

JD/001
8 December 2023

***DRAINAGE STRATEGY FOR 53 NEW HOMES – Parcel W
Silverhill Farm, Off Broad Lane, Kingsway, Rochdale***

Drainage Strategy

1.0 The site comprises of grassland with boundary trees with a derelict farm offsite to the north west area known as Silverhill Farm. This report considers just the new 53 homes to be constructed by Barratt and David Wilson Homes North West. No significant changes have occurred throughout the mapped history of the site. A Topographical survey of the existing site has been undertaken and included as Appendix 1. There is an existing Surface Water sewer varying in size from 225mm at the south eastern corner to 525mm diameter at the north east corner and runs approximately 4m parallel the eastern boundary as shown on United Utilities records included in Appendix 2.

1.1 The Phase 1 and 2 Geo-Environmental Assessment by BWB dated December 2019 concluded that the site consisted of very soft organic Topsoil over predominately cohesive Hummocky Glacial Deposits and Made Ground. Groundwater is a seasonal issue with excavations requiring dewatering in autumn through to spring. Several trial pits were terminated early due to water ingress. A soakway drainage solution and the use of permeable paving is considered not viable and that an attenuated tank solution should be considered instead. A recent site visit in November had the eastern part of the development waterlogged.

Storm Water Storage Requirements

2.0 Whilst the original flood Risk Assessment by Banners Gate dated December 2019 suggested an unrestricted discharge. Further studies by BWB consulting in November 2021 for all of the Kingsway Park parcels showed that overtopping occurred in the downstream weir wall of Catchment 1A/1B when the whole catchment was built out. Further calculations by Banners Gate in July 2022 and discussions between David Grey (BWB), Robert Brenton (UU plc) and Stephen McCann (LLFA) concluded that amendments to the pass forward flows and also changes to the downstream restriction (an orifice plate) would be sufficient amelioration. Pass forward flows from plot W in the calculations for the full drainage masterplan had flows of around 200 l/sec.

2.1 Following Consultation Response on behalf of Head of Highways and Engineering dated 15th September flows are to be limited to the 1 in 100 year return period storm event flows equating to a further reduction to 178.5 l/sec.

2.2 Site storage requirements have been based on the pass forward flows of 178.5 litres per second for the 1 in 100 year plus 45%. Cellular storage tanks with storage volume of 73cum will be used for storms higher than the 1 in 30 year event up to the 1 in 100 return period + 45% climate change allowance. Calculations can be made available if required.

Modelling of Proposed Drainage Systems

2.3 Full drainage proposals are shown on Drawing D100 Rev A in appendix 3.

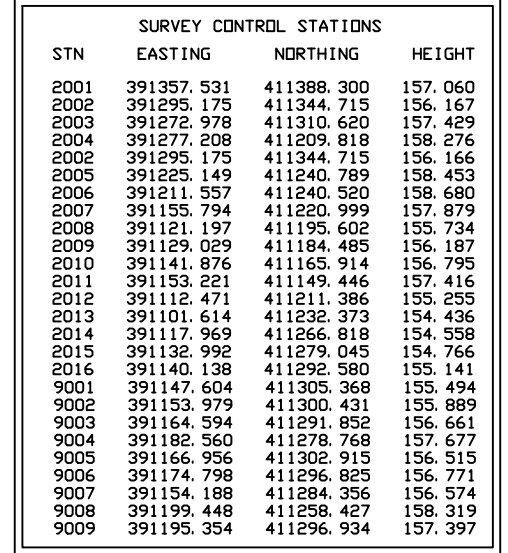
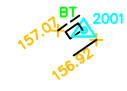
Maintenance

2.4 The cellular tanks are located within an open space area and are readily accessible. Requirements for ongoing maintenance of the cellular tanks should will part of an Operation and Maintenance manual for site and undertaken by the same management company as for the Public open spaces. The manufacturer specific maintenance regime will be added to the document.

Foul Water Drainage Strategy

2.0 An existing 225mm diameter foul network exists to the north east of the development within James Kearns Avenue. It is at sufficient depth to drain to by gravity and has capacity for the 53 homes. Exact connection details to be agreed with United Utilities as part of a Section 104 Agreement approval.

