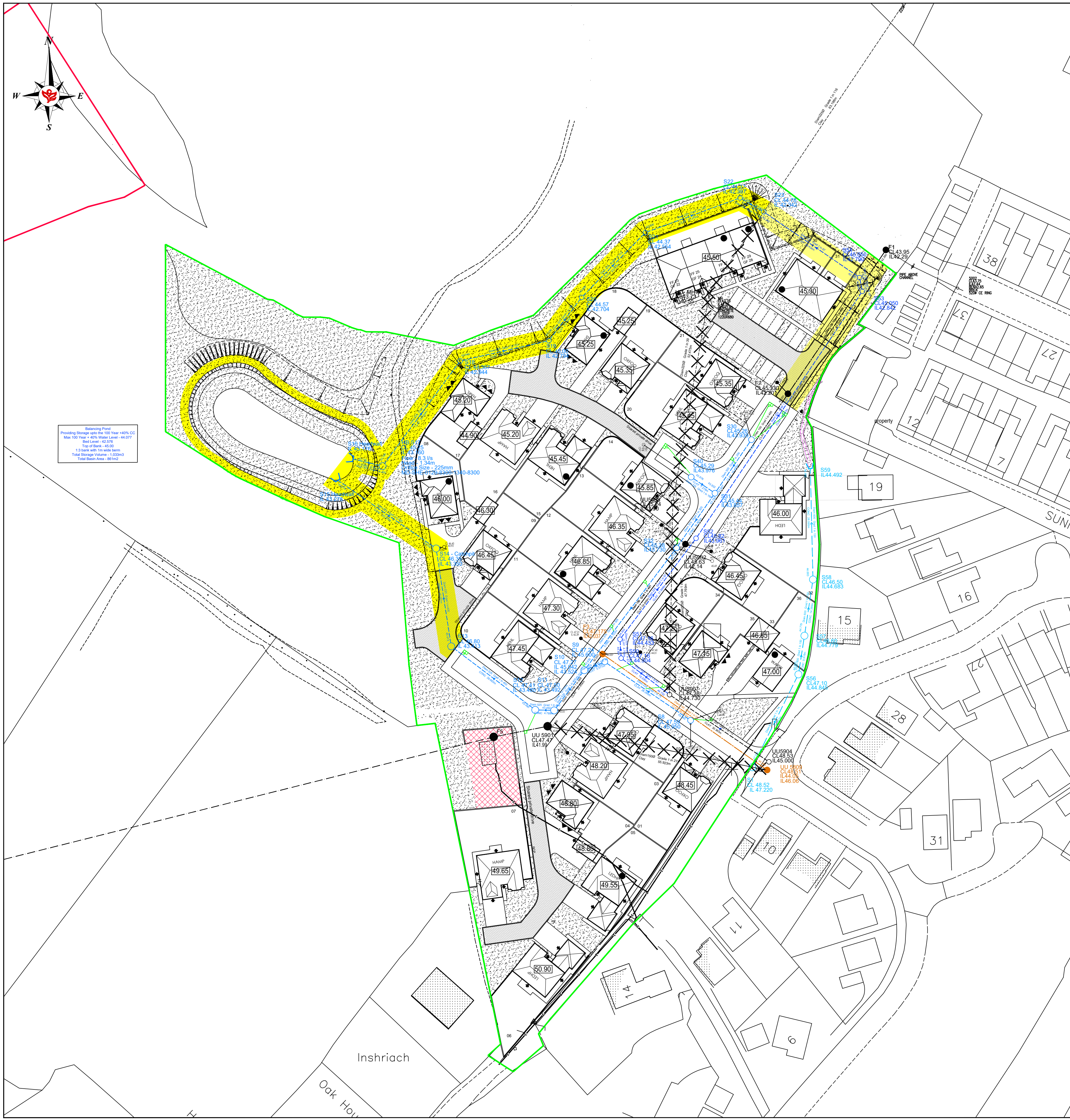




General Drainage Notes

No work should commence on site until written approval is received from the adopting highway authority, adopting drainage company, NHBC, Environment Agency and/or any other relevant authority. Works undertaken prior to approval are at the developer's risk and Redrow Homes (Lancashire) Ltd will not be held responsible for subsequent delays in approvals, remedial costs or delays.

All invert levels of existing foul and surface water systems are to be confirmed prior to the commencement of any on site drainage works. Any discrepancy in levels is to be reported immediately to Redrow Homes (Lancashire) Ltd.

All pipe diameters given are nominal internal pipe diameters including rising mains.

All adoptable sewers, unless otherwise stated, shall be:

150mm dia to be structured wall uPVC to BS EN 13476 and WIS 4-35-01 or vitrified clay to BS EN 295-1:2013.
225mm dia to be structured wall uPVC to BS EN 13476 and WIS 4-35-01 or vitrified clay to BS EN 295-1:2013.
300mm dia to be structured wall uPVC to BS EN 13476 and WIS 4-35-01 or vitrified clay to BS EN 295-1:2013.

375mm dia and greater to be Class 120 concrete pipes BS EN 1916:2002 and BS 5911-1: 2002.

Concrete manholes to be to BS EN 1917:2002 and BS 5911-3: 2010-A1:2014.

