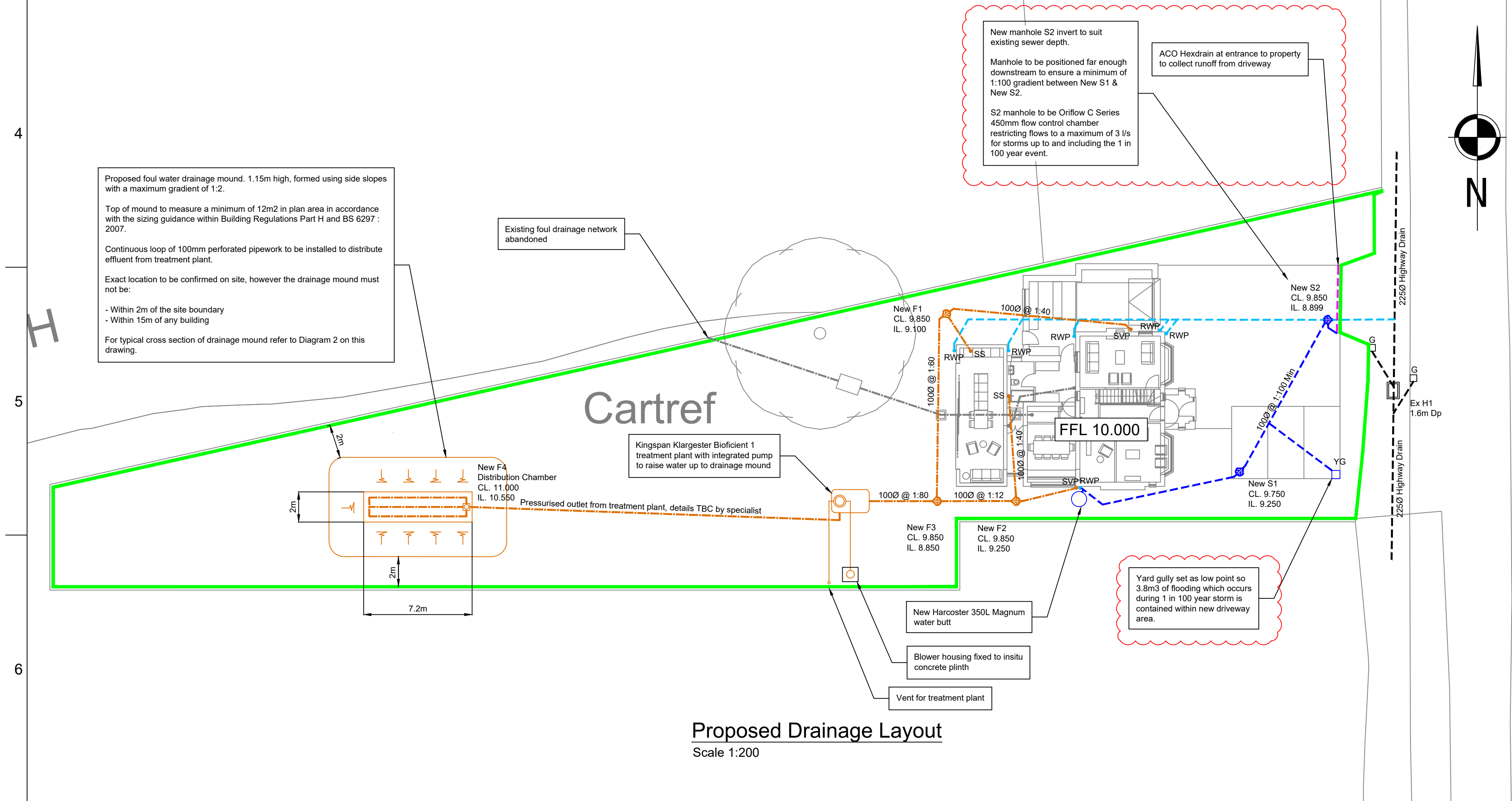
