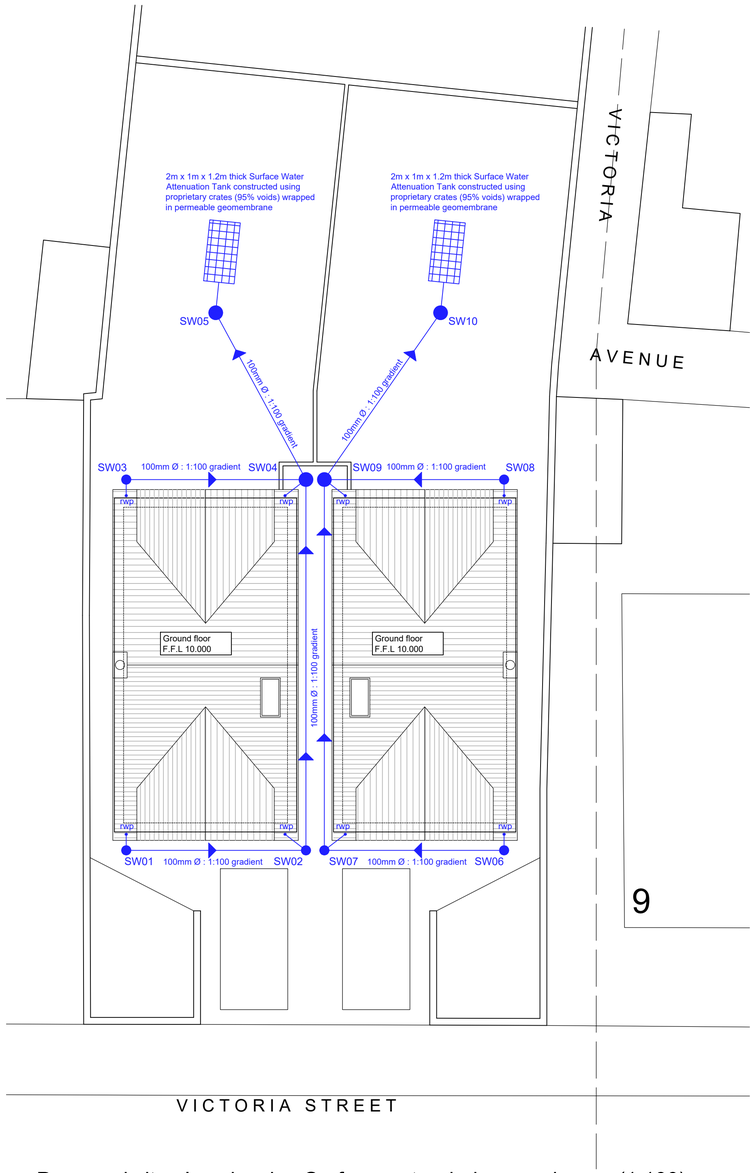
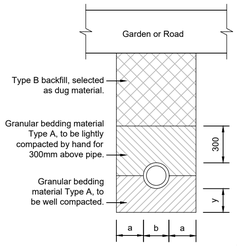


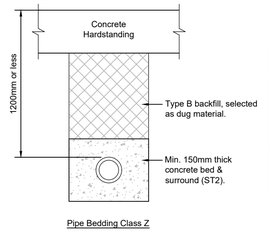
Proposed site plan showing Surface water drainage scheme, (1:100)

Surface Water Schedule				
Designation	Cover Level (m)	Invert Level (m)	Depth (m)	Type / Diameter
SW01	9.850	9.400	0.450	Type E / 300mm
SW02	9.850	9.340	0.510	Type E / 300mm
SW03	9.850	9.300	0.550	Type E / 300mm
SW04	9.850	9.220	0.630	Type D / 450mm
SW05	9.850	9.120	0.730	Type D / 450mm with silt trap in base
SOAKAWAY 1		9.100 (inlet)	Top of tank : 9.200	2.0m x 1.0m x 1.2m deep tank. (Tank invert 8.000)
SW06	9.850	9.400	0.450	Type E / 300mm
SW07	9.850	9.340	0.510	Type E / 300mm
SW08	9.850	9.300	0.550	Type E / 300mm
SW09	9.850	9.220	0.630	Type D / 450mm
SW10	9.850	9.120	0.730	Type D / 450mm with silt trap in base
SOAKAWAY 2		9.100 (inlet)	Top of tank: 9.200	2.0m x 1.0m x 1.2m deep tank. (Tank invert 8.000)

