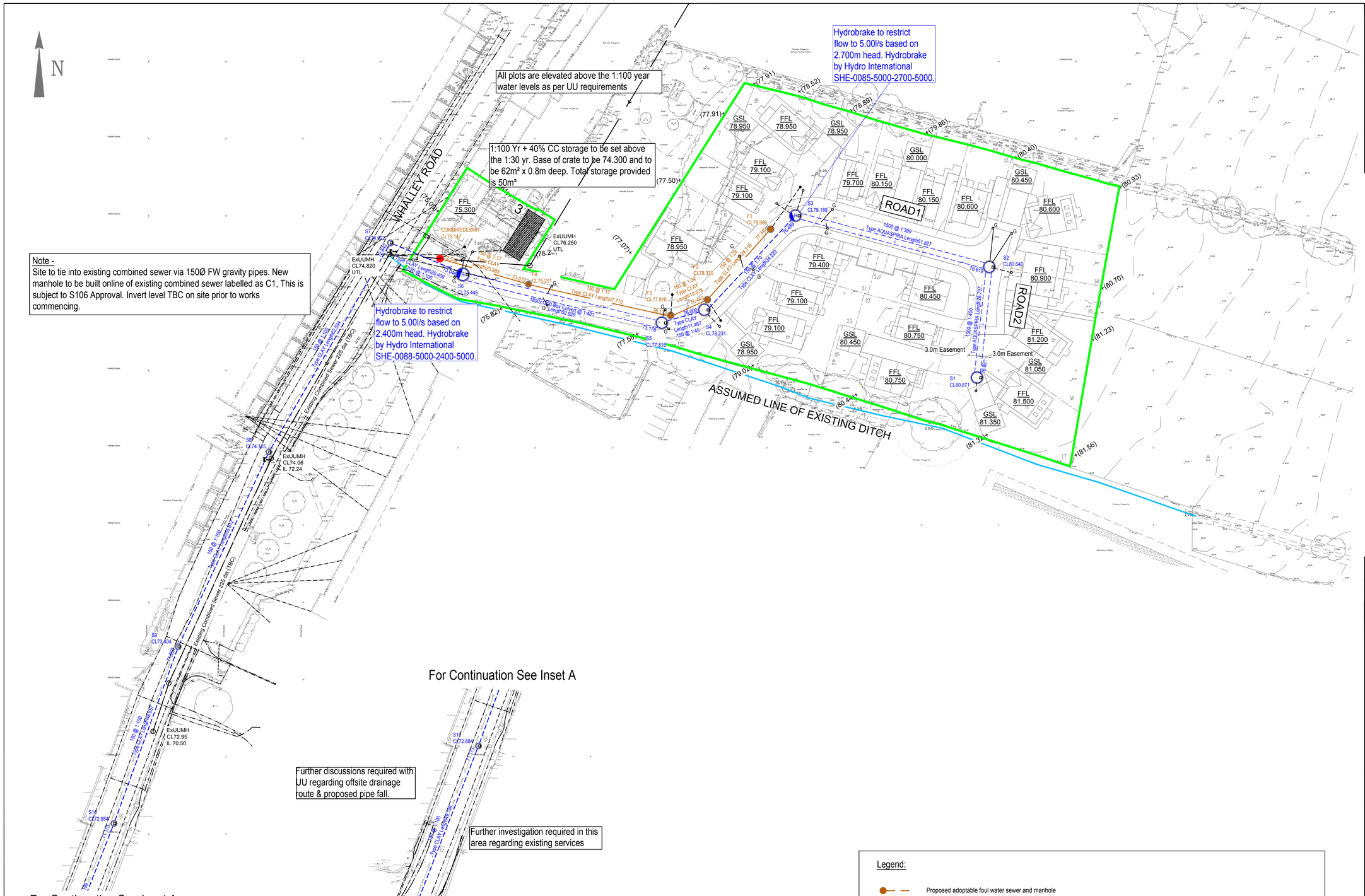

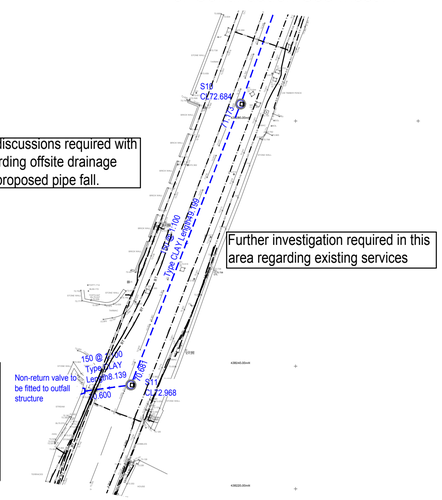

NOTE:- Drainage designed to contain the 2 year, 30 year and 100 year + 40% climate change event storm event - Drainage design allows for 10% Urban Creep
2 year- No surcharge
30 year- No flooding
100 year +40% climate change event- No flooding-
Flood volumes stored in offline crates

The details provided on this drawing are subject to comments by all the relevant approving authorities. Until such time as all comments have been received and incorporated onto the drawings, all the information provided and costings, are used at Mulberry Homes risk and no liability will be accepted by RSK. Scheme based on site plan 1249-M-PL01 by Gallagher Technical & Design Ltd.

Prior to any construction, the contractor must confirm the precise invert level and pipe diameter of the receiving drainage system and must immediately advise RSK of any variation to that upon which the design has been based.

All Existing Services to be confirmed prior to any works on site commencing.

Note -
Any Drainage related works to be constructed in accordance with United Utilities Sewers For Adoption 6th addition standard details.

Legend:

- Proposed adoptable foul water sewer and manhole
- Foul water lateral connection and demarcation manhole
- Proposed adoptable surface water sewer and manhole
- Surface water lateral connection and demarcation manhole
- Combined water sewer and manhole
- FFL 78.500 — Finished Floor Level
- +(77.00) — Existing site boundary level
- Development Boundary
- Foul water lateral connection and demarcation manhole 150Ø
- Surface water lateral connection and demarcation manhole 150Ø
- Existing Combined sewer and manhole
- Proposed Easement
- 1 ! — FFL higher than exisitng ground to achieve drainage and stay above 100 year water level. Causing high retention near 3rd party land and stepped part M

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

Notes

- All adoptable sewer works and material to be in accordance with Sewers for Adoption 6th Edition, The Relevant British/European and United Utilities' Standards/Requirements/Addendum and Kitemarked.
- Manhole covers shall have a minimum clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of United Utilities before any sewer works are carried out.
- United Utilities is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
- Cover slabs must carry the BSI Kitemark or will be rejected by United Utilities Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the United Utilities specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
- Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in Sewers for Adoption 6th Edition for restrictions on tree planting adjacent to sewers).
- Unless noted otherwise, sewers are to be laid in Class S bedding in accordance with United Utilities standard details.Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete bed and surround shall be provided.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2) and in accordance with United Utilities standard embedment details.
- United Utilities policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P10	09.04.21	Surface Water revised to suit client comments	MAR		
P9	29.03.21	Surface water outfall route into Whalley Road updated as requested by client	MAR		

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Client: MULBURY HOMES

Project Title: Old Row Barrow

Status: INFORMATION

Drawing Title: Drainage Layout

Drawn	Date	Checked	Date	Approved	Date
AN	Jan 19	MAR	Jan 19		

Scale	Orig Size	Dimensions
1:500	A1	

Project No. 881590
Drawing File
Drawing No. ENG001
Rev. P10