

**LINEAR PARK, PHASE 3
ARBORFIELD**

CREST NICHOLSON OPERATIONS Ltd

SURFACE WATER DRAINAGE DESIGN – DRAINAGE STATEMENT

AP/ST/0777/7715 Rev A
27th August 2026

**This drainage statement is in support of Linear Park Phase 3 of the Arborfield Green
Development**

Introduction

Crest Nicholson Operations Limited has appointed MJA Consulting Ltd to prepare the following drainage statement to accompany the planning application for the Linear Park Phase 3 which forms part of the Arborfield Green development.

The proposed works are located south of Biggs Lane adjacent to Parcel 02 of the wider Arborfield Development. The Linear Park Phase 3 proposals include the provision of a 3.5 m wide footway/bridleway which forms part of the wider network of pedestrian/cycleway routes through the development together with an allotment, skatepark and play area. The proposed bridleway is shown on the Overall Landscape Masterplan (Appendix A) and the associated footpath and bridleway detail drawing (Appendix B).

The proposed works are bounded to the east, west and south by a series of existing watercourses and culverts, all of which eventually discharge via culvert into a lake located on the northern side of Biggs Lane. These watercourses provide the principal surface water drainage for the existing site.

The existing watercourses have a number of existing design constraints which are causing flooding throughout the network. Following flood modelling performed by Aecom, it is shown that the northern section of the proposed footway/bridleway is located within a 1/100 yr +cc flood zone.

This drainage statement seeks to demonstrate that following improvement works and necessary design implementations, the footway/bridleway will remain dry.



Improvements to Existing Watercourse Network

The existing watercourses provide defined routes for surface water conveyance through the Linear Park. The watercourses have several design constraints which are causing blockages of the channel including small diameter culverts in multiple locations and bridges located at bank level. The proposed arrangement seeks to retain the required drainage channels while removing some of the redundant culvert structures, reducing the restriction of flow.

Aecom drawing 60312043/CIV/324, included in Appendix C, shows the structures to be removed/replaced within the site. Following the removal/replacement of these structures, the watercourse will be returned where possible to a natural channel and the flooding due to blockages and restrictions will be eliminated, increasing the capacity of the watercourse network and improving the extent of flooding within the site.

The existing flood model produced by Aecom includes the identified structures and therefore represents the existing conditions and worst-case scenario. The proposed removal of these structures will improve the flow path through the Linear Park and reduce the potential for water to back up behind these structures, reducing the flood zone shown by this model.

In addition to the removal of the redundant structures, a number of new culverts are proposed to replace the existing small-diameter culvert crossings to maintain access across the watercourses, as shown in Appendix D, Allotment Access and Drainage Details. The proposed culverts will be DN450 Polypipe or similar, reflecting the size of pipework within the surrounding drainage network and providing an appropriate conveyance route without restricting flows.

Permeable Allotment Car Park

The proposed drainage strategy will incorporate permeable paving within the car park adjacent to the allotment, as detailed on Drawing 7715-MJA-SW-XX-DR-C-201 in Appendix D. The use of permeable paving is consistent with the requirements of the National Planning Policy Framework (NPPF), which requires applications that could affect drainage to incorporate sustainable drainage systems to control flow rates and reduce runoff volumes, proportionate to the nature and scale of the development. The proposed permeable car park has been designed in accordance with the National Standards for Sustainable Drainage Systems and the principles set out within CIRIA C753 *The SuDS Manual*. The permeable paving will allow rainfall to pass through the surface into the underlying sub-base, providing temporary storage and reducing surface water runoff from the car park.

Proposed Footpath/ Bridleway Design

The flood modelling undertaken by Aecom represents the existing and worst-case scenario. The removal of the bridges and multiple small diameter culvert whilst not modelled will significantly improve the flooding observed in the Aecom model. The elevated footway/cycleway has therefore been designed with the worst flooding in mind noting this will improve following removal of said impediments.

Appendix B shows the extent of the proposed footway/ bridleway within the current flood zone area. Consequently, the route has been designed to provide sufficient vertical clearance of the area.