Appendix 1 Topographical Survey



Disclaimer
Man Entry to sewers has not been undertaken. Depths, Pipesizes etc are measured from the ground. All sewers and inverts to be checked prior to any works commencing on site. Geomatic Surveys Limited are not responsible for manholes, services, information not surveyed which may have an impact on site development.
Boundaries shown are physical and may not represent legally conveyed ownership

Sheet 1

 **Geomatics**
Surveys Ltd

LAND SURVEYORS AND CONSULTING ENGINEERS
Bank House, The paddock
Wilmslow Road
Handforth
Cheshire
SK9 3HQ
Tel/Fax – 01625 521405
Email: info@geomaticsurveys.co.uk
Web: www.geomaticsurveys.co.uk

Project Title

Drawing Title

TOPOGRAPHICAL SURVEY

Drawn MRW	Checked IRH	Surveyed Date 22/06/2018
Date 25/06/2018	Scale 1:500 @ A1	Sheet No. SHEET 1 OF 1
Dwg. No. 02043/01		Rev B

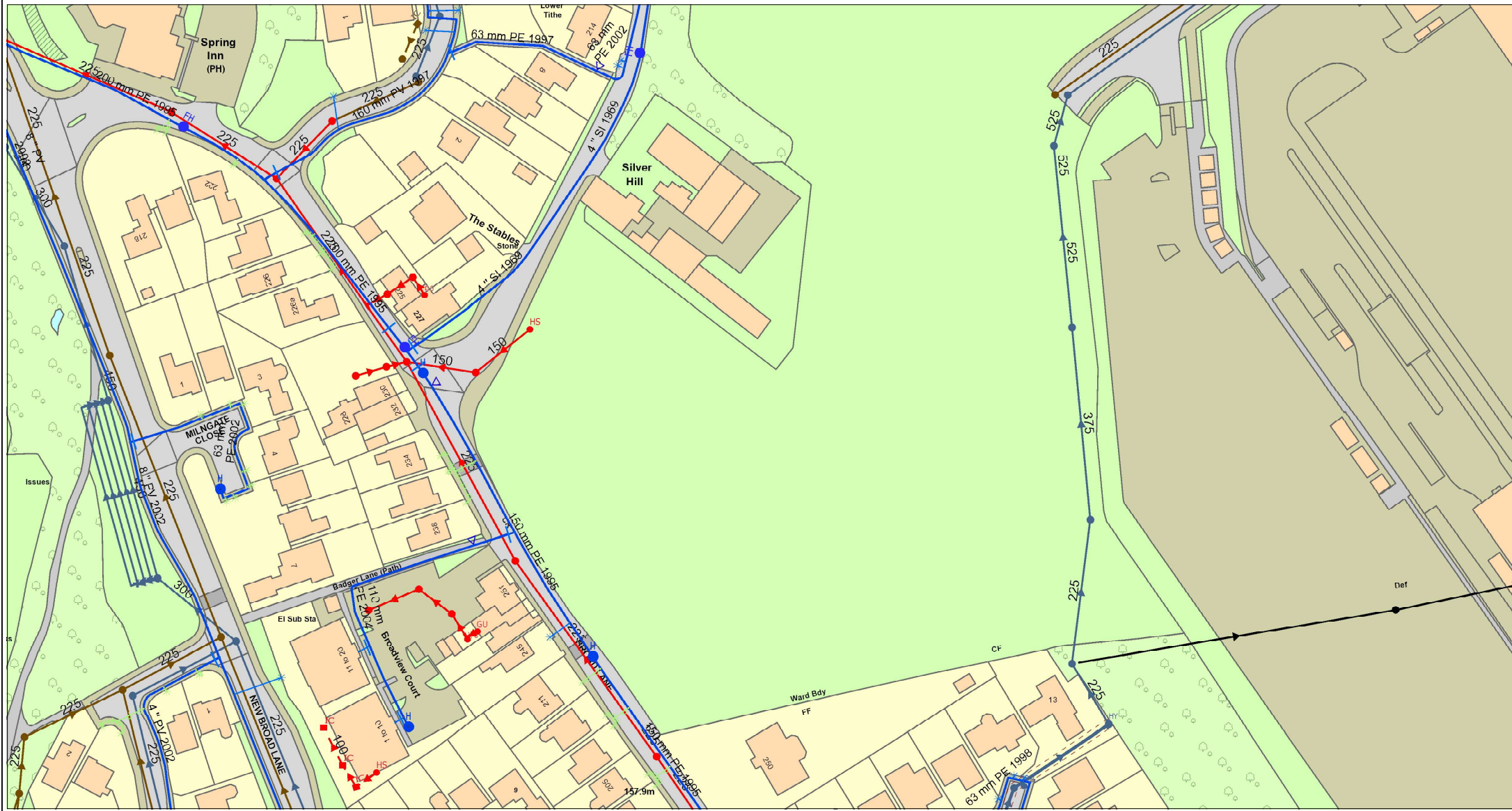
Appendix 2 United Utilities Sewer Records

