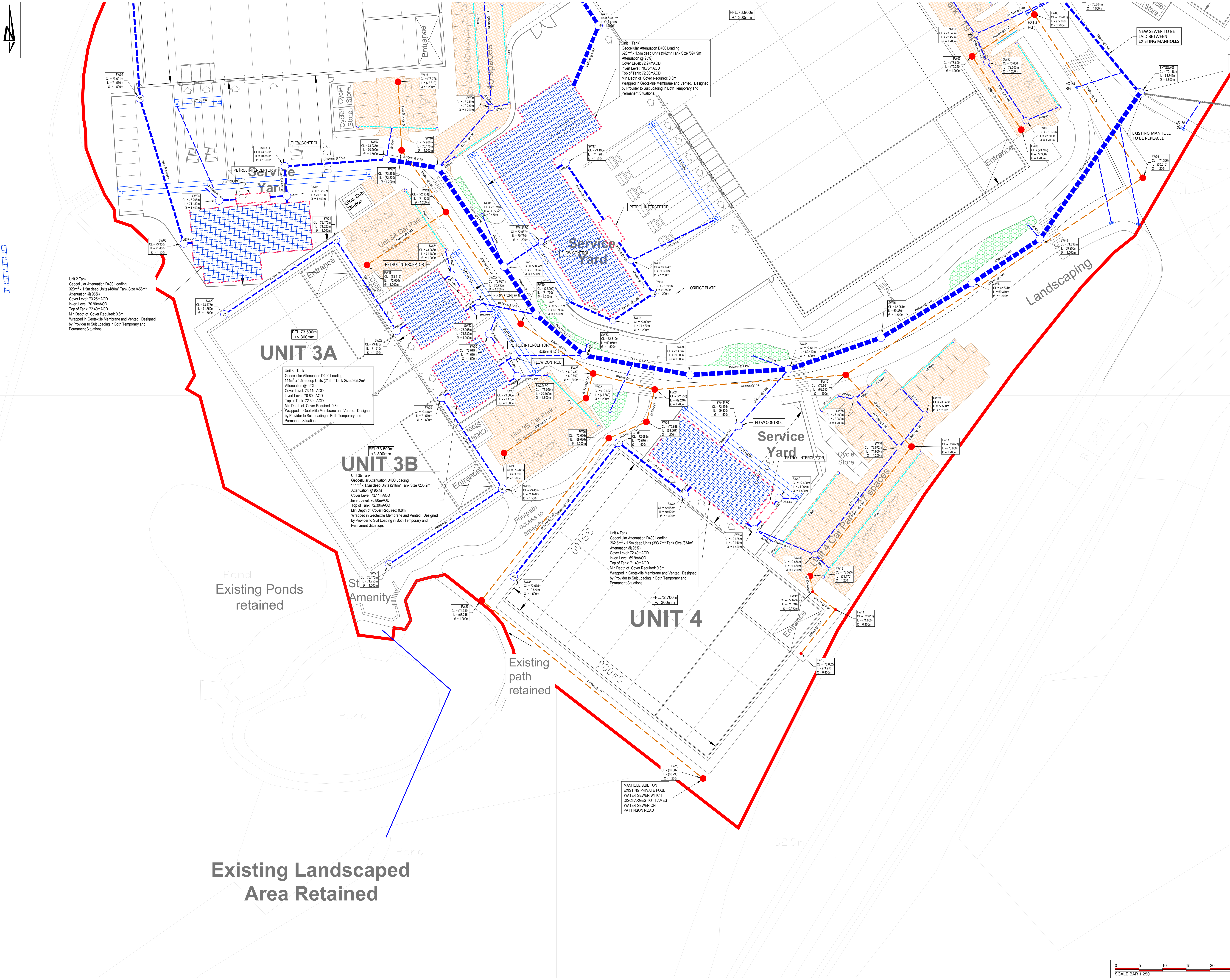
PROJECT: SHINFELD PARK READING

DRAWING TITLE: DRAINAGE STRATEGY SHEET 2

SCALE	DATE	DRAWING STATUS	OFFICE
SCALE A0 1:250	07.02.2025	PRELIMINARY	SOUTH

DRAWING NO.	SCALE	DATE	DRAWN BY	CHECKED BY
40237-BGL-XX-XX-DR-C-00221	1:250	07.02.2025	GL	RM

REV	DESCRIPTION
P01	



THIS DRAWING IS THE COPYRIGHT OF BURROWS GRAHAM LIMITED.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION

1. Add residual risks here

MAINTENANCE

1. Add residual risks here

DEMOLITION

1. Add residual risks here

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS' ENGINEERS' AND SERVICE ENGINEERS' DRAWINGS & SPECIFICATIONS.

2. BASED ON SURVEY SOLUTIONS TOPOGRAPHIC SURVEY 677878WBG-01.08 AND CHETWOOD ARCHITECTS LAYOUT 5704-CA-ZZ-00-DR-A-00051.

KEY:

S.S.L. XX.XXm