Two points along the footway/bridleway were analysed to determine the predicted flood levels based on the watercourse modelling. The following data provided by Aecom shows the predicted depth and estimated topographical level of flooding based upon the 30-year event, 1:100 year + 14% climate change and 1:100 year + 23% climate change.

Point 1 (X477357, Y165664)

Event	Flood Depth	Flood Level
30yr (Functional Floodplain)	0.16m	50.57m AOD
100yr + 14%CC (Central)	0.22m	50.63m AOD
100yr + 23%CC (Higher)	0.24m	50.65m AOD

Point 2 (X477312, Y165579)

Event	Flood Depth	Flood Level
30yr (Functional Floodplain)	0.18m	50.61m AOD
100yr + 14%CC (Central)	0.26m	50.67m AOD
100yr + 23%CC (Higher)	0.28m	50.69m AOD

The footway/bridleway will be raised a minimum of 450mm above the 1/100ye + cc flood level, 160mm above the highest flood depth, and will include 150mm flood culverts perpendicular to the footway/cycleway underneath the embankment. They will be located every 5m within the flood zone and will ensure the free flow of water within the flood zone, preventing the footway/bridleway acting as a barrier to flood flows.

The combination of the proposed watercourse improvements and the raised design of the footway/bridleway will therefore maintain the existing flood flow routes through the Linear Park while allowing the footway/bridleway itself to remain above the modelled flood levels.

Additional Proposed Works

The wider Linear Park Phase 3 works also include the provision of an allotment area, skatepark and play area. The proposed allotments, skatepark and play area comprise predominantly of open space and recreational features and do not include buildings or significant areas of impermeable surfacing. Consequently, no formal drainage infrastructure is required and additional surface water runoff will not be generated.

Surface water from the proposed allotment car park will be managed separately through the permeable paving arrangement described above.

Conclusion

The proposed Linear Park Phase 3 works have been developed to address the existing hydraulic restrictions within the watercourse network and improve the conveyance of surface water through the site.

Overall, the removal of the existing redundant culverts and other hydraulic restrictions will improve the conveyance of flows through the watercourse network, reducing the extent and depth of flooding within the Linear Park. Where crossings of the watercourses are required, the proposed DN450 culverts will replace the existing small-diameter culvert crossings, maintaining access across the watercourses while providing an appropriate conveyance route consistent with the surrounding drainage network.

The proposed footway/bridleway will be raised above the modelled flood levels, with flood relief culverts provided beneath the route to maintain the passage of floodwater. As a result, the proposed improvements will reduce flooding within the site and ensure that the proposed footway/bridleway remains dry during the assessed flood events without increasing flood risk elsewhere.

