

DRAINAGE NOTES

- All adoptable drainage works to be carried out in accordance with Sewers for Adoption 7th Edition.
- Proposed drainage connections to the existing Thames Water sewers to be strictly in accordance with note 1 and carried out under S106 of the Water Industry Act 1991. S106 consent to connect to be obtained by others.
- The location of the existing surface water sewer within the site is taken from the utility survey by Pulse mapping, project ref: P161012-Elizabeth Road.
- EXS1 alignment and levels based on Thames Water records, location and IL to be confirmed prior to the commencement of drainage.
- A CCTV condition survey of the existing drainage network is to be undertaken, with the results reported to the design engineer.
- New connections are to be made with appropriate lengths of rocker pipes & couplings to Thames Water approval.
- Covers & frames to existing chambers to be adjusted to suit new levels.
- All manhole chamber covers to be installed parallel to final kerbs, edgings, paving joints or building lines as appropriate.
- This drawing details all below ground drainage up to finished floor level. For details of drainage above finished floor level, refer to Architects drawings.
- Soil and rain water pipe locations are indicative only, refer to Architects drawings for details.
- All rainwater downpipes to be provided with above ground roddable access points.
- All stack connections under buildings to be 100mmØ at minimum gradient of 1 in 40 unless otherwise noted.
- All RWP connections to be 100mm at minimum gradient of 1 in 100 unless otherwise noted.
- 100mmØ to 225mmØ pipework for adoption to be Vitrified Clay (VC) pipes, Kitemark certificate with flexible spigot and socket joints and shall comply with the requirements of BS EN 295 and BS 65 (Surface Water Only).
- 300mmØ and above pipework for adoption to be concrete, Kitemark certified with flexible spigot and socket joints and shall comply with the requirements of BS EN 1916 and BS 5911 Part 1.
- Private pipework may be either VC or thermoplastic structured wall sewer pipe and shall comply with WIS 4-35-01. Pipes shall be BSI Kitemarked, or have equivalent third part certification.
- All existing chambers, gullies, etc within the works which are NOT to be reused shall be broken down to below formation level and the remaining void back filled with lean concrete to formation level. No proposed works are to hinder the existing retained drainage network.
- The minimum depth of cover to the crown of gravity pipes without protection should be as follows:
 - Domestic gardens and pathways without any possibility of vehicular access - 0.6m
 - Domestic driveways and parking areas not subject to vehicle loading in excess of 7.5 tonnes - 0.9m
 - All access roads and other parking areas - 1.2m

PERMEABLE BLOCK PAVED DRIVEWAY

- | | |
|------------|---|
| 60mm | 200x100mm permeable block paving, Marshalls Tegula Priora, Colour, Burnt Ochre, laid in 45° herringbone pattern with 6mm clean open graded crushed rock bedding. |
| 50mm | 6mm clean open graded crushed rock. |
| 60mm | AC20 Dense Base 100/150 Rec to BS EN 13108 - 1:2006 with 100mmØ cores at 750mm centres, infilled with 6mm clean open graded crushed rock, no fines. |
| 275mm | Type 3 open graded crushed rock, reduced fines, to CL 803. |
| 1No. Layer | Marshalls M380 tanking membrane. Where drainage pipes penetrate the membrane a proprietary top hat arrangement, installed strictly in accordance with the manufacturers details, is to be used. |
| 425mm | Type 1 capping to CL 803. Capping depth in accordance with Table 1. |

PRIVATE/ADOPTABLE ASPHALT FOOTWAY CONSTRUCTION

- | | |
|------------|--|
| 20mm | AC6 Dense Surf 70/100 Rec to BS EN 13108 - 1:2006. |
| 55mm | AC20 Dense Bin 70/100 Rec to BS EN 13108 - 1:2006. |
| 150mm | Type 1 sub base to CL 803. |
| 1No. Layer | Terram 1000 geotextile membrane or similar. |

ASPHALT DRIVEWAY CONSTRUCTION

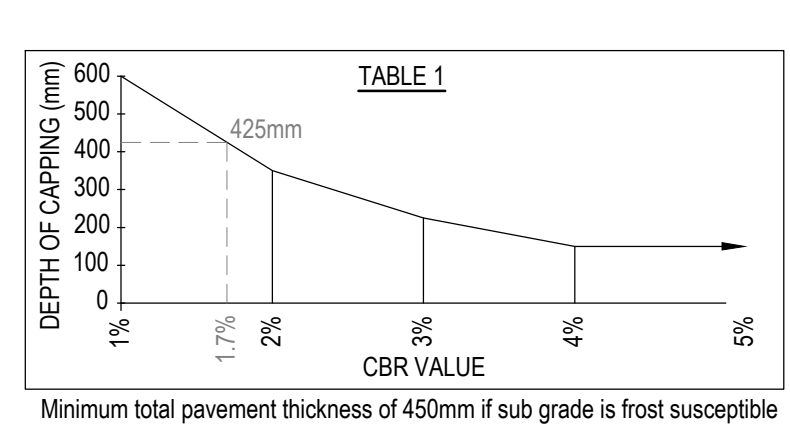
- | | |
|-------|--|
| 30mm | AC10 Close Surf 70/100 Rec to BS EN 13108 - 1:2006. |
| 60mm | AC20 Dense Bin 100/150 Rec to BS EN 13108 - 1:2006. |
| 150mm | Type 1 sub base to CL 803.* |
| 600mm | Capping material to meet the requirements of either 6F1 or 6F2 of Table 6.1 of the Specification for Highway Works, Series 600.* |

*Sub base and capping depths in accordance with Table 2.

1No. Layer Terram 1000 geotextile membrane or similar.