United Utilities Maps for SafeDig

Centre : X : 391192 Y : 411237

Date : 10/10/2019 15:31:00

Scale Approx : 1000



Extract from maps of United Utilities' Underground Assets

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. The actual positions may be different from those shown on the plan and private service pipes may be shown by a blue broken line. United Utilities Water will not accept liability for any damage caused by the actual position being different from those shown.

Crown copyright and database rights 2019. Ordnance Survey 100022432 This plan is based on the Ordnance Survey Map with the sanction of the Controller of H.M. Stationary Office. Crown and United Utilities Water copyrights are reserved. Unauthorised reproduction will infringe these copyrights.

Appendix 3 Drawing D100 Rev A



GENERAL

- All adoptable sewers and associated works are to comply fully with Design and Construction Guidance May 2021 and United Utilities 'Developer Services Construction Details' where necessary.
- All highway works to be to adoptable standards and to comply fully with LA's highway specification.
- All works are to comply fully with the NHBC (2016) standards and part H of the Building Regulations.
- All existing invert levels to be checked by the Contractor at the start of works and any discrepancies notified to Barratt & David Wilson Homes. All levels are based on topographical survey information provided by Land Surveyors.
- All materials to bear the relevant B.S.Kitemark and comply fully with the specifications. All concrete & concrete products must use Sulphate resistant cement (unless the site investigation report proves that sulphate attack from soils and groundwater will not occur).
- All opening notices etc. as required under highways acts etc. are to be obtained prior to commencement of works. It is the Contractors responsibility to ensure that all works are to be inspected by LA, NHBC and United Utilities as applicable.
- All roadmarkings and signage to be in accordance with the Traffic Signs Regulations and General Directions 2016.
- CBR testing to be organised by the contractor and to be taken at formation level. The results to be issued to David Wilson Homes. Road construction capping layer designs to be to HW3/06.

CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 (CDM)

In line with the above regulations we are obliged to inform the Contractor of the risks that may be encountered in the construction of these works. All design work has been carried out with Health and Safety aspects given full consideration. Wherever possible risks have been eliminated from the design, however due to the very nature of this type of work it is not possible to remove all the risks from the design. We would also respectfully remind the Contractor of his obligations to take all reasonable steps in ensuring that they adhere to their own health and safety policy. They should also provide satisfactory responses at tender stage as to the manner in which they will deal with the elements of risk involved in this type of work and in particular those highlighted by David Wilson Homes below:-

- Support / treatment for ALL excavation work.
- Guarding to edges of excavations to prevent people, materials and vehicles falling into excavation.
- Guarding of excavations outside working hours to prevent unauthorised access.
- Undermining to adjacent roads or structures.
- Confined space operations.
- Dealing with existing services.
- Traffic management on existing highways.
- Procedure to be followed in event of accident or emergency.
- Method of working where contaminated ground is present on site.
- Confirmation will be required that all operatives are adequately trained, copies of relevant training certificates to be supplied.

The above list is by no means exhaustive but it does highlight operations that present a risk to contractors and the general public. For clarification contact Barratt & David Wilson Homes.

Rev	Amendment	Date
A	Revised to suit Planning Layout Rev R.	Nov 2023

Barratt & David Wilson Homes North West
2nd Floor, 303 Bridgewater Place
Birchwood Park, Warrington
Cheshire WA3 6XF
Telephone 01925 846600



DAVID WILSON HOMES
WHERE QUALITY LIVES



Contract: Silverhill Farm Kingsway Rochdale		
Drawing: Road and Sewer Plan		
Status: Preliminary		
Date: Oct 23	Scale: A1 @ 1:500	Drawn: JD
Drg.No: Hxxxx / D100	Rev: A	