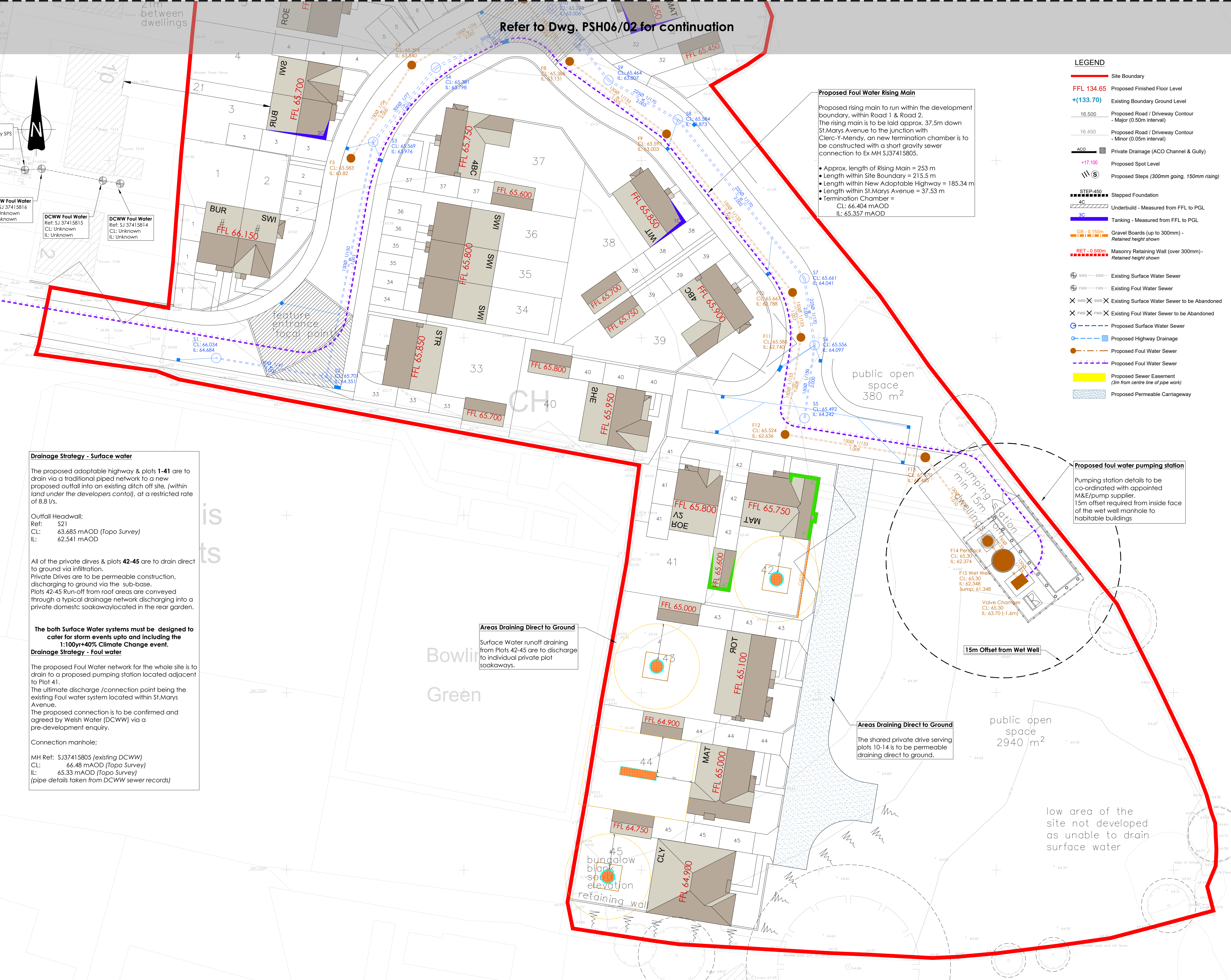




Drainage Strategy - Surface water

The proposed adoptable highway & plots 1-41 are to drain via a traditional piped network to a new proposed outfall into an existing ditch off site, (within land under the developers control), at a restricted rate of 8.8 l/s.

Outfall Headwall:
Ref: S21
CL: 63.685 mAOD (Topo Survey)
IL: 62.541 mAOD

All of the private drives & plots 42-45 are to drain direct to ground via infiltration.
Private Drives are to be permeable construction, discharging to ground via the sub-base.
Plots 42-45 Run-off from roof areas are conveyed through a typical drainage network discharging into a private domestic soakaway located in the rear garden.

The both Surface Water systems must be designed to cater for storm events upto and including the 1:100yr+40% Climate Change event.

Drainage Strategy - Foul water

The proposed Foul Water network for the whole site is to drain to a proposed pumping station located adjacent to Plot 41.
The ultimate discharge /connection point being the existing Foul water system located within St.Marys Avenue.
The proposed connection is to be confirmed and agreed by Welsh Water (DCWW) via a pre-development enquiry.

Connection manhole:
MH Ref: SJ37415805 (existing DCWW)
CL: 66.48 mAOD (Topo Survey)
IL: 65.33 mAOD (Topo Survey)
(pipe details taken from DCWW sewer records)

Areas Draining Direct to Ground

Surface Water runoff draining from Plots 42-45 are to discharge to individual private plot soakaways.

Areas Draining Direct to Ground

The shared private drive serving plots 10-14 is to be permeable draining direct to ground.

Proposed Foul Water Rising Main

Proposed rising main to run within the development boundary, within Road 1 & Road 2. The rising main is to be laid approx. 37.5m down St.Marys Avenue to the junction with Clerc-Y-Mendy, an new termination chamber is to be constructed with a short gravity sewer connection to Ex MH SJ37415805.

