**Drainage Notes**

1. **100mm minimum cover of granular material (similar to gravel)**
2. **150mm minimum width of side fill material (similar to gravel)**
3. **100mm bedding of granular material, 10mm nominal single sized aggregate or suitable 'as dug' material well compacted by hand tamping until a finished layer of 300mm has been formed. Light hand tamping for first 100mm over crown and continue bedding material) lightly tamped by hand.**
4. **100mm bedding of suitable 'as dug' material well compacted in 100mm layers by hand tamping. Where necessary and Grade C in soft landscape areas)**
5. **Manhole base to be bedded on 150mm thick C20P concrete.**
6. **Benching of C20P concrete, to provide a slope of 1 in 12 for invert depths exceeding 3.0m to BS4211.**
7. **Base of C20P concrete, 150mm thick.**
8. **Provide concrete protection to pipes where depth of cover is less than: crown of pipe.**
9. **Maximum 675mm from cover level to first step iron/ladder rung.**
10. **For invert depths exceeding 3.0m to BS4211.**
11. **If using "plastic" products, access ways.**
12. **350mm if using "plastic" products**
13. **600mm in soft landscape areas e.g. gardens, this may be reduced to 300mm if protection may be omitted if necessary and Grade 'B' Class 2, or Grade 'C' cover and frame, dependant on location of I.C. (Grade 'B' where vehicular access is likely, or greater loads are imposed by traffic flow). Provide 150mm square C20P concrete collar if located in private drives.**
14. **Precast concrete shaft to BS5911, 1200 x 750mm or equivalent with 600mm offset access, bedded with mortar proprietary bitumen or resin mastic sealant.**
15. **Precast concrete light duty cover slab to BS5911 with 600 x 600mm mortared in Class B engineering brickwork in stretcher bond 2 courses maximum (150mm), 3 courses maximum (225mm) and/or a proprietary sealant, e.g. Tokstrip shall be used. Where depth to invert is less than 1.5m then a 1050mm diameter chamber may be used.**
16. **Step irons to BS1247 at intervals of between 250mm and 500mm maximum by use of appropriate bend.**
17. **Wall protection sleeves used to protect pipes in passing through walls, other than at manholes, surrounded with mortar or concrete.**
18. **Wall protection sleeves**
19. **Bottle gully as back inlet connection**
20. **Inspection chamber connection to main drain at lower level**
21. **Upvc connection to Clay Sleeve Pipe. Lubricate spigot of clay pipe and fit a upvc adaptor. Insert the upvc pipe spigot in the standard universal I.C. (Grade 'B' Class 2, or Grade 'C' cover and frame, dependant on location of I.C. (Grade 'B' where vehicular access is likely, or greater loads are imposed by traffic flow). Provide 150mm square C20P concrete collar if located in private drives.**
22. **Shaft may be cut with a fine toothed saw and chamfered to withstand Grade 'C' loadings. Provide 150mm square C20P concrete collar if located in private drives.**

**Table of Standard Details**

<table>
<thead>
<tr>
<th>Type of Vault</th>
<th>Size (mm)</th>
<th>Length (mm)</th>
<th>Internal dwarf channel</th>
<th>Internal straight channel</th>
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<tr>
<td>800 x 800</td>
<td>1200</td>
<td>1500</td>
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<td>1200</td>
</tr>
</tbody>
</table>

*For a list of Standard Details and Materials refer to schedule.*

**Stands PRELIMINARY**

**Jarvis**

**Client**

**Project**

**Site**

**Date**

13/12/2011