

All sewer diversions and discharges to public sewers are indicative only and are subject to approval by the Sewerage Undertaker.

All drainage locations indicated on this drawing are preliminary only. Architect is to provide detailed drawings confirming all proposed foul outlet and two positions for all units.

EX MH's invert level and location need to be checked prior to any drainage works. Any differences between actual and drawn details are to be reported immediately.

All existing public sewers on the site to be CCTV surveyed to check for third party connections.

Invert Levels need to be determined prior to any drainage works and reported back to the Engineer.

Invert Levels for existing manholes have been taken from Sewer Records. Any differences between actual and drawn details are to be reported immediately to the Engineers prior to any sewerage diversion works.

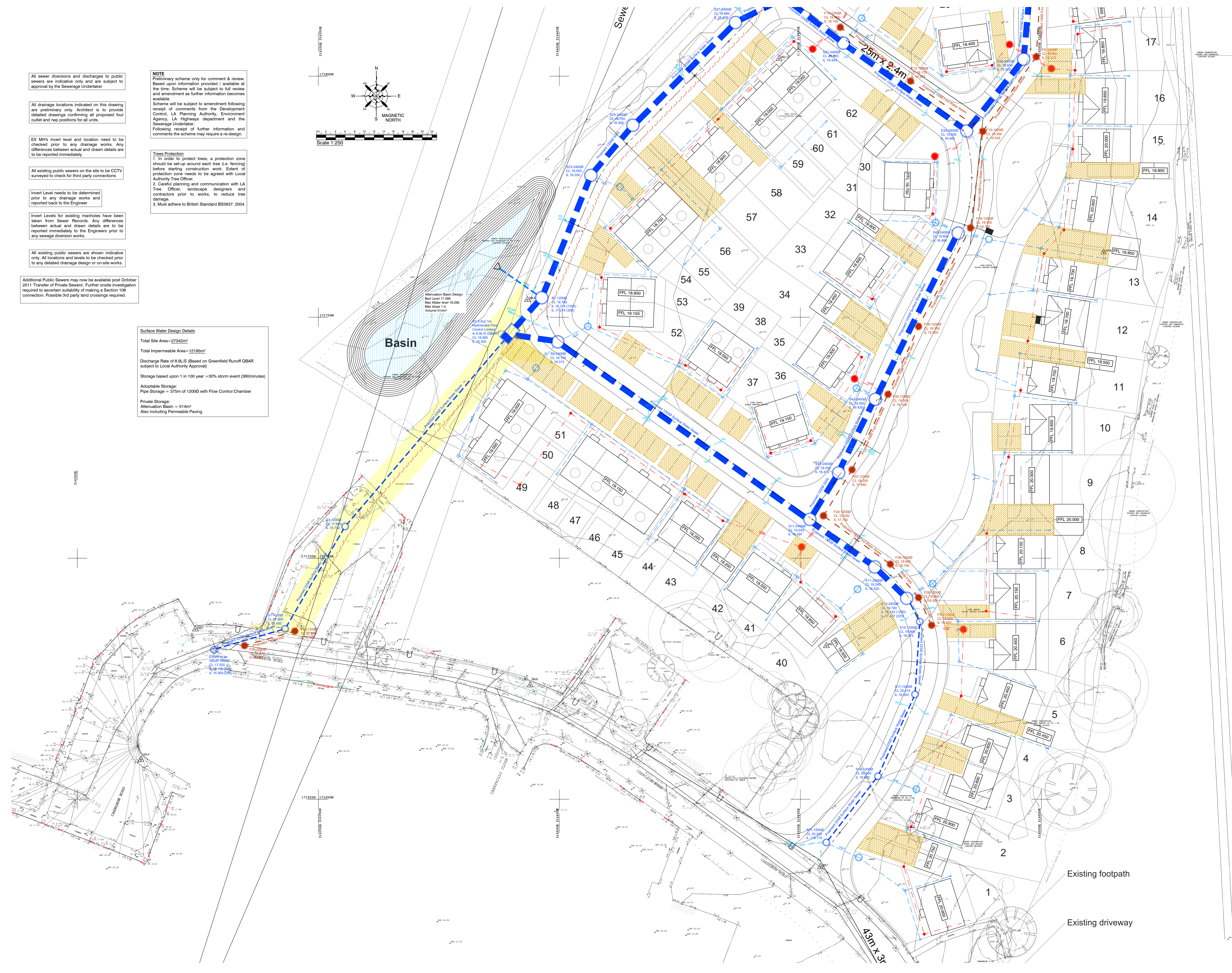
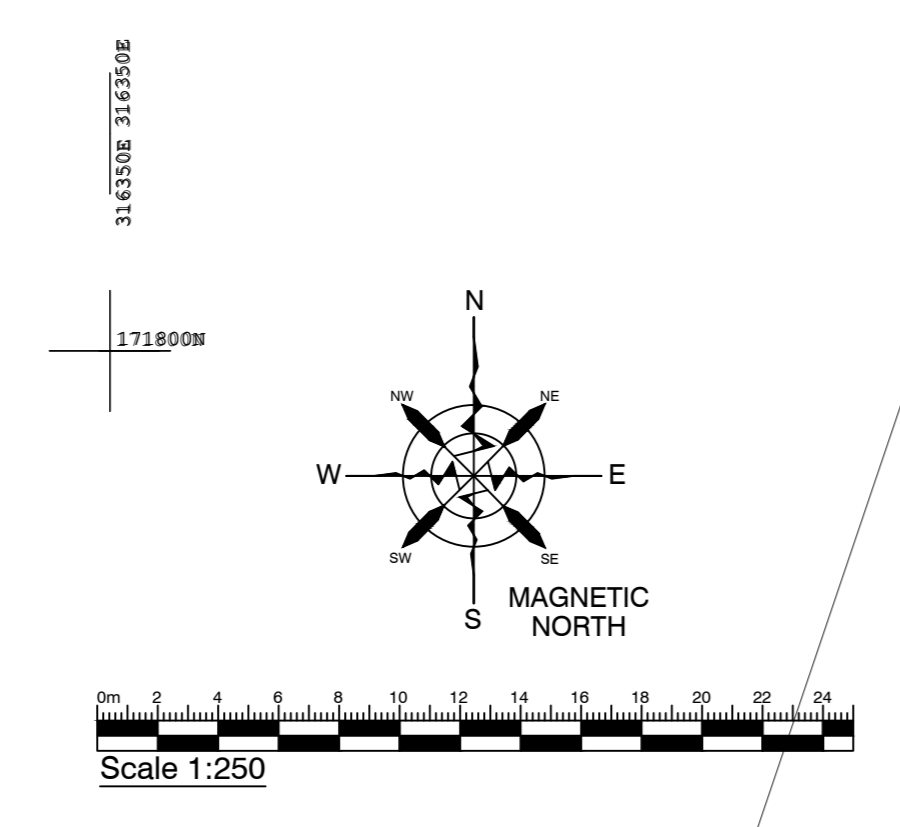
All existing public sewers are shown indicative only. All locations and levels to be checked prior to any detailed drainage design or on-site works.

