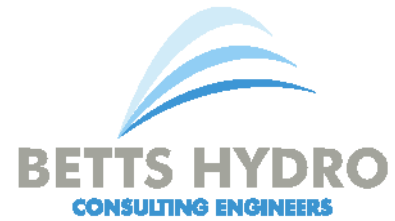


23rd June 2026

Barratt Homes (Manchester)
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
M20 2YY



SUDS MAINTENANCE AND MANAGEMENT PLAN

SITE: WIMBERRY HILL FARM, GLOSSOP

We have been asked to prepare an outline Sustainable Drainage Systems Maintenance and Management Plan to support the proposed development at the site above. The purpose of this statement is to identify the typical requirements in accordance with CIRIA (2015) for maintenance and management of the drainage infrastructure that has been proposed (see *Appendix A*). The Preliminary Drainage Layout, prepared by Betts Associates, has been appended to this statement for completeness (see *Appendix A* for further details).

In terms of the proposed surface water management infrastructure, source control will also be provided via permeable surfacing (private, non-adoptable driveways). Conveyance will likely be in the form of an underground pipe network. Stormwater storage generated in the events up to and including the 1 in 100yr plus 45% climate change allowance event will be catered for by a detention basin. Further treatment will be provided by a water quality pond, downstream of the proposed detention basin.

The proposals are to also utilise a below ground pipework to deal with the proposed foul water flows generated by the proposed development site, although this system will be kept entirely separate to the proposed surface water system in accordance with best practice guidance. The proposed drainage infrastructure will be offered to United Utilities or a NAV for adoption. The adoptee should be inspecting any assets regularly, preferably during and after heavy rainfall to check effective operation.

The following section will consider the typical maintenance and management techniques recommended for the types of drainage infrastructure included within the Preliminary Drainage Layout. Regular inspection and maintenance is required to ensure the effective long-term operation of all proposed components. Maintenance responsibility for systems should be placed with a responsible organisation.

Regular inspection and maintenance of drainage systems are important for their effective and continued operation. Maintenance activities can be broadly defined as regular, occasional, and remedial maintenance. The proposed maintenance regime for the surface and foul water drainage infrastructure should follow typical guidance for management and maintenance, guidance can also be sought from the CIRIA 753 SuDS Manual where appropriate. Guidance on the operation and maintenance requirements that may be appropriate are outlined subsequently; this is not exhaustive, and some actions may not always be required.

PIPEWORK AND MANHOLES

Page 1 of 6



Old Marsh Farm Barns
Welsh Road, Sealand
Flintshire CH5 2LY
Telephone: 01244 289 041

Below ground pipework and manholes should be routinely monitored to ensure they are operating safely and sustainably. The pipework should be inspected routinely, and any defects repaired as and when required.

PERMEABLE SURFACING

Regular and ongoing maintenance is required for permeable paving to ensure that they continue to operate to the design performance standards. Detailed specifications and frequencies should be provided for the required maintenance, along with annual costs and any potential machinery necessary to undertake maintenance. Different designs will have different operational and maintenance requirements (to be confirmed at the detailed design stage). The typical requirements set out in **Table 1** below are as recommended within The SuDS Manual.

Table 1: Recommended Maintenance Routines for Permeable Surfacing (CIRIA, 2015)

Regular Maintenance	Frequency
Brushing and vacuuming (standard cosmetic sweep over whole surface)	Annually (after autumn leaf fall)
Occasional Maintenance	Frequency
Stabilise and mow contributing and adjacent areas	As required
Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required, or annually on less frequently used pavements
Remedial Actions	Frequency
Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
Rehabilitation of surface and upper substructure by remedial sweeping	As required
Monitoring	Frequency
Initial inspection	Monthly (for three months post-installation)
Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Every 3 months (48hr following large storms for first 6 months)
Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
Monitor inspection chambers	Annually

DETENTION BASIN

Regular and ongoing maintenance is required for detention basins to ensure that they continue to operate to the design performance standards. Detailed specifications and frequencies should be provided for the required maintenance, along with annual costs and any potential machinery necessary to undertake maintenance. Different designs will have different operational and maintenance requirements (to be confirmed at the detailed design stage). This will need to be designed to cater for the extreme storm event volumes up to and including the 100yr return period event with 45% allowance for climate change. The requirements set out in **Table 2** below refer to the recommendations in The SuDS Manual for maintenance of attenuation basins.