Lateral connections from main sewers to demarcation chamber to be 150mm dia minimum and constructed to adoptable standards.

First pipe out of manholes to be as short as practicable so as to provide a flexible joint as close as possible to the outside face of the concrete surround and connected to a rocker pipe.

All sewer works to comply with WRc 'Sewers for Adoption - 6th Edition', United Utilities' requirements and kitemarked (or similar approved) where practicable. Where conflicting details occur, United Utilities' details shall take precedence in all cases.

Manhole covers and frames shall / must have a clear opening of 600mm (unless otherwise stated) and shall be Class D400 to BS EN 124 with 150mm deep frames in highways. Class B125 covers and frames to be provided on all other manholes.

Filled ground must be filled and consolidated under, and to the satisfaction of United Utilities, before any sewer works are carried out.

Cover slabs must carry the BSI kitemark and shall comply with BS EN 1917: 2000 and BS 5911-3:2010 with a minimum clear opening of 750mm x 600mm. Where the clear opening of the kitemarked product is different to that of the cover and frame, a load bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm.

Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided to prove that such precautions are not required.

Adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

Sewers must have 5m clearance from trees and hedges.

All pipes to have Class "S" Granular bed and surround unless otherwise stated. Bedding and backfill materials to conform to the requirements of WIS 4-08-02 (Table A2). Where depth of cover to top of sewer is less than 1.2m in highways and verges (or less than 0.5m in non vehicular accessed areas), then a 150mm thick GCHS concrete bed and surround shall be provided.

All sewer trenches and branch connections to be backfilled with suitable material in layers not exceeding 225mm unconsolidated thickness then fully compacted.

Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths.

Plastic channel sections will not be permitted within manhole chambers. Clayware channels shall be used within manholes for pipe sizes up to and including 300mm diameter.

The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connection and bends.

United Utilities' policy is not to accept Type C (SFA6) brick manholes and 1050mm diameter manhole rings. For manholes with depths to soffit of 1-1.5m, the following may be used:

- For pipes up to 225mm diameter, 1200mm diameter manholes with 750mm x 750mm cover and frames may be used.
- For pipe diameters 300mm and greater a 1500mm diameter rings (minimum) and a 1200x600 cover slab with opening sited over the channel with a 600x600 cover and frame shall be used. Note manhole diameter shall be increased accordingly to reflect the size of the largest pipe.

United Utilities is NOT obliged to accept filter drain / land drainage run off into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of land drainage run off will therefore be required and any proposals must be agreed with the local authority land drainage section.

Highway Notes

The design and specification of all highway works shall, in all respects, comply with the current Lancashire County Council's standard details.

Excavations under proposed or existing highways to be backfilled with Type 1 granular sub base material.

Excavations, backfilling and reinstatement in public highways shall be carried out in accordance with the requirements of the Street Works (Reinstatement)(England) Regulations 1992 and relevant provisions of the HAUC 'Specification for the Reinstatement of Openings in Highways' 2010, both made under Section 71 of the New Road and Street Works Act 1991.

All gully connections to be 150mm dia structured wall uPVC. All connections to sewers to be junctions not saddles.

Class D400 covers and frames shall be 150mm thick to BS EN 124 and provided in all new carriageways / pedestrianised streets where vehicular access can be expected, and all existing highways. Class B125 covers and frames to be provided on all other manholes.

All operatives working on the highways work, including within the site, must have streetworks accreditation.

All highway works on the site must be signed and guarded in accordance with Chapter 8 of the Traffic Signs Manual.

Section 163 of the Highways Act 1980 requires provision to be made to prevent water falling on or flowing onto the highway from private driveways or properties. The contractor shall ensure that such drainage requirements are connected into the private surface water drainage system.

Legend

S20 2250 @ 1:170 Proposed S104 Surface Water Sewer

F6 1500 @ 1:150 Proposed S185 Foul Water Sewer

S52 2250 @ 1:170 Proposed S185 Surface Water Sewer

F1 1500 @ 1:150 Existing Foul Water Sewer

S50 2250 @ 1:170 Abandoned Foul Water Sewer

S3 2250 @ 1:170 Abandoned Surface Water Sewer

Proposed Sewer Easement

Proposed S38 Road Gully

Surface Water Dragout

Foul Dragout

United Utilities Land Pumping Station

Suds Proposed for Adoption

Drag Out Pipe 1500

Surface Water Dragout

Foul Water Dragout

Back Drop

Electric Cable

E	30.06.22	Updated manholes to UU references. S2-S7 drainage run removed from drawing.	CLB	---
D	17.12.21	S1 Location updated. S55-S59 Cover levels and inverts updated.	CLB	---
C	06.10.21	Existing foul sewer added to drawing.	CLB	---
B	15.07.21	Dragouts locations added to drawing.	CLB	---
A	28.06.21	S15 and S16 Change to Headwalls	CLB	---
Revision	Date	Amendment	By	Check

Development	BILLINGTON		
Location	NEDDY LANE		
Marketing Name	CALDER GRANGE		
Drawing Title	DRAINAGE LAYOUT		
Drawing Number	4441 / Eng / 001-3	Revision	E
Drawn By	CLB	Scale @ A1	1:500
Checked by	-	First Issue	20.04.21


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