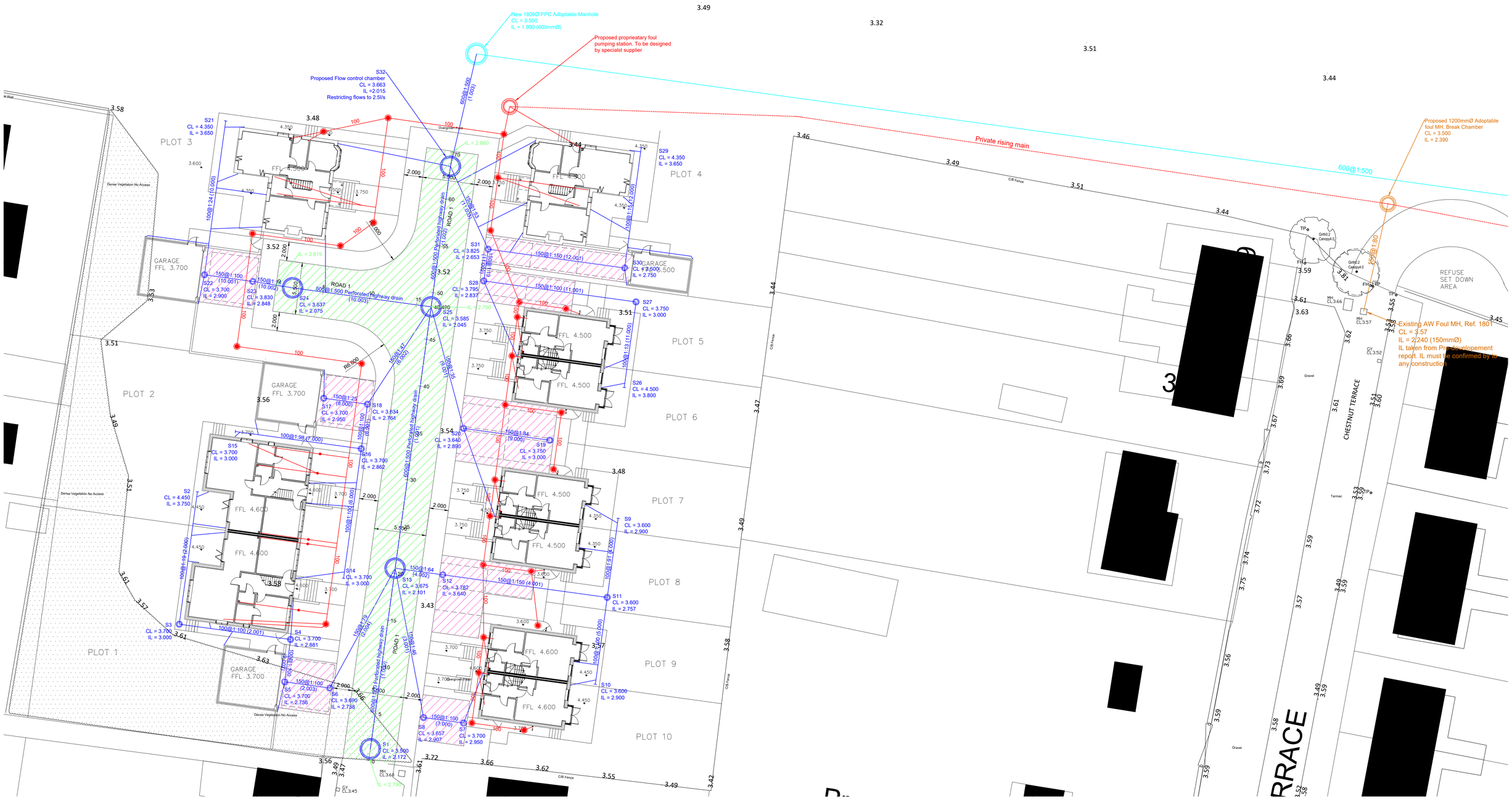


GENERAL

Do not scale from this drawing.