Table 2: Recommended Maintenance Routines for Detention Basins (CIRIA, 2015)

Regular Maintenance	Frequency
Remove litter and debris	Monthly
Manage vegetation and remove nuisance plants (inc. cutting grass for spillways/access routes)	Monthly (during growing season), or as required
Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)
Inspect inlets, outlets and overflows for blockages, and clear as required	Monthly
Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly
Inspect inlets and facility surface for silt accumulation: establish appropriate silt removal frequencies	Monthly (for first year), then annually/as required
Check any penstocks and other mechanical devices	Annually
Tidy all dead growth before start of growing season	Annually
Remove sediment from inlets, outlets and forebay	Annually (or as required)
Manage wetland plants in outlet pool – where provided	Annually
Occasional Maintenance	Frequency
Reseed areas of poor vegetation growth	As required

Prune and trim any trees and remove cuttings	Every 2 years, or as required
Remove sediment from inlets, outlets, forebay and main basin where required	Every 5 years, or as required (likely to be minimal where effective upstream source control is provided)
Remedial Actions	Frequency
Repair erosion or other damage by reseeding or re-turfing	As required
Realignment of rip-rap	As required
Repair/rehabilitation of inlets, outlets, and overflows	As required
Relevel uneven surfaces and reinstate design levels	As required

POND

Maintenance of ponds is relatively straightforward for the appointed landscaping contractor post-development. It is noted that the maintenance requirements are not much more onerous than that required for standard public open space. The requirements set out in **Table 3** below refer to the recommendations in The SuDS Manual for maintenance of ponds.

Table 3: Recommended Maintenance Routines for Ponds (CIRIA, 2015)

Regular Maintenance	Frequency
Remove litter and debris	Monthly (or as required)
Cut the grass – public areas	Monthly (during growing season)
Cut the meadow grass	Half yearly (spring, before nesting season, and autumn)
Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
Inspect inlets, outlets, banksides, structures, pipework etc for evidence of blockage and/or physical damage	Monthly
Inspect water body for signs of poor water quality	Monthly (May – October)

Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once some build-up has occurred, to inform management and disposal options	Half yearly
Check any mechanical devices, e.g. penstocks	Half yearly
Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above pond base; include max 25% of pond surface)	Annually
Remove 25% of bank vegetation from water's edge to a minimum of 1m above water level	Annually
Tidy all dead growth (scrub clearance) before start of growing season (note: tree maintenance is usually part of overall landscape management contract)	Annually
Remove sediment from any forebay	Every 1 – 5 years, or as required
Occasional Maintenance	Frequency
Remove sediment from the main body of big ponds when pool volume is reduced by 20%	With effective pre-treatment, this will only be required rarely, e.g. every 25-50 years
Remedial Actions	Frequency
Repair erosion or other damage	As required
Replant, where necessary	As required
Aerate pond when signs of eutrophication are detected	As required
Realign rip-rap or repair other damage	As required
Repair / rehabilitate inlets, outlets and overflows	As required

HYDROBRAKE FLOW CONTROL DEVICES

Generally, Hydrobrake devices require little maintenance and have a design life greater than that of the upstream drainage infrastructure. Should the device get blocked, then the main chamber would flood and depending on the specific Hydrobrake product being installed, most come equipped with by-pass doors (or similar) to allow the device to be accessed and drained manually to provide appropriate access for maintenance to be undertaken. In terms of management, the typical routines for maintenance are for inlets, outlets, and overflows to be inspected regularly to prevent blockages

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and be cleared where needed. Sediment can be removed from inlets and outlets when required and any inlets and outlets can be repaired if damage is picked up in the regular inspections.

I trust you will find the above and attached are of assistance. If you however have any queries or require further information, please do not hesitate to contact me.