Typical Section through soakaway (1:20)



Pipe Bedding Class S



Pipe Bedding Class Z

Note:
a = b / 4 but with a minimum of 200mm around the barrels and a minimum of 150mm around the sockets.
y = b/6 with a minimum of 100mm under barrels and 50mm under sockets to a maximum of 400mm. In rock etc, y = b/4 with a minimum of 150mm under sockets to a maximum of 400mm.

Typical pipe bedding details, (1:10)

Pipe bedding material details

1) Material designated Type A shall consist of angular gravel or crushed rock graded in accordance with B.S. 882 : 1992, or air cooled blast furnace slag to B.S. 1047 : 1983, or sintered pulverised fuel ash to B.S. 3797 : 1990, selected according to pipe size as follows:-

Nominal Size of Pipes (mm)	Maximum particle size (mm)	Imported granular materials
100 - 125	10	10mm nominal single size
150 - 200	15	10 or 14mm nominal single size or 14mm to 5mm graded

2) Material designated Type B used under gardens and verges shall consist of uniform readily compactable material, free from tree roots, vegetable matter, building rubbish and frozen soil, and excluding clay lumps retained on a 75mm sieve and stones larger than 37mm. Bedding to be compacted in 225mm layers.

3) Material designated Type B used under roads and footpaths shall consist of granular material as used for carriageway sub-base construction.

In producing these drawings and associated calculations, Blackwell Structural Consultants have acted as a "Designer" under CDM Regulations 2015. The "Principal Designer" / "Contractor" must ensure that the responsibilities of these roles including, but not limited to; site HSE compliance, temporary works coordination, project phase planning, management and coordination are discharged.

Where it is to be modified, the contractor must expose the existing structure prior to construction and ensure that there is no damage or defect. For example, damaged masonry units must be replaced, weak or loose mortar repointed, rotten timbers replaced.

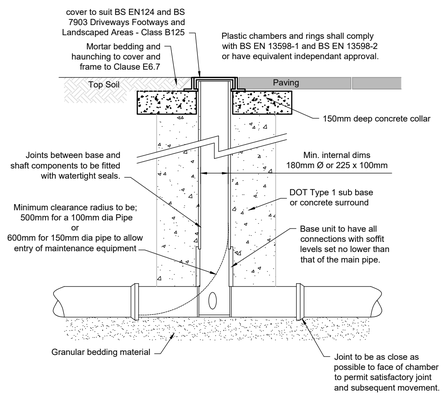
General Notes

1. This drawing is to be read in conjunction with all other relevant Engineers', Architect's and specialists' drawings and specifications.
2. All works to be carried out in accordance with current building regulations, HSE guidelines and relevant codes of practice.
3. Any grid lines, building lines, etc. are to be set out in accordance with the relevant Architect's plan.
4. Dimensions are not to be scaled from this drawing, either manually or electronically.
4. Dimensions are subject to confirmation by site measurement before construction commences. Where no dimensions are given, they are to be site measured by Contractor / fabricator.
5. Any dimensional discrepancies on this drawing are to be referred to the Engineer before the affected work proceeds.
6. Contractor to establish the location of any existing services and utilities to ensure that new structure does not bear over existing except where shown on drawings.