Proposed Building Level

SWD

Proposed Surface Water pipe & Chamber

FWO

Proposed Foul Water pipe & Chamber

Proposed Syphonic Pipe

Proposed Linear Channel Drain

Proposed Kerb Drain

Proposed Perforated

Proposed Vent Pipe

Attenuation Tank

Proposed Lined Permeable Paving

Access Road Bio Retention Area

RG

Proposed Road Gully

KDG

Proposed Kerb Drain Gully

AP

Access Point

SU

Linear Channel Gully Unit

SWAP

Syphonic Rainwater Downpipe

VC

Vented Cover

RE

Proposed Rodding Eye

P01	07.02.2025	GL	First Issue	RM
REV	DATE	BY	DESCRIPTION	CHKD

Burrows Graham

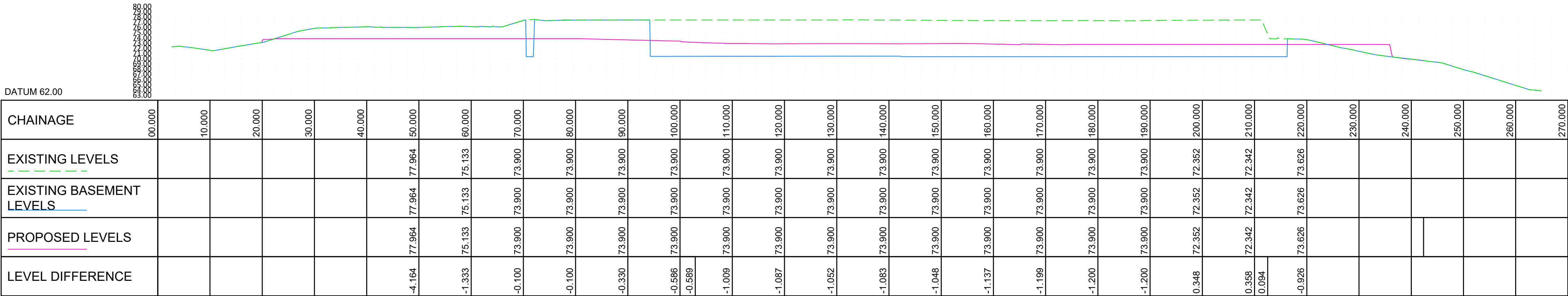
North Office:
5 Ambassadors Place, Stockport Road,
Altrincham WA15 6DZ
Tel: +44 (0)161 804 8046
South Office:
Buckfield House, Dover Mews,
High Street, Beckenham HA4 2BL
Tel: +44 (0)1473 258 402