Yours sincerely,



Hannah Buchanan BSc (Hons) MSc GradCIWEM

Flood Risk Analyst

BETTS HYDRO

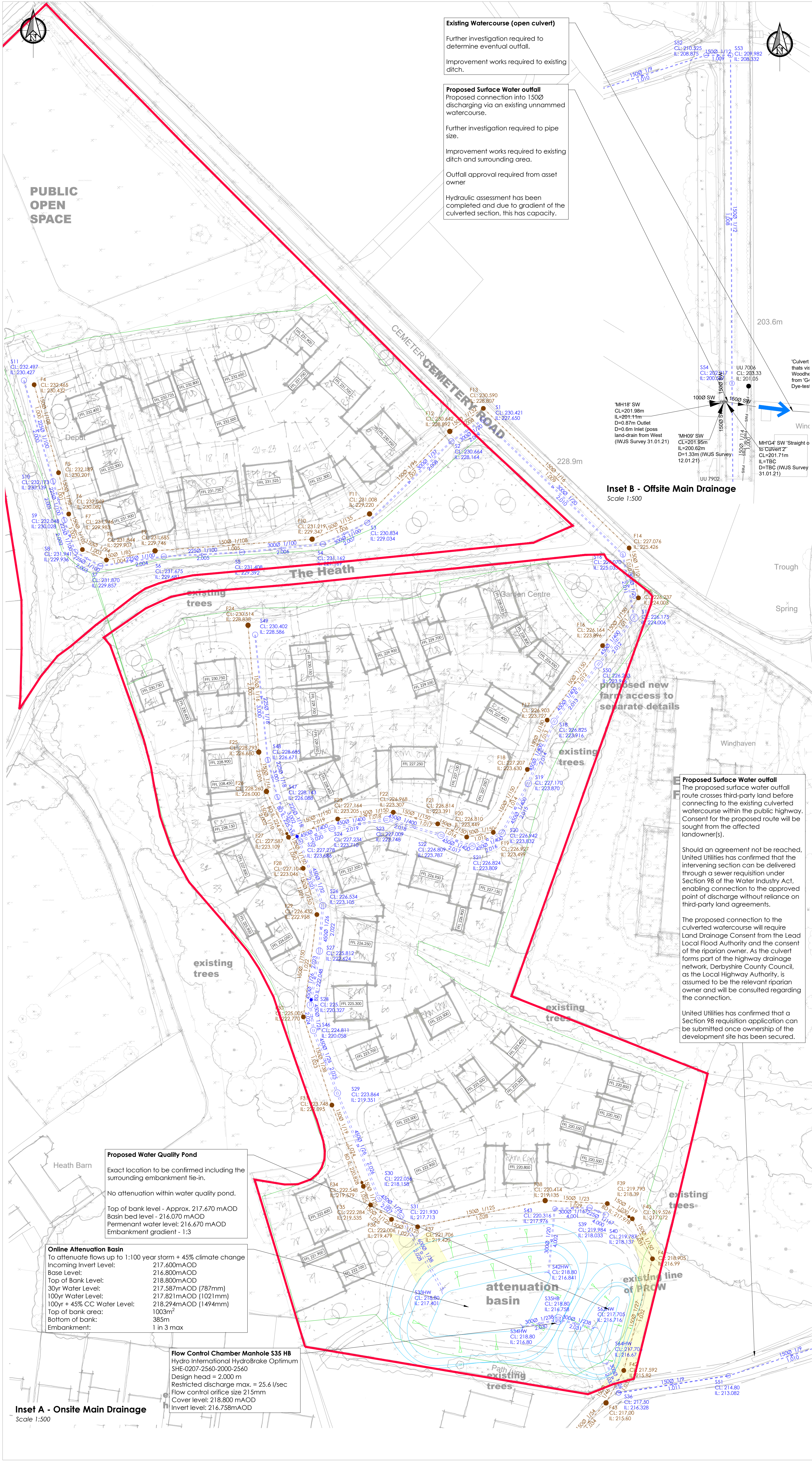
APPENDED

Appendix A – Preliminary Drainage Layout (Betts Associates)

APPENDIX A – PRELIMINARY DRAINAGE LAYOUT (BETTS ASSOCIATES)

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Existing Watercourse (open culvert)

Further investigation required to determine eventual outfall.

