

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 rwp 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 Level needs 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 sewage diversion works.

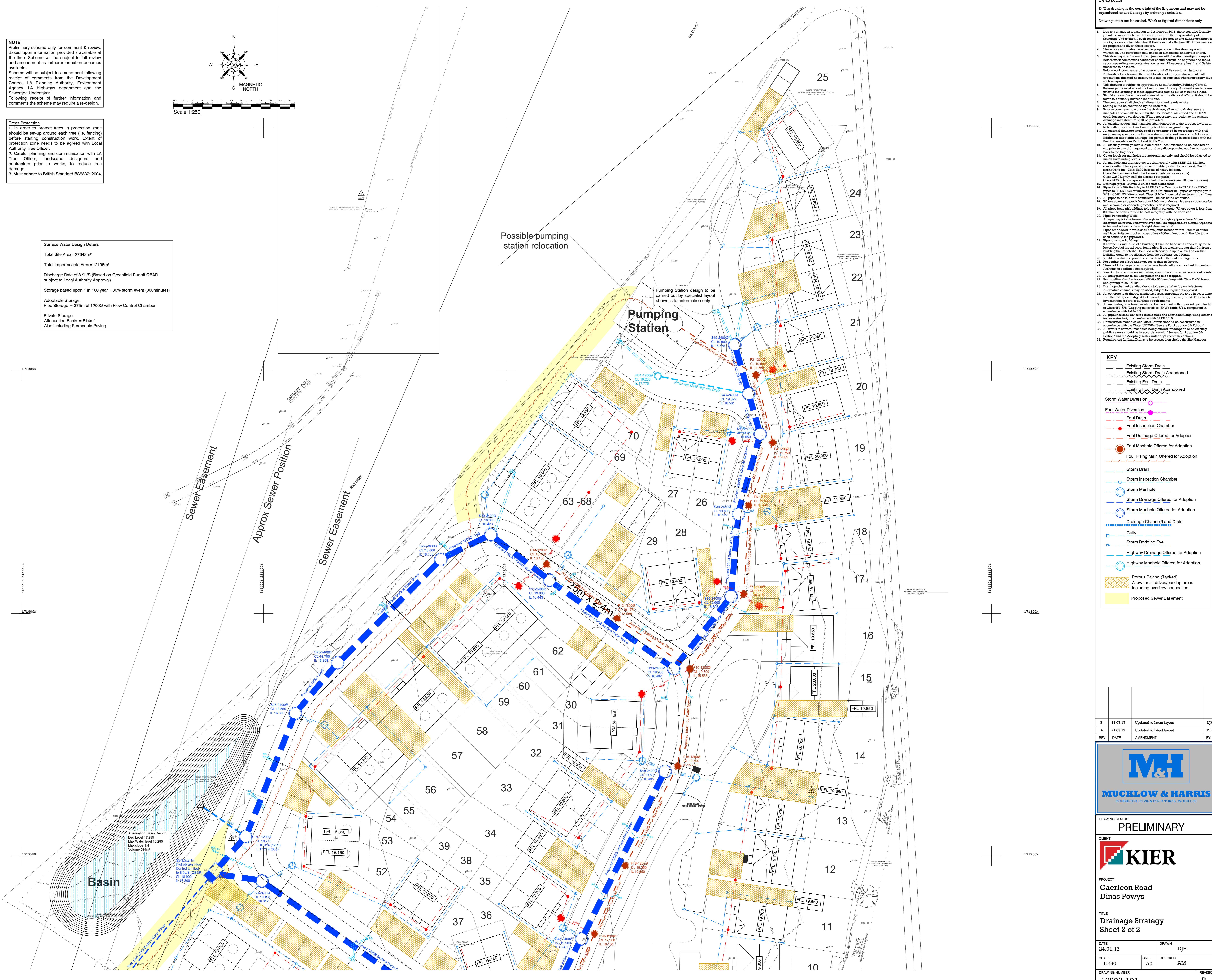
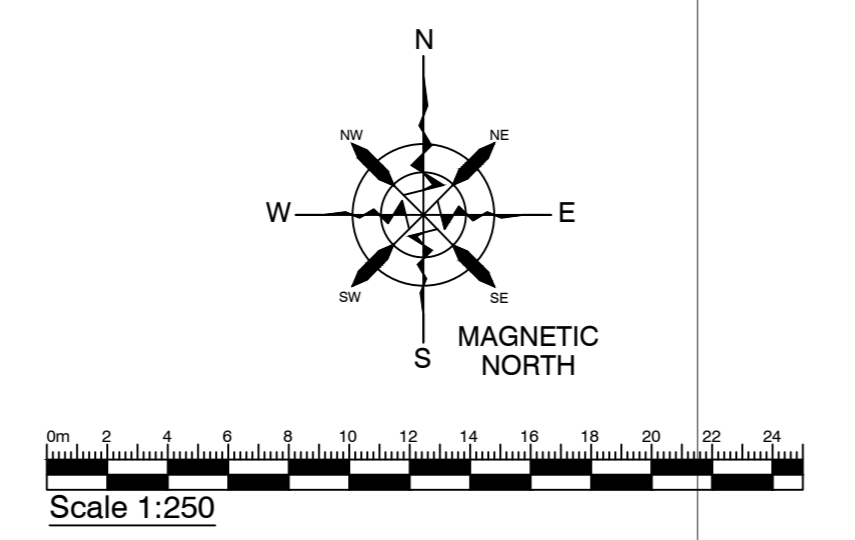
All existing public sewers are shown indicative only. All locations and levels to be checked prior to any detailed drainage design or on-site works.