CLIENT
WRENBRIDGE

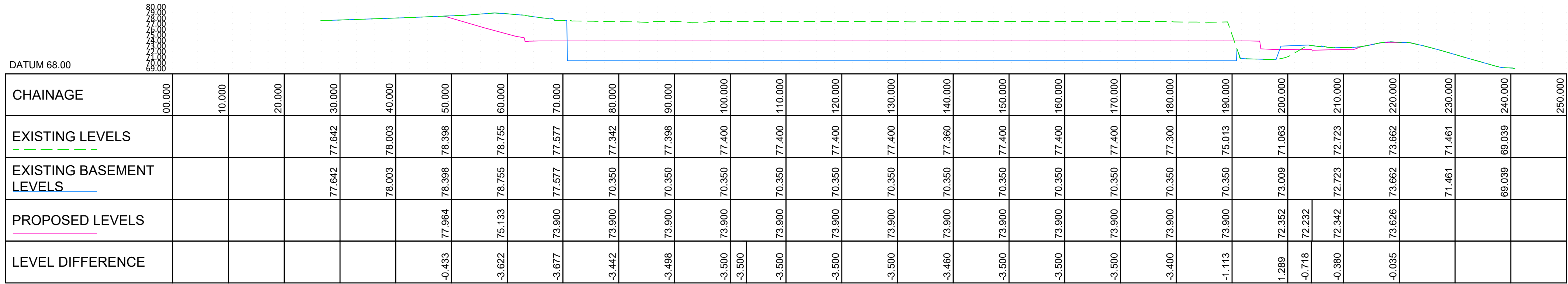
PROJECT
SHINFIELD PARK
READING

DRAWING TITLE
DRAINAGE STRATEGY
SHEET 3

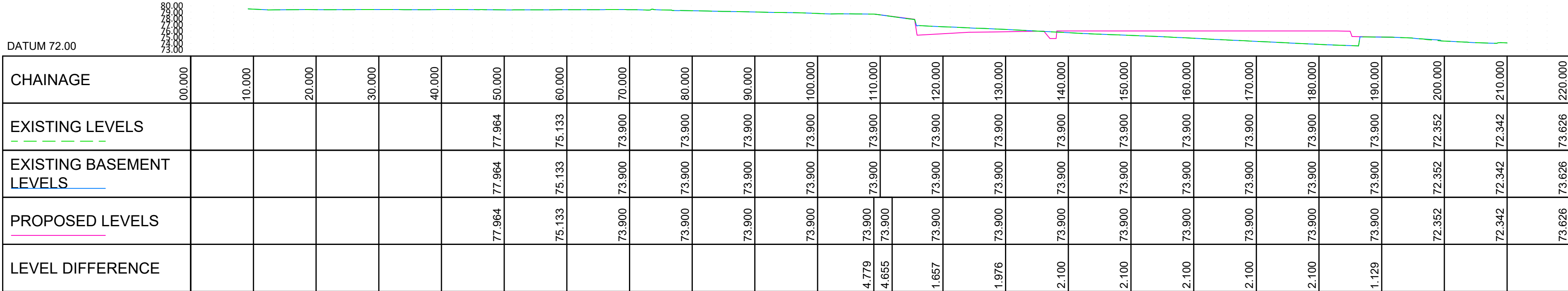
SOL PROJECT NUMBER 40237	DRAWING STATUS PRELIMINARY	OFFICE SOUTH
SCALE @ A0 1:250	DATE 07.02.2025	DRAWN BY GL
DRAWING No 40237-BGL-XX-XX-DR-C-00222	CHECKED BY RM	REV



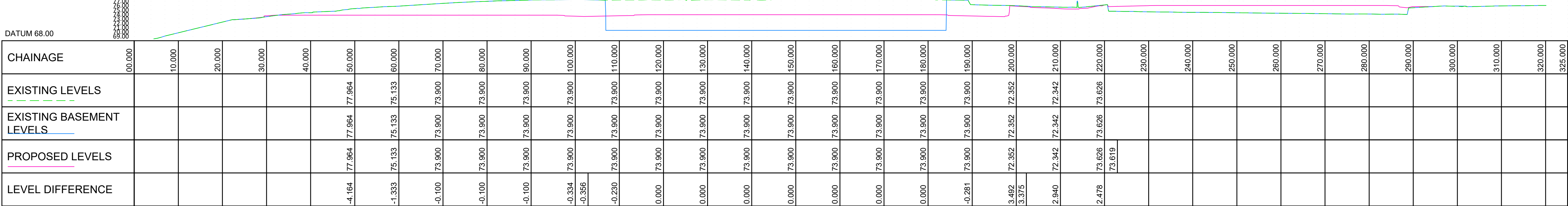
SECTION A - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 62.000