Additional Public Sewers may now be available post October 2011 Transfer of Private Sewers. Further onsite investigation required to ascertain suitability of making a Section 106 connection. Possible 3rd party land crossings required.

**NOTE**  
Preliminary scheme only for comment & review. Based on information provided / available at the time. Scheme will be subject to full review and amendment as further information becomes available.  
Scheme will be subject to amendment following receipt of comments from the Development Control, LA Planning Authority, Environment Agency, LA Highways department and the Sewerage Undertaker.  
Following receipt of further information and comments the scheme may require a re-design.

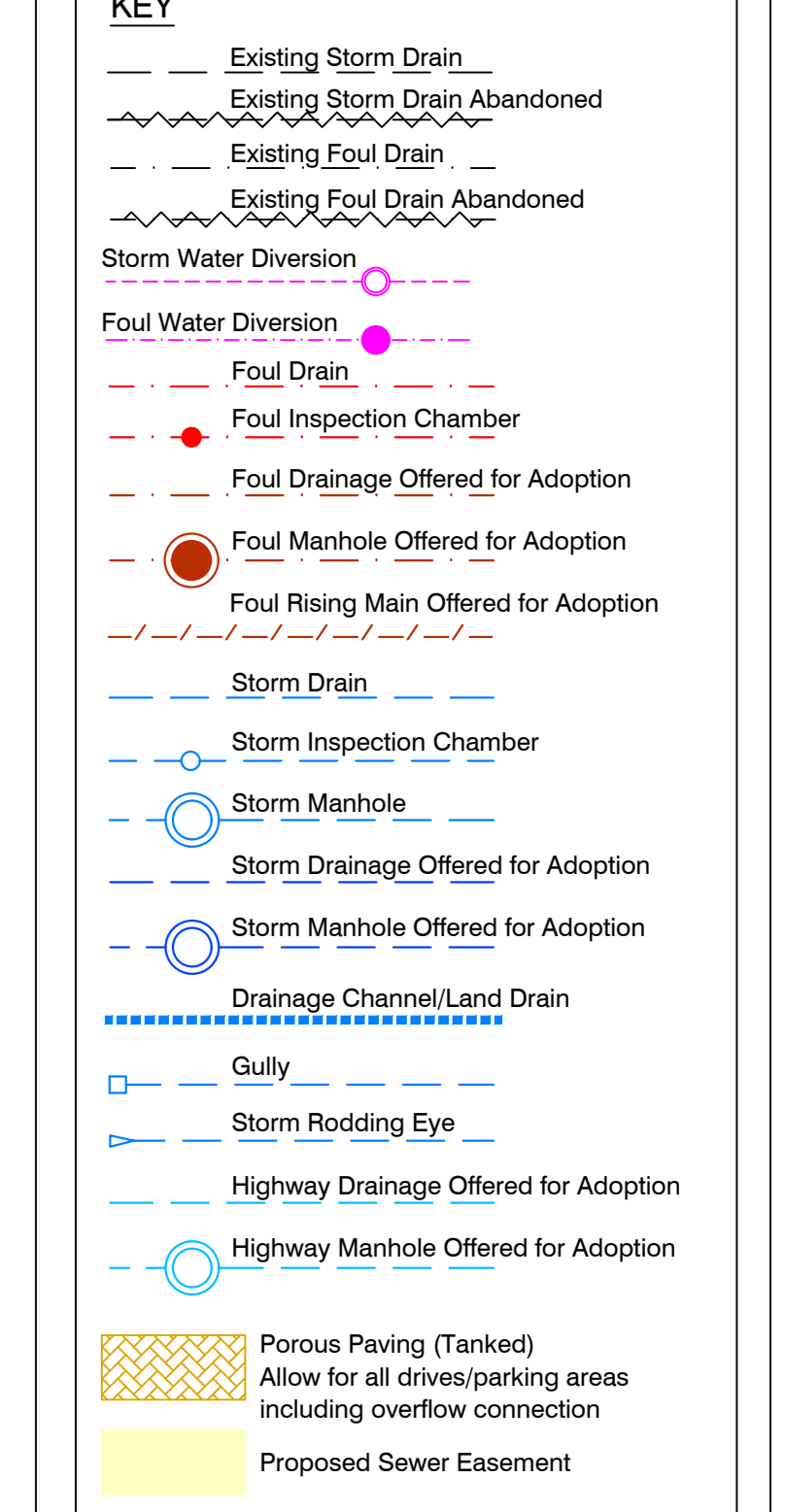
**Trees Protection**  
1. In order to protect trees, a protection zone should be set-up around each tree (i.e. fencing) before starting construction work. Extent of protection zone needs to be agreed with Local Authority Tree Officer.  
2. Careful planning and communication with LA Tree Officer, landscape designers and contractors prior to works, to reduce tree damage.  
3. Must adhere to British Standard BS5837: 2004.

**Surface Water Design Details**  
Total Site Area = 27342m<sup>2</sup>  
Total Impervious Area = 12195m<sup>2</sup>  
Discharge Rate of 8.9L/S (Based on Greenfield Runoff QBAR subject to Local Authority Approval)  
Storage based upon 1 in 100 year +30% storm event (360minutes)  
Adoptable Storage:  
Pipe Storage = 375m<sup>3</sup> with Flow Control Chamber  
Private Storage:  
Attenuation Basin = 514m<sup>3</sup>  
Also including Permeable Paving

