

Non-Adopted Drainage Notes

1. All new private surface water and foul drainage shall be constructed and tested in accordance with BS EN 752, Building Regulations Approved Document Part H' and NHBC Chapter 5.3, as appropriate.
2. Pipes shall be 100 mm diameter, flexibly jointed manufactured from vitrified clay or uPVC, and constructed to a minimum fall of 1:80 (min. 1:100) or 1:40 (no toilet), unless noted otherwise.
3. Sewers and drains of different diameters to be laid softfall to toilet. All non straight junctions between pipes to be formed using preformed connections (curved square or oblique junctions) laid in the direction of the flow.
3. Pipe bedding to class 'S' bedding (100 mm granular bed and surround).
4. Where cover to surface of pipe is less than 900mm in trafficked private areas (600mm, untrafficked), the following shall apply:-
 - a) Vitrified clay pipes - provide a 100mm min. thick concrete bed and surround (instead of class bedding) and a 13 mm thick compressible filler at each joint.
 - b) uPVC pipes - provide a concrete bridge (in addition to class 'S' bedding) in accordance with appendix A15, Building Regulations Part H'.
5. Unless noted otherwise concrete indicated in the construction of drainage infrastructure (pipe bedding, bridging, manholes) etc shall be standardised prescribed concrete ST2 and is to conform to BS EN 206-1 and BS 8500-2. The maximum aggregate size shall be 20mm.
6. Pipe runs adjacent to the proposed foundations are to be installed in accordance with appendix A15, Building Regulations Part H'.
7. Excavations for manholes, pipe runs etc. located within a 45 degree load distribution spray from any adjoining existing foundations, are to be adequately supported for the duration of the works and pipe runs protected as note 6 above.
8. Foundations adjacent to pipe runs or manholes are to have their formation level set above the invert level, no higher than the equivalent of the horizontal distance between the pipe/excavation trench and the foundation, minus 500mm.
9. Where excavations for pipe runs are parallel and in close proximity to each other and/or other service trenches, the Contractor shall ensure that adequate safety measures, including temporary shoring, are provided in line with current Health & Safety legislation and good practice. Particular attention is to be paid to adjacent trenches of differing invert levels.
10. All existing drainage found on site during the works shall be investigated, its operational status confirmed, and the following applied:-
 - a) Inoperative drainage shall be cut back and pipe runs filled with concrete grout.
 - b) 'Live' drainage shall be temporarily re-routed to allow the new drainage to be constructed, to the reuse of any existing drainage its condition shall be verified and its suitability for reuse confirmed.
11. All new private shallow surface water and foul drain inspection chambers and rodding eyes shown without cover levels (CL) shall be assumed to be at external ground level.

Southern Water approval under a S106 Agreement, if required, must be obtained to utilise the existing private foul water lateral connection into the existing foul water adopted drainage network downstream. New inspection chamber on line of the existing pipe work. All works to be inspected as matters progress and completed to the approval of the Local Building and Southern Water Inspectors.

The proposals as shown are all subject to the prior written approval of the Local Planning Department.

Surface and Foul Water Drainage Notes

BEAL Consulting Engineers Ltd have reviewed the information available associated with regard to the anticipated ground conditions.

The surface water drainage proposals indicated are to be based on an infiltration rate of 3.5×10^{-6} m/s. The surface water proposals based on this infiltration rate have been sized to accommodate sufficient attenuation storage for a 1:100 year storm event + 40% with no on or offsite flooding. Refer to MD Calculations.

The permeable block paving, which also includes an Inbitex geo-textile, in conjunction with its attenuation storage beneath will slow and treat the surface water which passes through it. The catch pits provided will collect any roof debris/leaf material and prevent it from entering the attenuation storage.

Future maintenance of the private drainage elements will be undertaken by the property owners. please refer to the tables on this drawing for further details.

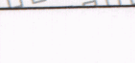
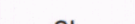
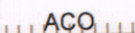
All works to the existing foul water sewer will be agreed with The Building Inspector prior to commencement of the works and inspected as required.

NOTES:

1. Do not scale from this drawing. This drawing shall be read in conjunction with all other relevant Architect's and Engineer's drawings.
2. Any discrepancies, ambiguities, or anomalies in the information provided on this or any of the engineering drawings package must be reported prior to work proceeding.
3. All accommodation work deemed necessary to facilitate a satisfactory link between the new works and the existing to be undertaken by the developer.
4. It is the contractor's responsibility to locate all existing services and verify their level & location prior to commencing any works. Should they be affected by the works then the respective structural undertaker should be contacted and any special protection requirements agreed.
5. All highway works shall be undertaken in accordance with Hampshire County Council Highway Design Guide and Specification and strictly in accordance with the 'Specification for Highway Works'. All drainage works shall be undertaken in accordance with 'Sewers for Adoption 7th Edition', and as stipulated in the Interim Addendum. All works to be supervised/inspected as required by the relevant Inspector.
6. All works must comply with current Health and Safety guidance & standards. All temporary signing to comply with Traffic Signs Manual - Chapter 8.
7. All products are to be installed and maintained strictly in accordance with manufacturer's recommendations & guidelines.