PATIO PAVING CONSTRUCTION

- | | |
|------------|---|
| 35mm | 600x600mm Concrete flag paviours, Marshalls Saxon Textured Garden Paving, colour buff, to Architects specification. |
| 150mm | Type 1 sub base to CL 803. |
| 1No. Layer | Terram 1000 geotextile membrane or similar. |



CBR %	Sub Base Thickness	
	Type 1	Capping
≤2	150	600
2<CBR≤5	150	350
5<CBR≤15	250	-
15<	150	-

Minimum total pavement thickness of 450mm if sub grade is frost susceptible

ENGINEERING NOTES

- Do not scale from this drawing.
- This drawing to be read in conjunction with all relevant documents and specifications.
- Any discrepancies found between information shown on this or any other drawing shall be reported to the Engineer immediately and prior to works commencing on site.
- Unless specifically noted otherwise, clauses and tables refer to The Specification for Highway Works (SPHW), Volume 1 of the Manual of Contract Documents for Highway Works.
- Relevant agreements and permissions to be obtained by others prior to commencement of works within the adoptable highway. All works within the adoptable highway shown on this plan are indicative only and subject to confirmation and approval from the local authority. The contractor shall arrange for the inspection of all adoptable works with the local authority.
- Refer to Architect's drawings for exact dimensions of buildings for setting out.
- Refer to Architect's drawings for details of all soft landscaping and unspecified hard landscaping areas.
- Refer to Architect's drawings for parking bay demarcation.
- Refer to drawings by others for details of all existing and proposed services. All existing services to be marked out on the ground prior to commencement of works.
- In situ CBR testing at a depth of 450-600mm by Land Science resulted in a CBR value of 1.7-2.9% on a site (Barrett Crescent) adjacent to Elizabeth Road. No SI has been undertaken at Elizabeth Road, therefore CBRs are assumed. The Contractor shall carry out CBR tests at formation level and report the results to the Engineer prior construction.
- The formation is to be thoroughly proof rolled and any soft spots removed and replaced with a minimum 600mm of well compacted Type 1 to CL 803.
- Proposed kerbs to comply with BS EN 1340.
- For engineering details refer to drawing CV8170566/1001.
- All capping materials should meet the requirement of either 6F1 or 6F2 of Table 6.1 of the Specification for Highway Works Series 600. Capping material shall only be permitted in non-porous sub-base areas, and a geotextile separation membrane to be used where at all interfaces between porous and non-porous sub-base materials.
- For frost susceptible sub-grades minimum pavement construction depth shall be 450mm.
- Block paving to be installed strictly in accordance with the manufacturers specification and guidance and BS 7533-3:2005 - Code of practice for laying precast concrete paving blocks and clay pavers for flexible pavements.
- Prior to laying block paving the surface of the laying course shall be treated with a granular residual herbicide containing Dichlobenil. After laying of the blocks granular herbicide shall be brushed into the joints. Application must be in accordance with the manufacturers recommendations and guidance.
- When the surface is not laid immediately after the binder course, a bond coat complying with standard C50B/3 is to be applied between each tarmac layer. Where the base and binder courses have been used for the running surface during construction, prior to the laying of subsequent tarmac layers, the surface is to be thoroughly cleaned and made good, and a bond coat is to be applied, uniformly without puddles, at a rate as specified by the manufacturer.
- All coated macadams must comply with BS EN 13108 and laid in accordance with this standard. Sand fines will not be permitted in coated macadams.
- Limestone aggregates will not be permitted in surface course material or binder course material which is to be trafficked.
- Gravel aggregates will not be permitted in bituminous materials.
- Perimeter of all excavations within hard surfaced areas that are to be retained, to be saw cut with a clean edge.
- Where retained heights at the boundary fence are less than 300mm concrete gravel boards to are to be used.
- The construction shown are suitable for traffic using the completed development. No allowance has been made for construction traffic or site haul routes. This contractor shall submit details of how the formation and pavement layers will be protected, during the works, in accordance with clause 616 & 617 of the Specification for Highway Works.
- Contractor to ensure garden area is prepared for landscaping in accordance with NHBC standard 9.2-S6.

Rev.	Description	Date	Chkd
C3	Minor amendments to drainage.	14/11/2017 CS	JH
C2	Amendments to drainage.	10/11/2017 CS	JH
C1	First issue for comment and review.	14/07/2017 CL	JH

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Client : Francis Construction Ltd

Project : Elizabeth Road, Wokingham

Title : Engineering and Drainage Layout

Project Engineer : J. Hanlon Scale : 1:100 @ A1

Project Director : B. Murray Date : July 2017

Status : CONSTRUCTION

Drawing No. CV8170566-1000

Rev C3

SOAKAWAY CONSTRUCTION PRECAUTIONS

Many soakaway failures result from actions carried out during the construction process.

All infiltration devices should be protected from contamination by silt, cement washings etc. during the construction period.

It is recommended that until all construction works have been completed within the contributory areas, the following actions are taken:

- Either
- A manhole (or manholes) upstream of the infiltration device is used as a silt trap by incorporating a geotextile membrane (Terram 1000 or similar). These manholes to be regularly inspected and cleaned.
 - The surface water drainage system is not connected to the infiltration device and surface water is temporarily disposed of by other means.

ALL WORKS WITHIN THE ADOPTED HIGHWAY TO BE FORMALLY AGREED WITH WOKINGHAM BOROUGH COUNCIL UNDER THE RELEVANT SECTION OF THE HIGHWAYS ACT 1980.

EXISTING SERVICES AFFECTED BY PROPOSED WORKS TO BE LOWERED OR PROTECTED AS NECESSARY. CONTRACTOR TO LIAISE WITH RELEVANT SERVICES COMPANY TO DETERMINE APPROPRIATE PROTECTIVE MEASURES.