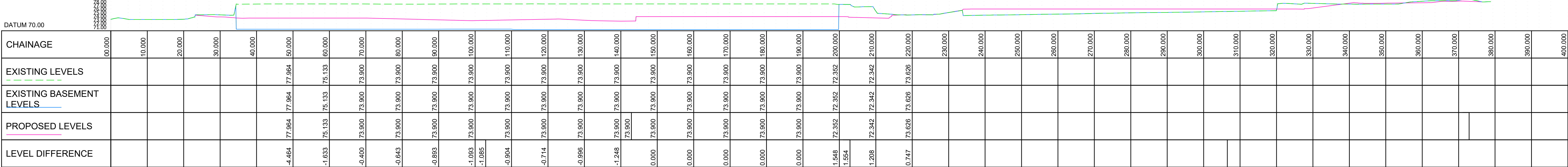
SECTION B - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 68.000



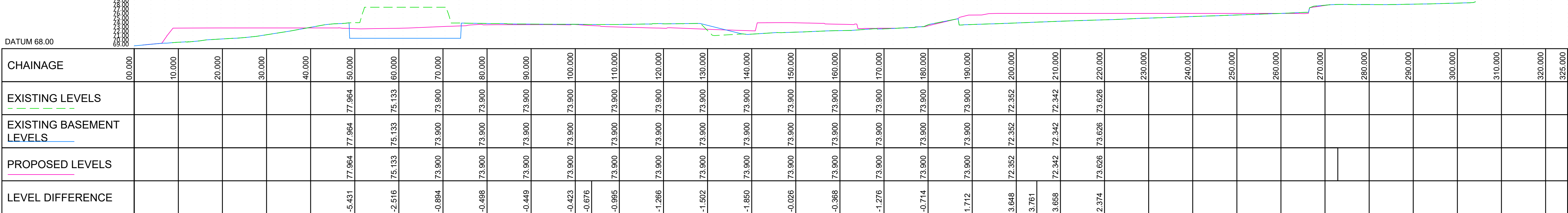
SECTION C - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 72.000



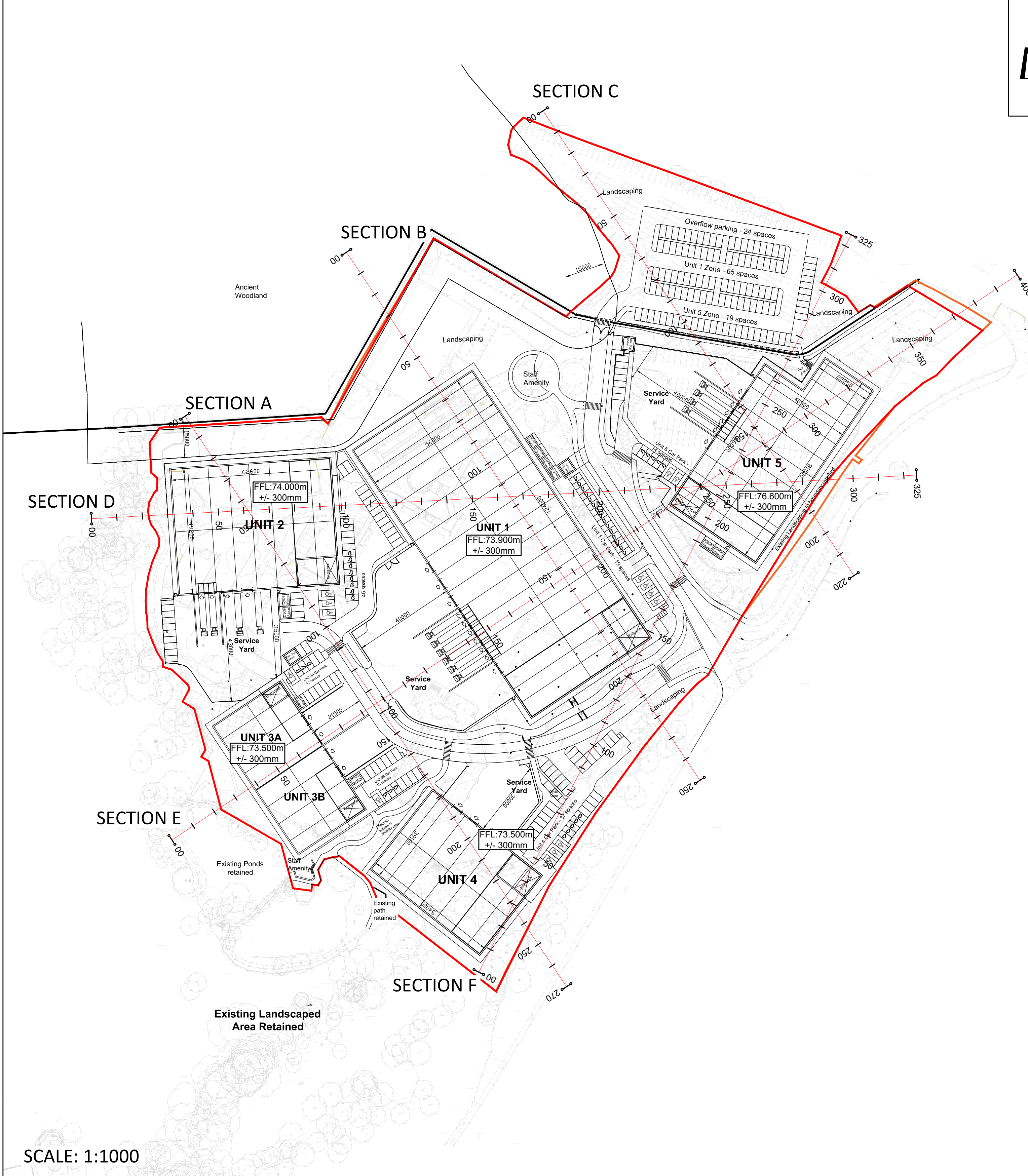
SECTION D - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 68.000