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Surface Water Drainage Legend

- | | |
|---|--|
|  | New private surface water drainage (min gradient@1:80)
up to 600mm deep |
|  | New private shallow surface water inspection chamber (typ. 300mm dia.) up to 1200mm deep |
|  | New private shallow surface water inspection chamber (typ. 450mm dia.) up to 1200mm deep |
|  | New private surface water non-entry inspection chamber (typ. 450mm dia.) up to 3000mm deep |
|  | New private shallow surface water catchpit chamber (typ. 450mm dia.) up to 1200mm deep |
|  | New private surface water non-entry catchpit chamber (typ. 450mm dia.) up to 3000mm deep |
|  | New private rain water down pipe with rodding access point |
|  | New private surface water road side |
|  | Extent of permeable paving with sub-base attenuation (min. 0.5m deep), type 400 (min 30% voids). Final depth & proposals to be confirmed following demotion. Ensure that soil strata in the vicinity of the driveway is confirmed and, if appropriate, once CBR & high level infiltration testing has been completed. |
|  | Wavin Aquaseal CorePlus storm water soakaway storage units (each 1.0x0.5x0.4), (or similar approved), installed in accordance with manufacturer's instructions (see also construction details) and located a maximum of 5m from any building foundations. |
|  | Slo slot drain, Aco Hexadrain brickslot drainage system. |
|  | Aco Heavy Duty Channel |

Foul Water Drainage Legend

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| | New private foul drain |
| | New private shallow foul inspection chamber (typ. 225mm dia.) up to 600mm deep |
| | New private shallow foul water inspection chamber (typ. 450mm dia.) up to 1200mm deep |
| | New 'SIA' 7° adoptable shallow foul water inspection Chamber Detail - Type 3 (Rigid Material Detail) Refer to BEAL Drawing 456:004 for further details. All works to be agreed on site and inspected by The Building Inspector. |
| | New 'SIA' 7° adoptable shallow foul water inspection Chamber Detail - Type 4 (Rigid Material Detail) Refer to BEAL Drawing 456:004 for further details. All works to be agreed on site and inspected by The Building Inspector. |
| | New private soil and vent pipe |
| | New private sink waste connection into trapped gully |
| | New floor socket connection |
| | New trapped gully |

Existing Drainage Legend

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| | Existing foul water manhole |
| | Existing foul water drain |
| | Existing foul water drain abandoned |

Previous Pavement Operation and Maintenance Requirements		
Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Brushing and vacuuming.	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging or manufacturers' recommendations.
Occasional Maintenance	Stabilise and mow contributing and adjacent areas.	As required.
	Removal of weed.	As required.
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or hazard to users.	As required.
	Rehabilitation of surface and upper sub-structure.	As required (if infiltration performance is reduced as a result of significant clogging).
Monitoring	Initial inspection.	Monthly for 3 months after installation.
	Inspect for evidence of poor operation and/or weed growth. If required take remedial action	3-monthly, 4th after large storms.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers.	Annually.

Soakaway Operation and Maintenance Requirements		
Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove sediment and debris from pre-treatment devices and floor of inspection tube or chamber.	Annually.
	Cleaning of gutters and any filters on downpipes.	Annually.
	Trimming any roots that may be causing blockages.	Annually (or as required).
Occasional Maintenance	-	-
Remedial Actions	Reconstruct soakaway and/or replace or clean void fill, if performance deteriorates or failure occurs.	As required.
	Replacement of clogged geotextile.	As required.
Monitoring	Inspect silt traps and note rate of sediment accumulation.	Monthly in the first year and then annually.
	Check soakaway to ensure emptying is occurring.	Annually.

PRELIMINARY

Rev:	Date:	Description:	
Client:			
Project:			
Proposed Replacement House at Little Foxes, Rose Hill, Waterloooville			
Drawing Title:		Drainage Layout	
		HAVANT BOROUGH COUNCIL 03 DEC 2019	
 BEAL CONSULTING ENGINEERS		Haddenham Business Centre, Chiltern House, Thame Road, Haddenham, Bucks, HP17 8BY. 01844 396233  www.beal-uk.com	
Designed:	Drawn:	Checked:	
SH	CAF	----	
Scale:	Date:	Approved:	
1:100 @ A1	Nov 2019	----	
Drawing Number:		Revision:	
456:002			