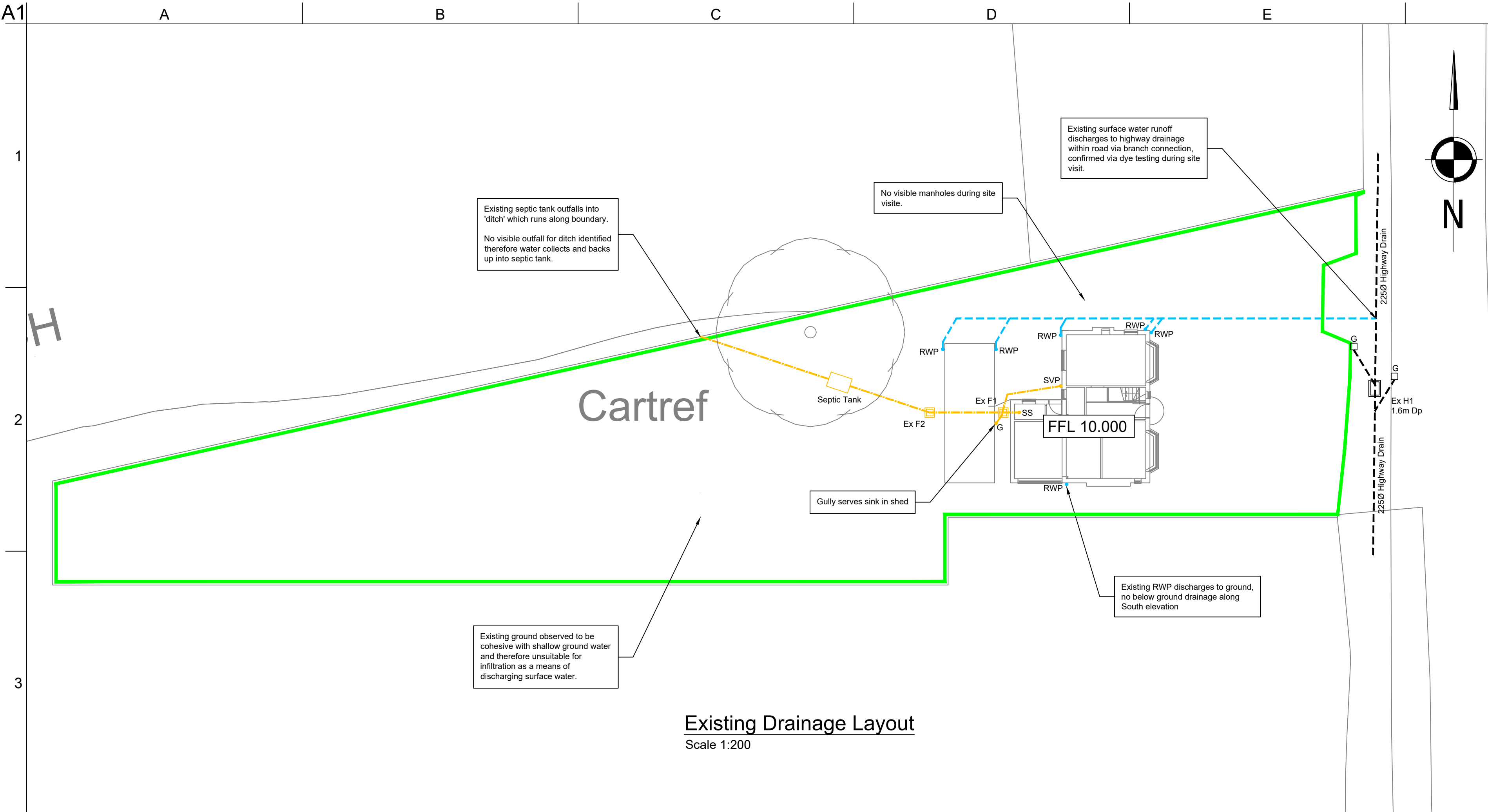