Improvement works required to existing ditch.

Proposed Surface Water outfall

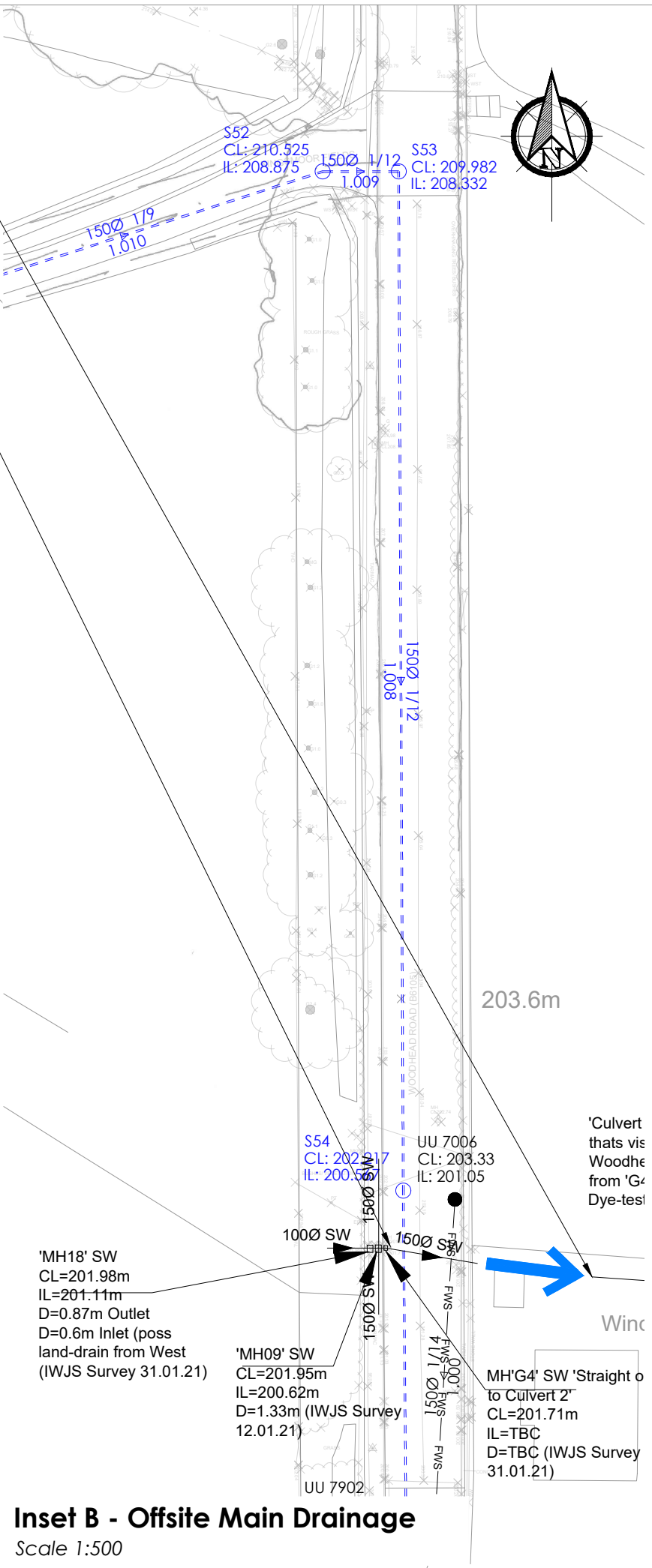
Proposed connection into 1500 discharging via an existing unarmmed watercourse.

Further investigation required to pipe size.

Improvement works required to existing ditch and surrounding area.

Outfall approval required from asset owner

Hydraulic assessment has been completed and due to gradient of the culverted section, this has capacity.