All dimensions are in millimetres unless noted otherwise.

All setting out to architects drawings.

Drawing to be read in conjunction with all other SEA drawings and architects drawings.

This scheme has been designed using the survey information provided by others. It shall be the responsibility of the contractor to verify levels, boundaries etc prior to commencing any works on site. SEA Structural Engineers Ltd. shall not accept any responsibility for errors resulting from the survey.

All setting out of houses and private drives/footpaths to be in accordance with the Architect's drawings, the Contractor is to check all dimensions and levels prior to commencement of work and report any discrepancies to the Engineer, including any encountered during construction works.

All dimensions should be checked on site prior to construction. Please notify the Engineer of any discrepancies before commencing or continuing any work.

DRAWING KEY:

- Proposed storm water drainage run
- Proposed Storm PPC MH 1800mmØ
- Proposed storm PPIC 450mmØ
- Proposed storm rodding eye
- Proposed AW adoptable storm water sewer
- Proposed foul water drainage run
- Proposed foul PPIC 450mmØ
- Proposed foul mini acess chamber 190mmØ
- Proposed AW adoptable foul water sewer
- Proposed adoptable access road formed using permeable paving. Constuction built up
  - 80mm thick permable block paving
  - 50mm laying course
  - 130mm road base punctured on a 750mm grid, AC 32 dense base 100/60
  - 450mm min Type 3 course graded aggregate subbase laid to fall toward outfall at 1in500. IL of subbase as shown on plan
  - All pipework within subbase to be perforated
- Proposed private drive formed using permeaeble block plaving with a minimum subbase thickness of 300mm. All pipework within permeable paving to be perforated.

Storm Drainage design Statement

In accordance with the storm drainage hierarchy we have considered use of infiltration techniques, outfall to watercourse and finally outfall to sewers, each presented below;

Outfall to ground (infiltration)
The ground investigation report for the proposed development by AGS Ground Solution Ltd, ref A1816-2 undertook infiltation testing and found that due to the clayey nature of the soil and high ground water table that the use of soakaways would not provide an effective solution for the disposal of storm water.

Outfall to Watercourse
There are no watercourse within the site boundary. There is an existing Anglian water sewer east of the development site which does outfall into an IDB controlled watercourse. Disscussed below.

Outfall to Sewers
As mentioned above there is a an existing Anglian Water sewer east of the development which is located within land controlled by the client. Therefore we have proposed the sites storm water outfall to this sewer with the construction of new adoptable drainage up to the development site as per the drainage plans. The outline planning condition for the development requires that storm water flows are restricted to 1.14l/ha, based on the sites impermeable area (0.192ha) this requires a flow rate of 0.21l/s. Due to maintenance issues with providing a flow rate this low the development storm flows will be restricted o 2.5l/s which is as close to greenfield runoff as possible due to possible maintenance issues with providing a small aperture. Flows will be restricted using a Hydro-Brake as shown on the drainage plan. Attenuation will be provided within the subbase of the permeable block paving in order to protect the site from flooding for storm drainage up to a 1 in 100 year storm event plus a 40% allowance for climate change. The drainage has been modelled using Causeway Flow and the calculations presented also include for the 1 in 1 and 1 in 30 year storm events.

Urban Creep
We have included a 10% increase of positively drained areas in the calculations in accordance with best practise guidelines.

SUDS
the adopted access road and private drives will be formed using permeable block paving which will provide adequate water treatment prior to outfall.

Rev.	Date	By	Description

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PROJECT

RESIDENTIAL DEVELOPMENT WITHINGTON STREET SUTTON BRIDGE

DRAWING

PROPOSED DRAINAGE LAYOUT

SCALE: 1:200 @A0	DATE: 30.06.2019
DRAWN BY: SEA	REV: ..

STATUS: FOR PLANNING

DWG No: 1886/S/E10