

Notes

1. Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
2. This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
3. All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the engineer immediately.
5. The Ordnance Survey material used in this map has been used with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office Crown copyright. Licence No 100022432, (2022).

Key

- 2D Inflow Location (QT)
- 1D Downstream Boundary (HT)
- 2D Downstream Boundary (HQ)
- 2D Thurlaston Brook Channel
- 1D Thurlaston Brook Channel
- 1D Hydraulic Structures
- Blockage Locations
- 1D-2D Boundary (HX)
- 1D Domain
- 2D Domain
- Blueline Site Ownership Boundar
- Redline Application Site Boundar

The entire hydrograph on the Thurlaston Brook has been applied as a lumped inflow at the upstream extent of the 2D model domain. No watercourse survey data was available at this location and subsequently invert levels and bank crest levels along the length of the Thurlaston Brook prior to the site have been informed using 1m resolution EA LIDAR data.

Flows have subsequently been routed through the channel in the 2D domain (defined using a z-shape) towards the 1D domain which begins at the upstream location of the site where watercourse survey data then becomes available. Should 2D water levels exceed the bank crest levels, flows would be able to spill into the wider floodplain before reaching the 1D domain.

A sensitivity test has been conducted whereby a structure upstream of the site has been represented as 100% blocked to demonstrate whether this would impact the proposed development. This has been achieved by raising cells within the 2D domain channel to the height of the access road level (as defined by the embankment heights).

Due to issues surrounding access to the watercourse, it was not possible to survey the structure at this location. Given that the structure is located downstream of the study site, it has been excluded from the design model build.

A sensitivity test has been undertaken at this location whereby a 6.6m long box culvert has been added as 100% blocked to determine whether such a scenario would have upstream impacts at the site. This is identified as Blockage Location 3.

Two 750mm diameter pipes have been surveyed beneath Brascote Lane which have been represented within the 1D domain of the hydraulic model.

As part of the sensitivity testing, this strucure was represented as 100% blocked. This is identified as Blockage Location 2.

The 1D domain begins at the upstream extent of the site boundary where watercourse survey data becomes available. Flows from the 2D domain are transferred to the 1D domain via HX boundaries.

Blockage Location 1. A sensitivity test has been conducted whereby the channel has been raised to bank top level (through the use of a z-shape) to represent a 100% blocked scenario.

Thurlaston Brook upstream of the site represented in the 2D domain only.

A HT boundary has been applied within the 1D domain at the downstream limit of the model. The water level has been set to bank full for the duration of the model simulation.

Within the 2D domain, HQ boundaries have been used based off the slope of the topography in the floodplain.

P02	22.02.22	Updated Redline Application Boundary	MB	RG
P01	08.09.21	Preliminary Issue	MB	RG
Rev	Date	Details of issue / revision	Drw	Rev

Issues & Revisions

BWB

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Client
Richborough Estates Ltd

Project Title
Brascote Lane, Newbold Verdon

Drawing Title
Hydraulic Model Schematic

Drawn:	M. Bramani	Reviewed:	R. Green
BWB Ref:	BMW 3175	Date:	22/02/22
		Scale@A1:	1:2,500

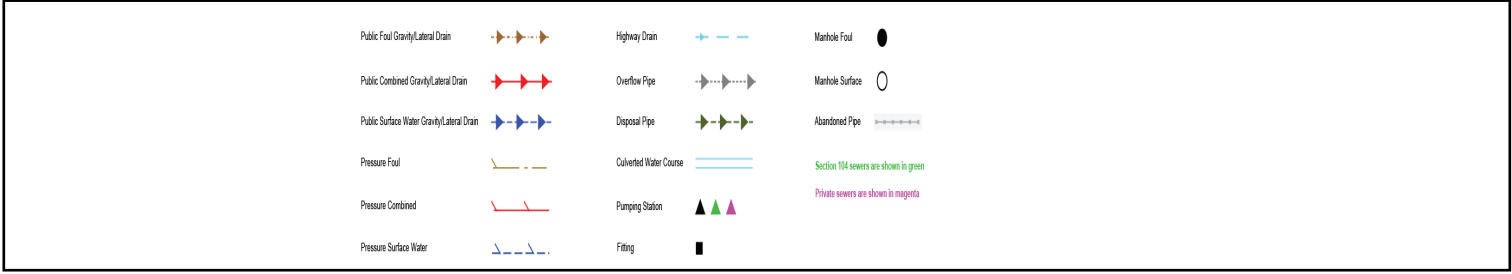
Drawing Status
FINAL

Project - Originator - Zone - Level - Type - Role - Number	Status	Rev
BLN-BWB-ZZ-XX-SK-YE-0001	S2	P02



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Appendix 4: Severn Trent Sewer Records



GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on: **0800 753 4444 (24 hours)**

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991(a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt), mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "STW Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.
8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.
9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.
10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.
11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.
12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.
13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,
14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.
16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.
17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014
18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.
19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main of other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.