- Notes
- Planning layout provided by 'ldp', ref Framework Sketch A, May 2025
 - Topographical survey provided by 'Survey Operations', ref 'Topographical Land Survey at - Wimberry Hill Farm', Drawing number '24G023/001', Dated July 24.
 - Dragout chambers and lateral drains are not shown
 - The use of any other flow control devices not associated with the hydro international hydro-brake optimum reference provided may constitute a flood risk
 - Manhole sizing is indicative and subject to review; systems being offered for adoption need to meet the benching requirements of the adoptive authority
 - Road levels are preliminary and are subject to detailed design
 - All drainage is subject to detailed design
 - Due to the accuracy of the planning layout, the impermeable areas have been pro-rated into each length of storage pipe.
 - CV values of 1.0 for both summer and winter have been used, as well as a 10% additional area for urban creep.
 - Where levels are applicable and appropriate, impermeably lined permeable surfaces are too be used on the private and shared driveways.
- Development Boundary
- Proposed adaptable surface water sewer and manhole
- Proposed adaptable flow control manhole and large diameter stormwater storage sewer
- Proposed adaptable foul water sewer and manhole
- Existing Watercourse and direction of flow
- Proposed sewer easement
- Existing ground levels at development boundary
- Existing Public sewer COMB
- Existing Public sewer FWS

Proposed Surface Water outfall

The proposed surface water outfall route crosses third-party land before connecting to the existing culverted watercourse within the public highway. Consent for the proposed route will be sought from the affected landowner(s).

Should an agreement not be reached, United Utilities has confirmed that the intervening section can be delivered through a sewer requisition under Section 98 of the Water Industry Act, enabling connection to the approved point of discharge without reliance on third-party land agreements.

The proposed connection to the culverted watercourse will require Land Drainage Consent from the Lead Local Flood Authority and the consent of the riparian owner. As the culvert forms part of the highway drainage network, Derbyshire County Council, as the Local Highway Authority, is assumed to be the relevant riparian owner and will be consulted regarding the connection.

United Utilities has confirmed that a Section 98 requisition application can be submitted once ownership of the development site has been secured.

Proposed Water Quality Pond

Exact location to be confirmed including the surrounding embankment tie-in.

No attenuation within water quality pond.

Top of bank level - Approx. 217.670 mAOB
Basin bed level - 216.070 mAOB
Permanent water level: 216.670 mAOB
Embankment gradient - 1:3

Online Attenuation Basin

To attenuate flows up to 1:100 year storm + 45% climate change

Incoming Invert Level: 217.600mAOB
Base Level: 216.800mAOB
Top of Bank Level: 218.800mAOB
30yr Water Level: 217.587mAOB (787mm)
100yr Water Level: 217.821mAOB (1021mm)
100yr + 45% CC Water Level: 218.294mAOB (1494mm)
Top of bank area: 1003m²
Bottom of bank: 385m
Embankment: 1 in 3 max

Flow Control Chamber Manhole S35 HB

Hydro International HydroBrake Optimum SHE-0207-2560-2000-2560
Design head = 2.000 m
Restricted discharge max. = 25.6 l/sec
Flow control orifice size 215mm
Cover level: 218.800 mAOB
Invert level: 216.758mAOB

Inset A - Onsite Main Drainage

Scale 1:500

P07 23.06.26	Basin deepened to 2m. Water quality pond added to add an additional treatment source	NR
P06 17.04.26	Outfall note added	NR
P05 16.06.26	Amended to suit new planning layout	WM
P04 19.02.26	Notes added regarding permeable surfaces	NR
P03 13.02.26	Outfall location amended	NR
P02 20.06.25	Amended to suit planning layout change	NR
P01 03.06.25	Preliminary issue for review	NR

Mark	Date	Details	By	CHK
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Revision History				
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Drawing originator:



Client:



Project title:

Wimberry Hill Farm
Glossop

Drawing title:

Preliminary Drainage Layout

Scale: 1:500 for the original size of A1

Drawn by: NR | Checked by: | Passed by: | Date: May 25

Drawing status:

TECHNICAL DUE DILIGENCE

Job No:	Drawing No:	Project	Origin	Volume	Level	Type	Discp.	Number	Revision:
BAR31	WHF	BET	ZZ	XX	DR	C	0101	P07	

Do not scale this drawing

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enquiries@betts-associates.co.uk

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