SECTION E - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 70.000



SECTION F - LONGSECTION
SCALE: H 1:500,V 1:500. DATUM: 68.000



THIS DRAWING IS THE COPYRIGHT OF BURROWS GRAHAM LIMITED.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDOUS RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING:

CONSTRUCTION

1. Add residual risks here

MAINTENANCE

1. Add residual risks here

DEMOLITION

1. Add residual risks here

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT

GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL THE RELEVANT ARCHITECTS' ENGINEERS' AND SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.

2. PROPOSED SITE LAYOUT IS BASED ON CHETWOODS LAYOUT 05023.

3. TOPOGRAPHY SURVEY PLAN IS BASED ON SURVEY SOLUTIONS DRAWING 61797RWLS 01-05.

Key:

Site Boundary

Proposed Level

Top of Wall Level

Proposed Slope

Precast Retaining Wall

0.000m

0.00m

100.00m

1:40

REV	DATE	BY	DESCRIPTION	CHKD
P05	05.02.25	GL	BASEMENT EXTENTS ADDED	-
P04	05.02.25	GL	UPDATED TO SUIT LATEST LEVELS	-
P03	28.10.24	GL	UPDATED TO SUIT LATEST LEVELS	-
P02	18.10.24	GL	UPDATED TO SUIT LATEST LEVELS	-
P01	07.10.24	GL	ISSUED FOR INFORMATION	-

Burrows Graham

North Office:
5 Ambassador Place, Stockport Road,
Altrincham WA15 6JH
Tel: +44 (0)161 804 8046

South Office:
Buckland House, Dover Mews,
High Street, Beckenham HA4 2BL
Tel: +44 (0)1473 208 402

CLIENT

WRENBRIDGE

PROJECT

SHINFELD PARK
READING

DRAWING TITLE

SITE SECTIONS

BGL PROJECT NUMBER

40237

DRAWING STATUS

PRELIMINARY

OFFICE

SOUTH

SCALE @ A0

As Noted

DATE

07/10/2024

DRAWN BY

GL

CHECKED BY

RM

DRAWING No

40237-BGL-XX-XX-DR-C-00205

REV

P05