APPENDICES

APPENDIX A – Overall Landscape Masterplan

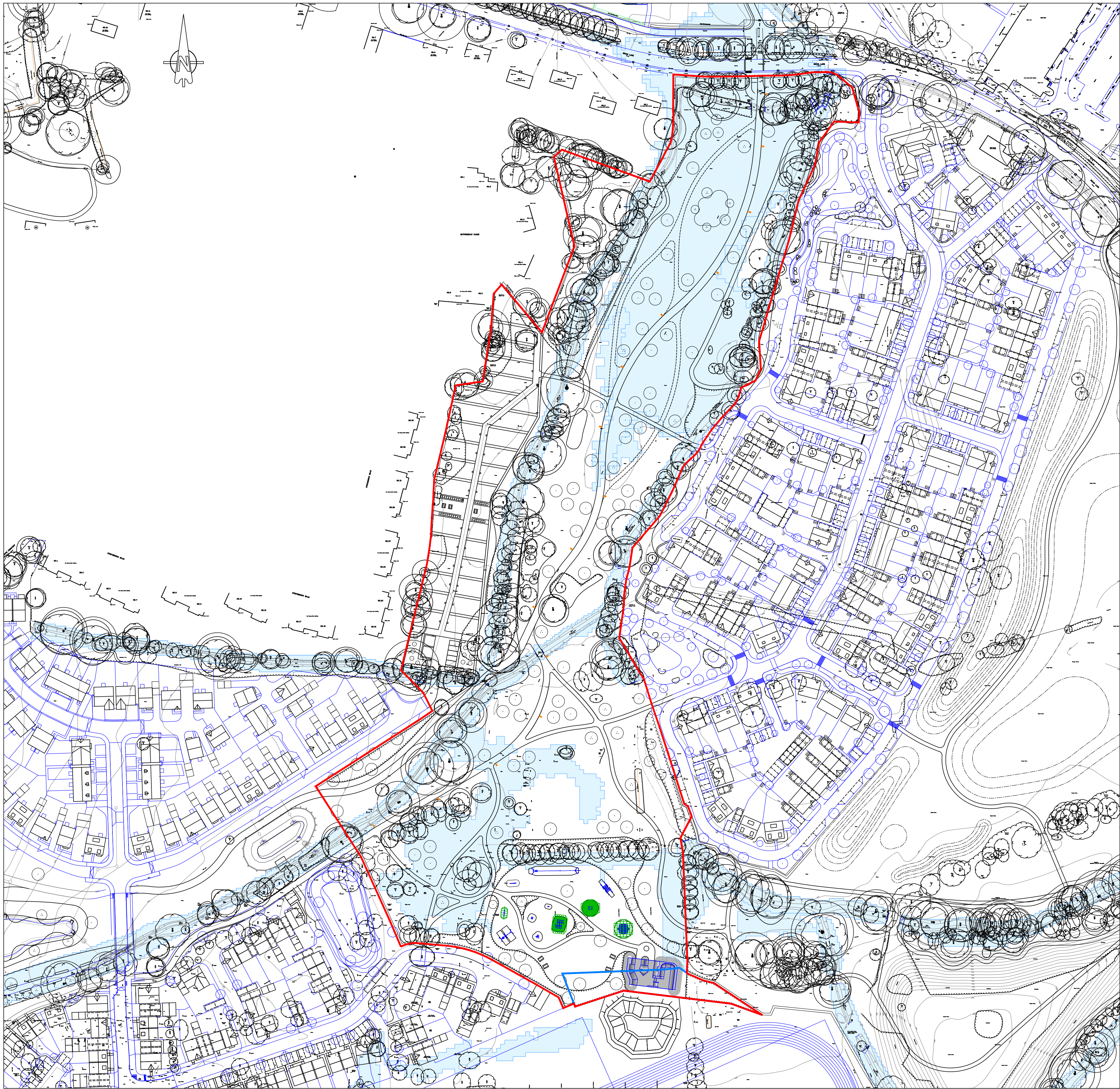
APPENDIX B – Raised footpath/bridleway details