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 upon 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 = 27342m²  
 Total Impermeable Area = 12195m²  
 Discharge Rate of 6.0L/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 of 12000 with Flow Control Chamber  
 Private Storage:  
 Attenuation Basin = 514m³  
 Also including Permeable Paving



**Notes**

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 Drawings must not be scaled. Work to figured dimensions only.

- Due to a change in legislation on 1st October 2011, there could be liability private sewers which have transferred over to the responsibility of the Sewerage Undertaker. All such sewers are located on-site during construction works. Please ensure that all sewer diversions are shown on the drawings and agreed with the Sewerage Undertaker.
- The contractor shall check all dimensions and levels on site.
- Before work commences contractor should contact the engineer and the SEU report regarding any construction issues. All necessary health and safety measures to be taken.
- 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 divert such apparatus.
- This drawing is subject to approval by Local Authority, Building Control, Environment Agency and the Sewerage Undertaker. Any works undertaken prior to the granting of these approvals is carried out at risk to all relevant Building Regulations Part 6 and BS 5250.
- The contractor shall check all dimensions and levels on site.
- Setting out to be confirmed by the Architect.
- Prior to commencing work on the drainage, all existing drains, sewers, manholes and vaults to remain shall be located, identified and a CCTV condition survey carried out. Where necessary protection to the existing drainage infrastructure shall be provided.
- All existing sewers and manholes shall be protected in accordance with the engineering specifications for the water industry and unless for Adoption 4th Edition for adoptable drainage, for private drainage in accordance with the building regulations Part 6 and BS 5250.
- 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.
- Cover levels for manholes are approximate only and should be adjusted to match surrounding levels.
- All manholes and drainage covers shall comply with BS EN124. Manhole covers within built up areas and buildings shall be recessed. Cover strengths to be: Class B200 in areas of heavy loading, recessed. Cover Class B250 in heavy trafficked areas (max. 100mm depth). Class C250 in lightly trafficked areas (car parks).
- Drainage pipes 150mm D unless stated otherwise.
- Pipes to be: Vitrolite G45 or BS EN 504 Concrete to BS 5911 or UPVC pipes to BS EN 1402 or Thermoplastic Structural wall pipes complying with BS 5307, BS 5911 or BS 5912 or BS 5913.
- All pipes shall be laid with a fall to level, unless noted otherwise.
- Where cover to pipes to be less than 150mm under existing concrete bed and surround an concrete protective slab is required.
- All pipes beneath buildings to be BS 5911 concrete, where cover is less than 150mm to the concrete.
- Pipe Penetration Walls.  
 All openings in external walls to be grouted with grout pipes of least 50mm clearance all round. Rods over shall be supported by a lintel. Openings to be sealed each side with lead wool.  
 Pipes embedded in walls shall have joints formed within 150mm of either wall face. Adjacent socket pipes of size 150mm diameter with flexible joints shall continue the pipeline.
- Pipe runs near Buildings.  
 If a trench is within 1m of a building it shall be filled with concrete up to the lowest level of the adjacent foundation. If trench is greater than 1m from a building equal to the distance from the building less 150mm.  
 Venting shall be provided to the distance from the building less 150mm.  
 For setting out of any and rwp, see architect's report.
- Threshold drainage systems shall be installed with a minimum of 150mm clearance above the drainage channel.  
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- All gully positions to suit the proposed and to be checked.
- Roof gutters shall be fitted 600 x 800mm deep with Class D 600 frame and gully to BS EN 124.
- Drainage channel detailed design to be undertaken by manufacturer.
- Alternative channels may be used, subject to Engineer's approval.
- All concrete to drainage, manholes bases, supports etc. to be in accordance with BS EN 12062 or BS EN 12063, as appropriate. Before any investigation report for adoption requirements.
- All manholes and vaults to be backfilled with approved granular fill to class GF 4FF (Capping material) to (BS) Tables 6/1 & 6/2 completed in accordance with Table 6/1.
- All positions shall be marked both before and after backfilling, using either our best work or in accordance with BS EN 124.
- Demarcation manholes and lateral drains need to be constructed in accordance with the Water 92 Works (Service Adoption 0th Edition).
- All works to manholes, manholes being offered for adoption or on existing public sewers should be in accordance with the Terms for Adoption 0th Edition from the Adopting Water Authority or Sewerage Undertaker.
- Requirement for Land Drains to be assessed on site by the Site Manager.