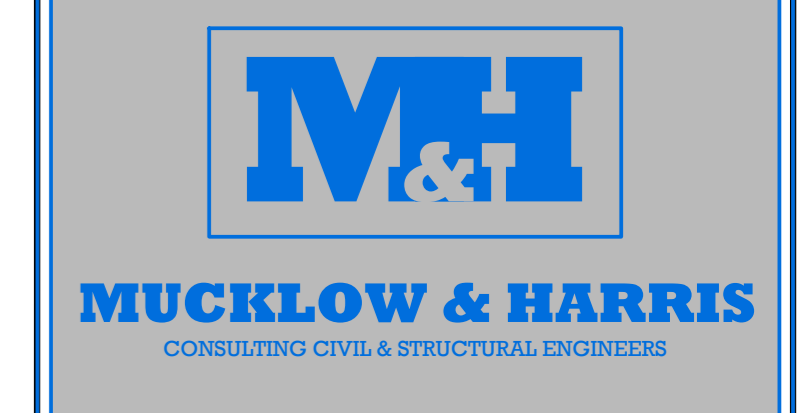


**Notes**  
This drawing is the copyright of the Engineers and may not be reproduced or used except by written permission.  
Drawings must not be scaled. Work to figured dimensions only.

- 1. Due to a change in legislation on 1st October 2011, there would be formerly private sewers which have transferred over to the responsibility of the Sewerage Undertaker. If such sewers are located on site during construction works, please contact Mucklow & Harris so that a Section 106 Agreement can be drawn up to ensure the sewers are maintained and the site is returned to its original state. The contractor shall check all dimensions and levels on site.
- 2. The survey information used in the preparation of this drawing is not warranted. The contractor shall check all dimensions and levels on site. Before work commences the contractor shall consult the engineer and the SU report regarding any construction levels. All necessary health and safety measures to be taken.
- 3. Before work commences, the contractor shall liaise with all Statutory Authorities to determine the exact location of all apparatus and take all precautions deemed necessary to locate, protect and where necessary prevent such apparatus.
- 4. This drawing is subject to approval by Local Authority, Building Control, Sewerage Undertaker and the Environment Agency. Any works undertaken prior to the granting of these approvals is carried out at risk to all others. The contractor shall ensure that all works are carried out in accordance with a reasonably licensed trade.
- 5. The contractor shall ensure that all works are carried out in accordance with the relevant building regulations and standards.
- 6. Setting out to be confirmed by the Architect.
- 7. All existing drainage, services, manholes and outfalls to remain shall be located, identified and CCTV conditions survey carried out. Where necessary, protection to the existing drainage infrastructure shall be provided.
- 8. All existing drainage, services, manholes and outfalls to be removed shall be suitably backfilled or ground up.
- 9. All sewerage drainage works shall be constructed in accordance with the Engineering Council's Code of Practice for Sewerage and Drainage. Edition 6 for adoptable drainage, for private drainage in accordance with the Building Regulations Part M4 and M5.
- 10. All existing drainage levels, diameters & locations need to be checked on site prior to any drainage works, and any discrepancies need to be reported back to the Engineer.
- 11. Concrete manhole frames are appropriate only and should be adjusted to match surrounding levels.
- 12. All manhole covers shall comply with BS EN124. Manhole covers within block paved areas and buildings shall be recessed. Cover recesses to be Class D202 in areas of heavy loading. (Minimum slip surface) Class C200 Lightly trafficked areas (see notes).
- 13. Drainage pipes 100mm Ø unless stated otherwise.
- 14. Pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 15. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 16. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 17. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 18. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 19. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 20. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 21. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 22. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 23. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 24. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 25. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 26. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 27. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 28. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 29. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 30. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 31. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 32. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 33. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 34. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 35. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 36. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 37. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 38. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 39. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 40. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 41. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 42. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 43. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 44. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 45. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 46. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 47. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 48. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 49. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 50. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 51. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 52. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 53. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 54. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 55. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 56. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 57. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 58. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 59. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 60. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 61. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.
- 62. All pipes to be laid with a minimum slope of 1 in 100 unless otherwise stated.



B	11.07.17	Updated to latest layout	DJH
A	31.03.17	Updated to latest layout	DJH
REV	DATE	AMENDMENT	BY



DRAWING STATUS: **PRELIMINARY**



PROJECT: **Caerleon Road Dinas Powys**

TITLE: **Drainage Strategy Sheet 1 of 2**

DATE	24.01.17	DRAWN	DJH
SCALE	1:250	CHECKED	AM
DRAWING NUMBER	16022-100	REVISION	B