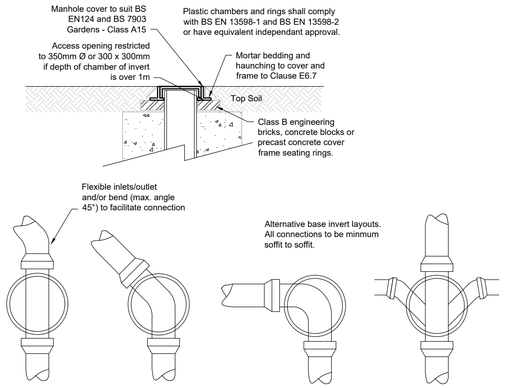
Subsurface Drainage Notes

1. All works to be in accordance with Building Regulations Approved Document H.
2. Drainage layout is shown schematically.
3. Site, cover and invert levels (where given) are in metres.
4. Driveway / road falls to gullies are indicative only. Gradients to be between 1:80 minimum and 1:12 maximum.
5. Contractor to check cover levels in relation to actual finished road levels prior to setting out.
6. All invert levels to be checked on site prior to setting out.
7. Invert level at connection points with existing sewers to be confirmed on site prior to work commencing.
8. All Foul water (FW) pipes to be 150mm Ø and to have min. gradient of 1:60 unless otherwise noted.
9. All Surface water (SW) pipes to be 100mm Ø and to have min. gradient of 1:100 unless otherwise noted.
10. Pipes running under vehicular areas with less than 1.2m cover and under landscaped areas with less than 0.9m cover to be protected with reinforced concrete cover slab.
11. Pipes to be extra strength clayware to BS EN 295, uPVC to BS 4660/5481 or concrete to BS 5911 as specified individually.
12. Pipes to be bedded and surrounded using type s graded aggregate (not crushed rock), 14-5mm.

Footway cover detail (f)



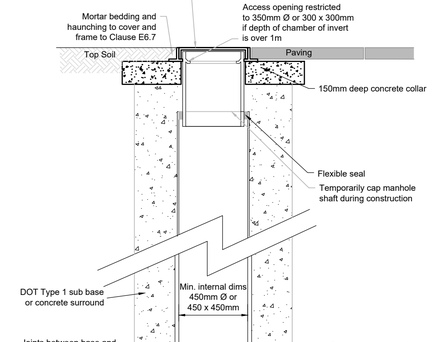
Garden cover detail (g)



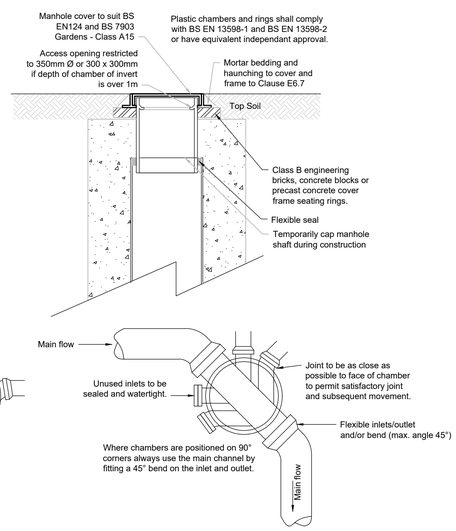
Typical inspection chamber detail - Type E (flexible material detail), (1:20)

Maximum depth from cover to soffit of pipe 2m, Non entry, Not subject to vehicle loading

Footway cover detail (f)



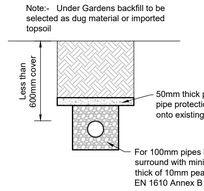
Garden cover detail (g)



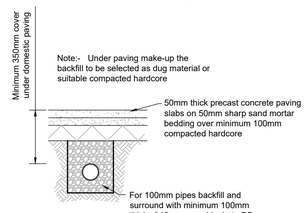
Typical inspection chamber detail - Type D (flexible material detail), (1:20)

Maximum depth from cover to soffit of pipe in areas subject to vehicle loading 3m, Non Entry

Drainage Legend	
	New surface water drainage run (SW)
RWP	New rainwater downpipe
SW##	New surface water inspection chamber / access
Soakaway Tank	New surface water soakaway tank. Constructed using proprietary storm crates with 95% voids. Crates surrounded in permeable geotextile membrane. Tank to be vented to allow release of air pressure.



Concrete slab cover for shallow drains under residential gardens, (1:20)



Concrete slab cover for shallow drains under residential paving, (1:20)

Mark	Date	Remarks

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Contract	Land adjoining 30 Victoria Road, Barnsley
Client	Liam Taylor
Architect	----
Title	Proposed surface water Drainage: Layout & Details
Date:	15/02/2021
Scale:	1:100, 1:20, 1:10, 1:5 @ A1
Engineer:	Neil Blackwell
Drawn:	Jez Watts
Drawing No.	14232 / 01