- Approx. length of Rising Main = 253 m
- Length within Site Boundary = 215.5 m
- Length within New Adoptable Highway = 185.34 m
- Length within St.Marys Avenue = 37.53 m
- Termination Chamber =
CL: 66.404 mAOD
IL: 65.357 mAOD

- LEGEND**
- Site Boundary
 - FFL 134.65 Proposed Finished Floor Level
 - +133.70 Existing Boundary Ground Level
 - 16.500 Proposed Road / Driveway Contour - Major (0.50m interval)
 - 16.450 Proposed Road / Driveway Contour - Minor (0.05m interval)
 - ACO Private Drainage (ACO Channel & Gully)
 - +17.100 Proposed Spot Level
 - Proposed Steps (300mm going, 150mm rising)
 - STEP-450 Stepped Foundation
 - 4C Underbuild - Measured from FFL to PGL
 - 3C Tanking - Measured from FFL to PGL
 - GB - 0.150m Gravel Boards (up to 300mm) - Retained height shown
 - RET - 0.500m Masonry Retaining Wall (over 300mm) - Retained height shown
 - SWS Existing Surface Water Sewer
 - FWS Existing Foul Water Sewer
 - SWS X Existing Surface Water Sewer to be Abandoned
 - FWS X Existing Foul Water Sewer to be Abandoned
 - Proposed Surface Water Sewer
 - Proposed Highway Drainage
 - Proposed Foul Water Sewer
 - Proposed Foul Water Sewer
 - Proposed Sewer Easement (3m from centre line of pipe work)
 - Proposed Permeable Carriageway

Proposed foul water pumping station

Pumping station details to be co-ordinated with appointed M&E/pump supplier.
15m offset required from inside face of the wet well manhole to habitable buildings

- NOTES**
- CONNECTIONS**
- All SVP, RWP and BIG connections are indicative and must be confirmed by architect.
 - All surface water / gully connections on combined systems to be trapped.
 - Pipe gradients out of building to connecting manhole to be laid on 1:40 in accordance with Part H of the 2002 Building Regulations, Table 6. All inverts to SVP within 3 storey buildings must be 750mm in accordance with Building Regulations.
- PIPEWORK**
- Where surface and foul water pipe sizes are not indicated the diameter is to be ø100 unless stated otherwise.
 - Where surface water pipe gradients are not indicated a ø100 pipe is to be laid no shallower than 1:100 and a ø150 pipe is to be laid no shallower than 1:150.
 - Where foul water pipe gradients are not indicated a ø100 pipe is to be laid no shallower than 1:80, with the exception of the first connection that is to be laid at 1:40. a ø150 pipe is to be laid no shallower than 1:150.
- INSPECTION CHAMBERS & MANHOLES**
- Manhole covers to be marked "FWS" or "SWS" as appropriate.
 - Brickwork to manholes to be english bond.
 - All manhole covers and frames must comply with BS EN124. Covers in roads to be grade D400 and be 150mm deep. Manhole covers in car parking areas and drives to be grade B125, whilst landscaped areas may be grade A15. All to be sized in accordance with Part H of Building Regulations:2002, Tables 11 & 12.
 - Precast concrete chamber rings to be reinforced.
- BACKDROPS**
- Backdrops in the private manholes / inspection chambers to be internal.
 - Backdrops in the main drainage system being offered for adoption are to be in accordance with Sewers for Adoption 7th Edition - for additional information see Drainage Construction Details drg.
- BEDDING AND SURROUND**
- Private sewers located under adopted / private roads to be Class S Granular Bed and Surround with a minimum of 1.2m cover. Where this cannot be achieved a Class Z Concrete Bed and Surround is to be provided. - for additional information see Road Construction Details drg.
 - Private sewers located under landscaped areas or driveways / car parking bays to be Class F Granular Bed and Surround with a minimum of 0.6m cover. Where this cannot be achieved a Class Z Concrete Bed and Surround is to be provided. - for additional information see Road Construction Details drg.
- SERVICES**
- All underground services to be confirmed by contractor prior to commencement on site. Any discrepancies to be reported to engineer.
- The developer must self-ver and certify that the design criteria, material standards and workmanship specifications for the proposed adoptable sewers are in accordance with those set out in "Sewers for Adoption" 7th Edition (SFA 7th), The Welsh Ministers Standards and the requirement of DCWW as the Statutory Sewerage Undertaker.**
- Subject to a Section 104 Adoption Agreement being complete, a Section 106 application to connect must be made to DCWW the developer shall give 21 days' notice prior to connection. The works may only be undertaken by an SSIP Health & Safety approved contractor.**

C	14.03.23	Updated with Layout Rev E	CP
B	04.01.23	Updated with Layout Rev D & Client comments re; off-site Surface Water Drainage route	CP
A	12.12.22	Preliminary issue for review	CP
Mark	Date	Details	By
Revision history			
Drawing originator:			
BETTS HYDRO CONSULTING ENGINEERS			
BETTS ASSOCIATES CONSULTING ENGINEERS			
BETTS GEO CONSULTING ENGINEERS			
Client:			
Pickstockhomes			
Project title:			
St. Marys Avenue, Overton, Wrexham			
Drawing title:			
Preliminary Drainage Strategy Plan Sheet 2 of 3			
Scale: 1:250 for the original size of A1			
Drawn by: CP Checked by: RA Passed by: RA Date: Dec 2022			
Drawing status:			
Preliminary			
Job No:	Drawing No:	Project:	Origin:
PSH06	xx	BET	xx
	xx	xx	xx
	C	03	C
Do not scale this drawing			
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