**KEY**

- Existing Storm Drain
- Existing Storm Drain Abandoned
- Existing Foul Drain
- Existing Foul Drain Abandoned

**Storm Water Diversion**

- Foul Drain
- Foul Inspection Chamber
- Foul Drainage Offered for Adoption
- Foul Manhole Offered for Adoption
- Foul Rising Main Offered for Adoption

**Storm Drain**

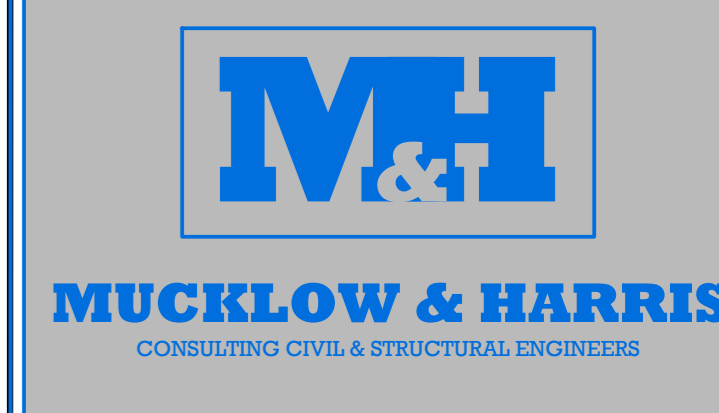
- Storm Drain
- Storm Inspection Chamber
- Storm Manhole
- Storm Drainage Offered for Adoption
- Storm Manhole Offered for Adoption
- Storm Drainage Offered for Adoption

**Drainage Channel/Land Drain**

- Gully
- Storm Rodding Eye
- Highway Drainage Offered for Adoption
- Highway Manhole Offered for Adoption

- Porous Paving (Tanked)
- Allows for all driveway/parking areas including overflow connection
- Proposed Sewer Easement

REV	DATE	AMENDMENT	BY
B	21.07.17	Updated to latest layout	DJH
A	21.03.17	Updated to latest layout	DJH



**KIER**

**PROJECT**  
 Caerleon Road  
 Dinas Powys

**TITLE**  
 Drainage Strategy  
 Sheet 2 of 2

**DATE** 24.01.17      **DRAWN** DJH  
**SCALE** 1:250      **SIZE** A0      **CHECKED** AM  
**DRAWING NUMBER** 16022-101      **REVISION** B