APPENDIX C – Sitewide Watercourse Structure Removal Location Plan

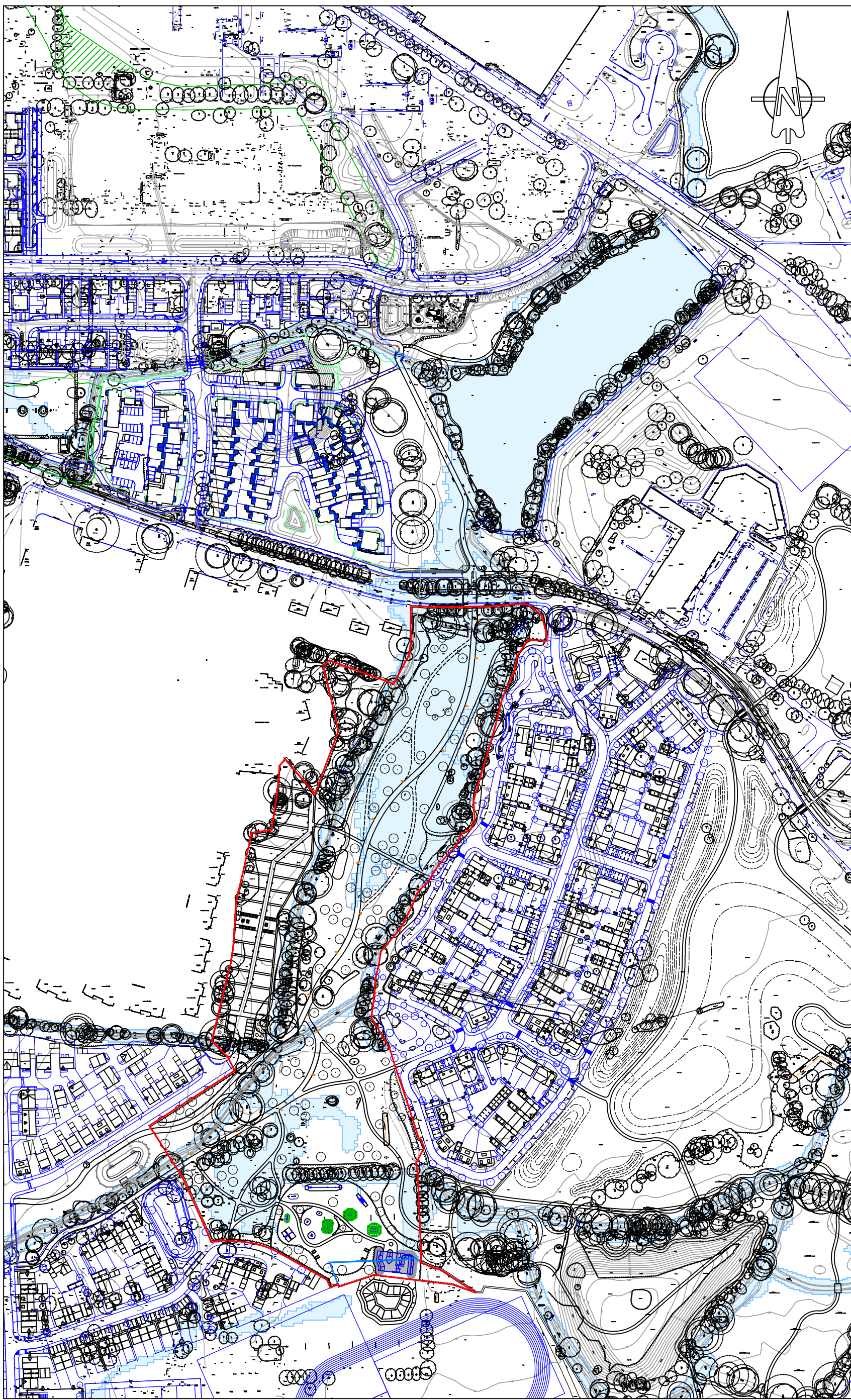
APPENDIX D – Allotment Access and Drainage Details

Appendix A

MJA-SW-XX-DR-C-001 Overall layout and location plan



OVERALL LAYOUT
Scale 1:1000



LOCATION PLAN
Scale 1:2500

P3	24.08.26	Client comments added to layout	EB	KTG
P2	17.08.26	New layout added	EB	KTG
P1	13/07/26	First Issue	EB	KTG
REV. No.	DATE	DESCRIPTION	DRAWN	CHECKED
Client			MJA CONSULTING CIVIL & STRUCTURAL ENGINEERS Ipsium Court, 24 The Quadrant, Abingdon Science Park, Abingdon Oxon, OX14 3YS Tel: 01235 555173 Email: mail@mjaconsulting.co.uk	
Project		Linear Park Ph3 Arborfield, Wokingham	Status: PRELIMINARY	
Title		Overall layout and location plan	Scale: As shown Drawn: EB Project Engineer KTG MJA Project No: 7715 Date: 10/07/2026 Drawing Number: 7715-MJA-SW-XX-DR-C-001 Rev: P3	

Appendix B

MJA-SW-XX-DR-C-200 Raised footpath/cycleway details