**Proposed Drainage Strategy**

**Existing Foul Water Flows:**

Currently, foul water flow west from the rear of the property through an existing below ground piped network, underneath the existing outbuilding and to a septic tank located in the rear garden. Effluent is then discharged from the septic tank to a nearby 'ditch' which runs along the Northern boundary.

The ditch has no visible outfall and is not believed to discharge anywhere, effectively acting as a small area to water to pond and backing up into the septic tank and therefore is not suitable to discharge effluent from the property.

**Proposed Foul Water Flows:**

Due to the current condition, and the amendments required to suit the development proposals, it is proposed to abandon the existing foul drainage network and replace with new.

The septic tank will be upgraded to a new Kingspan Klargestor Bioefficient 1 foul water treatment plant with integrated pump. This unit has a person equivalent (PE) of 6 and is designed to minimise dig depths during installation.

As the site is located within a Source Protection Zone (SPZ) the client must apply to Natural Resources Wales for a Bespoke Environmental Permit. It is not advised to begin construction of the foul water network until this permit has been obtained.

As the site is not suitable for discharging the treated effluent from the plant via a below ground drainage field, it is proposed to construct an above ground drainage mound in accordance with Building Regulations Part H. A typical cross section of a drainage mound has been provided on this drawing below.

The mound has been sized in accordance with BS 6297 : 2007 using the following calculation:

$At = p \times Vp \times 0.2$

$At$  = Area of the drainage mound in m<sup>2</sup>

$p$  = Number of persons served by the tank (4 bedroom house = 6 persons)

$Vp$  = Percolation Value (Average values between 12-100 are suitable, 12 used as mound will be constructed using permeable materials)

$0.2$  = Treatment Plant Factor

$6 \times 12 \times 0.2 = 14.4m^2$

**Existing Surface Water Flows:**

Currently, surface water flows discharge through the below ground piped network to the highway drainage which runs along the frontage of the site in the footpath of Bedwell Road. During the site inspection there was no visible manholes or access points within the site but connectivity was confirmed via dye testing.

The existing rainwater pipe of the South elevation was found to discharge into the ground.

**Proposed Surface Water Flows:**

As infiltration is not suitable due to ground conditions, the proposed surface water runoff will continue to discharge to the highway drainage within the Bedwell Road, this is in accordance with the priority listed in Building Regulations Part H which is as follows:

a) an adequate soakaway or some other adequate infiltration system; or where that is not reasonably practicable,

b) a watercourse, or, where that is not reasonably practicable,

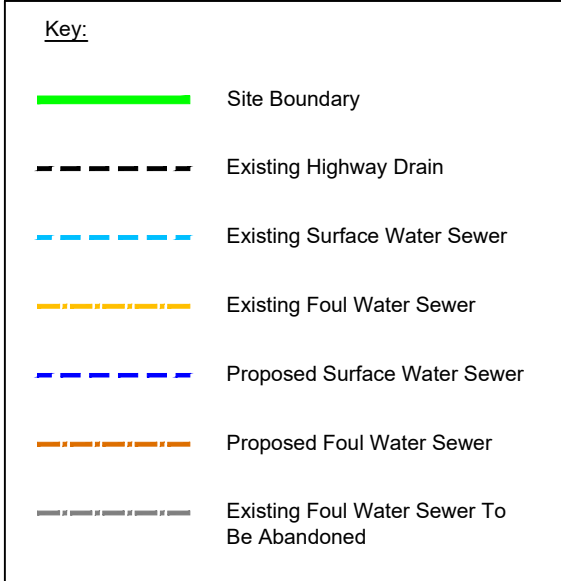
c) a sewer.

New pipework will be installed to pick up water from the rainwater pipe on the South elevation which currently has no outfall and connect it into the existing system.

In accordance with the requirements of Wrexham County Borough Council Surface water flows post development will re restricted to a maximum of 3 litres per second using a flow control manhole fitted to the existing surface water outfall pipe.

| Storm Return period              | Existing Flow Rate     | Proposed Flow Rate  |
|----------------------------------|------------------------|---------------------|
| 1 in 1 year                      | 2.9 litres per second  | 3 litres per second |
| 1 in 30 year                     | 8.1 litres per second  | 3 litres per second |
| 1 in 100 year<br>+30% CC in prop | 10.5 litres per second | 3 litres per second |

- Notes**
- This drawing should be read in conjunction with all relevant consultants drawings and specialist contractors/supply chain drawings and specifications.
  - All dimensions are in mm, all levels in mOD unless specified otherwise.
  - All drainage works are to be in accordance with The Building Regulations part H and CESWI 7th Edition unless specified otherwise.
  - Rodding points should be provided at all discharge pipes (SVP/SS/RWP) to give access to all lengths of below ground pipework. These rodding points (above ground drainage) should be located above the ground floor level unless otherwise specified in the Above Ground Drainage Design.
  - All foul drainage pipes to be Ø100 at 1/40 gradient and all Surface Water pipes to be Ø100 at 1/60 gradient unless specified otherwise on the plans.
  - Foul & surface water pipes and fittings to be Plastic to BS EN 1401-1:2009.
  - All new manholes to be 450mm diameter PPIC construction.
  - All site levels are based on the site being flat, finished floor level has been assigned purely to establish depths of drainage. Contractor and Architect shall confirm all Manhole Cover Levels and requirements for low spots (requirements for gullies) before commencement of the works.



| Revision |          |    |      |      |
|----------|----------|----|------|------|
| Issue    | Date     | By | Chkd | Appd |
| P1       | 12.04.21 | MF | NH   | NH   |
| P2       | 28.04.21 | MF | NH   | NH   |
| P3       | 01.08.21 | MF | NH   | NH   |

Flow control manhole added to suit comments from Local Authority Flood Officer

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Client  
**Mr & Mrs Baker**

Job Title  
**Cartref  
Bedwell Road  
Wrexham  
LL13 0TS**

Drawing Title  
**Existing & Proposed Drainage  
Layouts**

Scale at A1  
**1:200 U.N.O.**

Drawing Status  
**Preliminary**

Job No Drawing No Issue  
**764 CAR-HLE-XX-00-DR-C-00300 P3**

